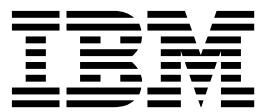


Version 9 Release 1
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IBM Campaign Administrator's Guide



Note

Before using this information and the product it supports, read the information in "Notices" on page 395.

This edition applies to version 9, release 1, modification 0 of IBM Campaign and to all subsequent releases and modifications until otherwise indicated in new editions.

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Chapter 1. IBM Campaign administration overview

The **Settings** menu provides access to most of the tasks that Campaign administrators typically perform.

Table 1. Templates and customization (Settings > Campaign Settings page)

Option	Description
Custom Attribute Definitions	Define attributes that can be used in campaigns, offers, and cells. For example, you can define an offer attribute of "Interest Rate" to store values for mortgage offers.
Offer Template Definitions	An offer template defines the structure for an offer. Offer templates are required. Users cannot create an offer without basing it on a template.

Table 2. Data source operations (Settings > Campaign Settings page)

Option	Description
Manage Table Mappings	<ul style="list-style-type: none">User tables contain data about your company's customers, prospects, or products, for use in marketing campaigns. You must map user tables or files to make the data accessible for use in flowcharts.System tables contain IBM® Campaign application data. They are configured during installation.
View Datasource Access	View the system table database and all configured customer databases. Select a database to see its configuration details. Log in or out of customer databases.
Manage Dimension Hierarchies	Use dimension hierarchies to group data based on value ranges. Examples are age, income, product, and distribution channel. You can create any kind of hierarchy that relates to your business or campaign.
Manage Audience Levels	An audience level is an identifiable group that can be targeted by a marketing campaign. Examples are Household, Prospect, Customer, and Account. Flowchart designers can target and switch between audiences or scope one audience level by another. For example, you can target one individual per household.
View System Log	This option opens the Campaign Listener log (ac1snr.log).

Table 3. Other administrative tasks

Task	Description
Manage users, groups, role assignments, security policies, and permissions	Use the Settings menu to adjust security and permissions across the IBM EMM suite. Instructions are provided in the <i>IBM Marketing Platform Administrator's Guide</i> and the <i>IBM Campaign Administrator's Guide</i> .
Adjust configuration properties	Choose Settings > Configuration to access configuration properties. <ul style="list-style-type: none">Use the Campaign category to adjust properties for IBM Campaign.Use the Reports category to adjust reporting properties.Use the General and Platform categories to adjust properties that affect the IBM EMM suite. For information, see the online help or the <i>IBM Marketing Platform Administrator's Guide</i>.Configuration categories for other products, such as eMessage, are described in the documentation for those products.
Adjust settings for individual flowcharts	Use the Admin menu in the flowchart window to affect individual flowcharts. Information is provided in the <i>IBM Campaign Administrator's Guide</i> .

Table 3. Other administrative tasks (continued)

Task	Description
Manage contact history and response history	Modify the contact history and response history system tables that are supplied with Campaign to capture information about communications with your customers. Information is provided in the <i>IBM Campaign Administrator's Guide</i> .
Run utilities to complete administrative functions	Use the command line utilities to complete server, session, and database tasks. Information is provided in the <i>IBM Campaign Administrator's Guide</i> .
Use the IBM Scheduler to schedule flowchart runs	See the <i>IBM Marketing Platform Administrator's Guide</i> .

Table 4. Campaign integration tasks

Task	Description
Install and configure reports that are Cognos® based	See the <i>IBM EMM Reports Installation and Configuration Guide</i> that is supplied with Marketing Platform.
Integrate Campaign with other IBM products	See the following documents: <ul style="list-style-type: none">• Installation and upgrade guides• Integration guides supplied with the product that you are integrating• <i>IBM Marketing Platform Administrator's Guide</i>• <i>IBM Campaign Administrator's Guide</i>

Logging in to IBM EMM

Use this procedure to log in to IBM EMM.

Before you begin

You need the following.

- An intranet (network) connection to access your IBM EMM server.
- A supported browser installed on your computer.
- User name and password to sign in to IBM EMM.
- The URL to access IBM EMM on your network.

The URL is:

`http://host.domain.com:port/unica`

where

host is the machine where Marketing Platform is installed.

domain.com is the domain in which the host machine resides

port is the port number on which Marketing Platform application server is listening.

Note: The following procedure assumes you are logging in with an account that has Admin access to Marketing Platform.

Procedure

Access the IBM EMM URL using your browser.

- If IBM EMM is configured to integrate with Windows Active Directory or with a web access control platform, and you are logged in to that system, you see the default dashboard page. Your login is complete.
 - If you see the login screen, log in using the default administrator credentials. In a single-partition environment, use `asm_admin` with `password` as the password. In a multi-partition environment, use `platform_admin` with `password` as the password.
- A prompt asks you to change the password. You can enter the existing password, but for good security you should choose a new one.
- If IBM EMM is configured to use SSL, you may be prompted to accept a digital security certificate the first time you sign in. Click **Yes** to accept the certificate.

If your login is successful, IBM EMM displays the default dashboard page.

Results

With the default permissions assigned to Marketing Platform administrator accounts, you can administer user accounts and security using the options listed under the **Settings** menu. To perform the highest level administration tasks for IBM EMM dashboards, you must log in as `platform_admin`.

IBM Campaign documentation roadmap

IBM Campaign provides documentation and help for users, administrators, and developers.

Table 5. Get up and running

Task	Documentation
View a list of new features, known issues, and limitations	<i>IBM Campaign Release Notes</i>
Learn about the structure of the Campaign database	<i>IBM Campaign System Tables and Data Dictionary</i>
Install or upgrade Campaign and deploy the Campaign web application	One of the following guides: <ul style="list-style-type: none"> • <i>IBM Campaign Installation Guide</i> • <i>IBM Campaign Upgrade Guide</i>
Implement eMessage, if you purchased eMessage	<ul style="list-style-type: none"> • The <i>IBM Campaign Installation and Upgrade guides</i> explain how to install and prepare eMessage components in the local environment. • The <i>IBM eMessage Startup and Administrator's Guide</i> explains how to connect to the hosted messaging resources.
Implement the IBM Cognos reports provided with Campaign	<i>IBM EMM Reports Installation and Configuration Guide</i>

Table 6. Configure and use Campaign

Task	Documentation
<ul style="list-style-type: none"> • Adjust configuration and security settings • Prepare Campaign for users • Run utilities and perform maintenance • Integrate Campaign with Digital Analytics 	<i>IBM Campaign Administrator's Guide</i>
<ul style="list-style-type: none"> • Create and deploy marketing campaigns • Analyze campaign results 	<i>IBM Campaign User's Guide</i>
Improve flowchart performance	<i>IBM Campaign Tuning Guide</i>

Table 6. Configure and use Campaign (continued)

Task	Documentation
Use Campaign macros	<i>IBM Macros for IBM EMM User's Guide</i>

Table 7. Integrate Campaign with other products

Task	Documentation
Configure eMessage offer integration.	<i>IBM Campaign Administrator's Guide</i>
Integrate and use Campaign with Digital Analytics	<i>IBM Campaign Administrator's Guide</i>
Integrate and use Campaign with IBM SPSS® Modeler Advantage Enterprise Marketing Management Edition	<i>IBM Campaign and IBM SPSS Modeler Advantage Enterprise Marketing Management Edition Integration Guide</i>
Integrate and use Campaign with Marketing Operations	<i>IBM Marketing Operations and IBM Campaign Integration Guide</i>

Table 8. Develop for Campaign

Task	Documentation
Develop custom procedures with the API	<ul style="list-style-type: none"> • <i>IBM Campaign Offer API Specification</i> • JavaDocs in devkits\CampaignServicesAPI
Develop Java™ plug-ins or command-line executables to add validation to Campaign	<ul style="list-style-type: none"> • <i>IBM Campaign Validation PDK Guide</i> • JavaDocs in devkits\validation

Table 9. Get help

Task	Instructions
Open online help	<ol style="list-style-type: none"> 1. Choose Help > Help for this page to open a context-sensitive help topic. 2. Click the Show Navigation icon in the help window to display the full help.
Obtain PDFs	<p>Use either of the following methods:</p> <ul style="list-style-type: none"> • Choose Help > Product Documentation to access Campaign PDFs. • Choose Help > All IBM EMM Suite Documentation to access all available documentation. • Access all documentation during the installation process from the IBM EMM installer.
Get support	Go to http://www.ibm.com/ and click Support & downloads to access the IBM Support Portal.

Chapter 2. Security in IBM Campaign

IBM Campaign uses the security functions of Marketing Platform to control user access to objects and features.

Administrators use the Marketing Platform security interface to configure the user accounts, group memberships, roles, and permissions required for users to access IBM Campaign.

User access to the objects and features in IBM Campaign is implemented using security policies.

About security policies

Security policies are the "rule books" that govern security in IBM Campaign; they are consulted each time a user performs an action in the application. Security policies are created per partition. There is no sharing of security policies across partitions. Each partition in IBM Campaign can have multiple security policies.

A security policy consists of multiple roles that you define. Each role contains a set of permissions that determine the actions users can perform and the objects that they can access. You can assign users to a role directly, or assign groups to a role (users in those groups would be assigned the role).

When you create an object such as a campaign or offer in the top-level folder, you apply a security policy to the object. In addition, when you create a top-level folder, you apply a security policy to the folder, and any objects or subfolders you create within that folder inherit the security policy that you applied to the folder.

Applying security policies to objects or folders allows you to separate the objects in IBM Campaign for use by different groups of users. For example, you could configure your security policies so that users belonging to one policy cannot access or even view objects that are associated with other policies.

You can create your own security policies or use the default global security policy included with IBM Campaign.

The global security policy

Campaign includes a default global security policy that you can use as is or modify to suit the needs of your organization. If you choose not to create your own security policies, the global security policy is applied by default to the objects that you create in Campaign.

You can use the global policy in addition to your own policies, or use your own policies exclusively. You cannot delete the global policy, even if it is not in use.

Any security policies that you create exist under the global security policy. Under the global policy, you could create a separate security policy for employees of each division in your organization.

The global security policy contains six pre-defined roles; you can add roles to the global policy if needed. You cannot delete the pre-defined roles, but you can modify their permissions.

The pre-defined roles are:

- **Folder Owner** - All permissions enabled
- **Owner** - All permissions enabled
- **Admin** - All permissions enabled. The default user `asm_admin` is assigned this role.

- **Execute** - All permissions enabled
- **Design** - Read and write permissions on most objects. Cannot schedule flowcharts or sessions.
- **Review** - Read-only permissions

The global security policy applies to all users through the Owner and Folder Owner roles, including users who have not been assigned to any other specific role in the global policy. Because the global policy always applies, it can be used, for example, to globally deny permissions to a role.

How Campaign evaluates permissions

When a user performs a task or tries to access an object, Campaign performs the following steps:

1. Identifies all groups and roles to which this user belongs within the global security policy. A user can belong to one, many, or no roles. A user belongs to the Owner role if they own an object; they belong to the Folder Owner role if they own the folder in which an object resides. A user belongs to other roles only if they have been specifically assigned to that role (either directly or because they belong in a group assigned to that role).
2. Identifies whether the object being accessed has been assigned to a custom-defined policy, if any exist. If so, the system then identifies all groups and roles to which the user belongs within this custom policy.
3. Aggregates the permissions for all roles to which the user belongs, based on results from steps 1 and 2. Using this composite role, the system evaluates the permissions for the action as follows:
 - a. If any roles have **Denied** permission for this action, then the user is not allowed to perform it.
 - b. If no roles have **Denied** permission for this action, then it checks to determine whether any roles have **Granted** permission for this action. If so, the user is allowed to perform the action.
 - c. If neither a nor b is true, the user is denied the permission.

Using the Owner and Folder Owner roles

By default, each security policy contains an Owner and a Folder Owner role with all permissions granted. These roles are created by default when you create a security policy. You can modify the permissions of these roles or use the default permissions. You can also modify the permissions for these roles in the global security policy, but you cannot delete them.

The Owner and Folder Owner roles apply to all users; you do not need to assign users to them. The Owner role applies to single objects that a user created. The Folder Owner role applies to all objects in a folder that a user owns.

These roles are useful for restricting users' access to objects that they do not own. For example, you could create a Read-Only role that grants only read permissions on all objects within the security policy. Assign all users to the Read-Only role. As long as no other role explicitly denies permissions (for example, edit or delete), each user is allowed to edit or delete their own objects (under the Owner role) and objects in their own folders (under the Folder Owner role), but only view objects and folders that are owned by others (under the Read-Only role).

Guidelines for designing security policies

Follow these guidelines when designing security policies:

- **Keep the design simple.** Campaign allows you to create multiple security policies and roles, but you should keep the security design as simple as possible, and use as few policies and roles as possible to achieve your security needs. At the most minimal level, for example, you can use the default global security policy as is, without creating new roles or policies.
- **Avoid potential conflicts among security policies.** If your organization implements more than one security policy, keep in mind potential conflicts when designing the policies. For example, users with Move and Copy permissions in more than one security policy are able to move or copy objects and folders to locations across the policies in which they have these permissions. In doing so, because the

moved objects or folders take on the security policy of their destination (if under another folder), they might cause situations where the rightful users in one division are no longer able to access the moved objects because they have no roles in the destination security policy, or where users with roles in the destination security policy who were not intended to access the objects, find that they now can.

- **Assign view permissions to allow users to modify objects.** To modify many of the objects in Campaign, users must be granted both view and modify permissions for the object. This requirement applies to the following objects:
 - campaigns
 - flowcharts
 - offers
 - offer lists
 - offer templates
 - sessions
 - strategic segments

Security scenarios

This section provides security model examples and explains how they are implemented in IBM Campaign using security policies.

Scenario 1: Company with a single division

All of the employees in your company work with the same set of objects (campaigns, offers, templates, and so on). Sharing and re use of objects are encouraged; there is no need to make sure that groups of employees cannot access each other's objects. You need to create sets of permissions that will determine employees' ability to access, modify, or use these objects, based on their roles within the organization.

Solution

Only a single security policy is required, as objects do not have to be separated by group or division. In the existing global security policy, define roles corresponding to the employee jobs, and for each role, define the appropriate permissions for each object or function.

Table 10. Object permissions for this scenario

Functions/Role	Manager	Designer	Reviewer
Campaigns	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Add Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Edit Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Delete Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Run Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• View Campaign Summary	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Offers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Table 10. Object permissions for this scenario (continued)

Functions/Role	Manager	Designer	Reviewer
• Add Offers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Edit Offers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Delete Offers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Retire Offers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• View Offer Summary	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

For example, a Manager has full access and editing ability for campaigns and offers. A Reviewer can access campaigns and offers, but cannot add, edit, delete, or run them.

Optionally, you can also create user groups in IBM EMM that match these roles, and then assign user permissions simply by adding users to these groups.

The following table shows a sample subset of the object permissions for this scenario.

Table 11. Object permissions for this scenario

Functions/Role	Manager	Designer	Reviewer
Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Add Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Edit Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Delete Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Run Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• View Campaign Summary	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Offers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Add Offers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Edit Offers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Delete Offers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• Retire Offers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
• View Offer Summary	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Scenario 2: Company with multiple separate divisions

Your company has two business divisions, Eastern and Western, that do not share data between them. Within each division, people performing different functions need to access the same objects (campaigns, offers, templates), but with differing permissions to act on these objects, depending on their role.

Solution

Define two separate security policies, each with the appropriate roles and permissions. The roles in each security policy can be the same or different, depending on the needs of each division. Except for individuals who need to work across both divisions (for example, the controller, cross-divisional managers, or the CEO), assign each user to a role within only one policy. Do not assign any role to the users in the global policy. For users that work across both divisions, assign them a role in the global policy and grant them the desired permissions.

Create top-level folders that belong to each policy, to hold campaigns, offers, and so on. These folders are specific to each division. Users with roles in one policy cannot see the objects belonging to the other policy.

The following tables show only a sample subset of the possible object permissions in Campaign.

Table 12. Eastern Division Security Policy

Functions/Role	Folder Owner	Object Owner	Manager	Designer	Reviewer
Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Add Campaigns	<input checked="" type="checkbox"/>				
• Edit Campaigns	<input checked="" type="checkbox"/>				
• Delete Campaigns	<input checked="" type="checkbox"/>				
• View Campaign Summary	<input checked="" type="checkbox"/>				
Offers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Add Offers	<input checked="" type="checkbox"/>				
• Edit Offers	<input checked="" type="checkbox"/>				
• Delete Offers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• View Offer Summary	<input checked="" type="checkbox"/>				

Table 13. Western Division Security Policy

Functions/Role	Folder Owner	Object Owner	Manager	Designer	Reviewer
Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Add Campaigns	<input checked="" type="checkbox"/>				
• Edit Campaigns	<input checked="" type="checkbox"/>				
• Delete Campaigns	<input checked="" type="checkbox"/>				
• View Campaign Summary	<input checked="" type="checkbox"/>				
Offers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Add Offers	<input checked="" type="checkbox"/>				
• Edit Offers	<input checked="" type="checkbox"/>				
• Delete Offers	<input checked="" type="checkbox"/>				
• Add Campaigns	<input checked="" type="checkbox"/>				

Scenario 3: Restricted access within a division

Employees within a division of your company require read access to the same set of objects (campaigns, offers, templates, and so on), but they are allowed to edit and delete only their own objects and objects in folders that they own.

Solution

Define a Read-Only role that grants only read permissions on objects. Assign all users within the division to this role. Keep the default permissions as defined for the Owner and Folder Owner roles.

Note: If your company requires only a single security policy, you can use the global policy and assign all users to the Review role.

Each user is allowed to edit or delete their own objects (under the Owner role) and objects in their own folders (under the Folder Owner role), but only view objects and folders owned by others (under the Read-Only role).

The following table shows a sample subset of the object permissions for this scenario.

Table 14. Object permissions for Scenario 3

Functions/Role	Folder Owner	Object Owner	Reviewer
Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Table 14. Object permissions for Scenario 3 (continued)

Functions/Role	Folder Owner	Object Owner	Reviewer
• Add Campaigns			
• Edit Campaigns			
• Delete Campaigns			
• View Campaign Summary			
Offers			
• Add Offers			
• Edit Offers			
• Delete Offers			
• View Offer Summary			

Implementing security policies

You can create and delete security policies in IBM Campaign and apply security policies to folders and objects.

Note: You must have permission to administer the User Roles and Permissions page in Marketing Platform to work with IBM Campaign security policies. In a multi-partition environment, only the platform_admin user, or another account with the PlatformAdminRole role, can work with security policies in all partitions.

Creating security policies

Follow these steps to create security policies. Each partition in IBM Campaign can have one or more security policy.

Procedure

1. Click **Settings > User roles and permissions**.
2. Under the **Campaign** node, select the partition where you want to add a security policy.
3. Click **Global policy**.
4. On the right of the page, click **Add policy**.
5. Enter a policy name and description.
6. Click **Save changes**.

The new policy is listed under the Global Policy on the User Roles and Permissions page. By default, the policy contains a Folder Owner role and an Object Owner role.

Deleting security policies

You can delete user-created security policies in IBM Campaign if the policies are not in use. You cannot delete the Global Policy.

About this task

Do not delete any security policies that have been applied to objects in IBM Campaign.

To delete a security policy that is in use, first set the security policy of every folder or object that is using that security policy to a different policy (for example, the global policy). Otherwise, the objects using the deleted policy might become inaccessible. To change the security policy of an object, you must move the object into a folder with the desired security policy or into the top-level root folder.

Follow the steps below to delete a security policy that is not being used.

Procedure

1. Click **Settings > User roles and permissions**.
2. Under the **Campaign** node, select the partition where you want to delete a security policy.
3. Click the plus sign next to **Global policy**.
4. Click the policy that you want to delete.
5. Click **Delete policy**.
6. Click **OK** to confirm the deletion.

How to assign security policies to folders or objects

When you create a top-level folder or object in IBM Campaign, you must select a security policy for it. Only policies in which you have been assigned a role are available for you to associate with top-level objects or folders.

By default, all objects in IBM Campaign are associated with the global policy, but you can assign an optional custom-defined policy.

Keep in mind the following rules when associating a folder or object with a security policy:

- **You cannot assign a security policy to objects within folders.** Objects automatically inherit the security policy of the folder in which they reside.
- **The top-level folder determines the security policy.** Objects within a folder, including sub folders, inherit the security policy of the parent folder. In other words, the security policy of the top-level folder determines the security policy of objects and subfolders within it. Therefore, you cannot manually assign a security policy to objects within folders. To change the security policy of an object, you must move the object into a folder with the desired security policy or into the top-level root folder.
- **Security policy changes when objects are moved or copied.** Objects and folders can be moved or copied across security policies, but the user performing the move or copy must have permissions to do so, in both the source and destination policies.

After an object or folder is moved or copied to a folder or location belonging to a different security policy than its source, the security policy of the lower-level objects or subfolders is automatically changed to the security policy of the new folder or location.

About administrative permissions in Campaign

Administrative permissions in IBM Campaign are assigned for each partition. Users with these permissions can perform the allowed actions on any objects within the partition, regardless of the security policy used in the folders that contain the objects.

Each partition includes four pre-defined Administrative roles:

- **Admin:** All permissions enabled. The default user `asm_admin` is assigned this role.
- **Execute:** Most permissions enabled, with the exception of administrative functions, such as performing cleanup operations, changing object/folder ownership, running the `gen rpt` Command Line Tool, Manage Global Suppressions, and Disable Suppression in Flowchart.
- **Design:** Same permissions as the Execute role.
- **Review:** Read-only access to all objects. For flowcharts, these users are allowed to access the edit mode of a flowchart, but save is not allowed.

You can add other administrative roles for each partition as needed.

The procedures for managing administrative roles and permissions in IBM Campaign are the same as the procedures for managing roles and permissions in IBM Marketing Platform.

Configuring report folder permissions

In addition to controlling access to the **Analytics** menu item and the **Analysis** tabs for object types (campaigns and offers, for example), you can configure permissions for groups of reports that are based on the folder structure in which they are physically stored on the IBM Cognos system.

Before you begin

Before you run Sync Report Folder Permissions, you must ensure that the following conditions exist:

- Reporting is enabled.
- The Cognos server where reports are configured is up and running.

Procedure

Complete the following steps to configure report folder permissions:

1. Log in as a Campaign administrator who has the **ReportSystem** role.
2. Select **Settings > Sync Report Folder Permissions**.

The system retrieves the names of the folders that are located on the IBM Cognos system, for all partitions. (This means that if you decide to configure folder permissions for any partition, you must configure it for all of them.)

3. Select **Settings > User Roles & Permissions > Campaign**.
4. Under the **Campaign** node, select the first partition.
5. Select **Add Roles and Assign Permissions**.
6. Select **Save and Edit Permissions**.
7. On the **Permissions** form, expand **Reports**.

The Reports entry does not exist until after you run the **Sync Report Folder Permissions** option for the first time.

8. Grant permission for **Performance Reports** to the appropriate role.
9. Configure the access settings for the report folders appropriately and then save your changes.
10. Repeat steps 4 through 8 for each partition.

Reference: Administrative permissions in Campaign

For each partition, you can assign administrative permissions to determine feature access by role. For example, you can allow the Design role to view flowchart logs but not clear the logs.

Each partition includes four pre-defined Administrative roles:

- **Admin:** All permissions enabled. The default user `asm_admin` is assigned this role.
- **Execute:** Most permissions enabled, with the exception of administrative functions, such as performing cleanup operations, changing object/folder ownership, running the `genrpt` Command Line Tool, Manage Global Suppressions, and Disable Suppression in Flowchart.
- **Design:** Same permissions as the Execute role.
- **Review:** Read-only access to all objects. For flowcharts, these users are allowed to access the edit mode of a flowchart, but save is not allowed.

You can add other administrative roles for each partition as needed.

To access administrative permissions, click **Settings > User Roles & Permissions**. Under the **Campaign** node, select a partition. Click **Add Roles and Assign Permissions**. On the Properties for Administrative Roles page, click **Save and Edit Permissions**.

Campaign includes administrative permissions in the following categories:

- Administration
- Audience Levels
- Data Sources
- Dimension Hierarchies
- History
- Logging
- Reports (folder permissions)
- System Tables
- User Tables
- User Variables

Note: To set permissions for all features in a category, click the category heading box. For example, click the box next to **Logging** to adjust all of the logging settings at the same time.

Administration

The permissions in the Administration category provide access to reports, tools, and utilities that can have system-wide effects on Campaign.

Table 15. Administration (Administrative permissions)

Permission	Description
Access monitoring area	Allows access to the Campaign Monitoring area.
Perform monitoring tasks	Allows users to use the monitoring tasks in the Campaign Monitoring area.
Access analysis area	Allows access to reports in the Campaign Analytics area.
Access optimizations link	If Contact Optimization is installed, allows access to that application.
Run <code>svradm</code> Command line tool	Allows a user to use the Campaign Server Manager (<code>unica_svradm</code>) for administrative functions.
Run <code>genrpt</code> Command line tool	Allows running of the Campaign report generation utility (<code>unica_acgenrpt</code>).

Table 15. Administration (Administrative permissions) (continued)

Permission	Description
Takeover flowcharts in edit mode	Allows taking over control of flowcharts in Edit or Run mode from other users. Note: Taking over control of a "locked" flowchart locks out the other user and all changes in the flowchart since the last save are lost.
Connect to running flowcharts	Allows attaching to running flowcharts through Campaign Server Manager (<code>unica_svradm</code>) or the Campaign user interface.
Terminate server processes	Allows a user to stop the Campaign Server (<code>unica_acsvr</code>) by using the Campaign Server Manager (<code>unica_svradm</code>).
Terminate campaign listener	Allows a user to stop the Campaign Listener (<code>unica_aclsnr</code>) by using the Campaign Server Manager (<code>unica_svradm</code>) or using the <code>svrstop</code> utility.
Run sesutil Command line tool	Allows a user to run the Campaign session utility (<code>unica_acsesutil</code>).
Override virtual memory Settings	Allows a user to override the Virtual Memory setting in flowchart Advanced Settings.
Access custom attributes	Allows access to, and managing of, custom attribute definitions from the Campaign Settings page.
Cell report access	Allows access to cell reports from the Reports icon  on a flowchart Edit page. Excludes access to the Cell Content Report unless this permission is also explicitly granted.
Cell report export	If cell report access is granted, allows printing and exporting of cell reports.
Cell content report Access	Allows access to the Cell Content report from the Reports icon on a flowchart Edit page.
Cell content report export	If Cell Content Report Export is granted, allows printing and exporting of the Cell Content report.
Perform cleanup operations	Allows a user to use <code>unica_acclean</code> or a custom tool for cleanup operations.
Change object/folder ownership	Allows a user to change the ownership of an object or folder.

Audience levels

The permissions in this category allow manipulation of audience levels, which represent targets of campaigns, such as Customer or Household.

Table 16. Audience levels (Administrative permissions)

Permission	Description
Add audience levels	Allows creation of new audience levels under Manage audience levels on the Campaign Settings page.
Delete audience levels	Allows deleting of existing audience levels under Manage audience levels on the Campaign Settings page.
Manage global suppressions	Allows creation and configuration of global suppression segments in Campaign.
Disable suppression in flowchart	Allows clearing or selecting the Disable global suppressions for this flowchart check box on the flowchart Advanced Settings dialog.

Data sources

The permissions in this category affect access to data sources.

Table 17. Data sources (Administrative permissions)

Permission	Description
Manage datasource access	Allows managing data source logins from the Administration area and within flowcharts.
Set save with DB authentication	Allow enabling the Save with database authentication information flag in table catalogs and flowchart templates.

Dimension hierarchies

The permissions in this category allow manipulation of dimension hierarchies, which can be used in reports and Cubes.

Table 18. Dimension hierarchies (Administrative permissions)

Permission	Description
Add dimension hierarchies	Allows creation of new dimension hierarchies.
Edit dimension hierarchies	Allows editing of existing dimension hierarchies.
Delete dimension hierarchies	Allows deletion of existing dimension hierarchies.
Refresh dimension hierarchies	Allows refresh of existing dimension hierarchies.

History

The permissions in this category affect logging to Contact History and Response History tables.

Table 19. History (Administrative permissions)

Permission	Description
Log to contact history Tables	Allows enabling or disabling logging to contact history tables when configuring contact processes.
Clear contact history	Allows clearing entries from the contact history tables.
Log to response history Tables	Allows enabling or disabling logging to response history tables when configuring the Response process.
Clear response history	Allows clearing entries from the response history tables.

Logging

The permissions in this category affect manipulation of system and flowchart logs and options.

Table 20. Logging (Administrative permissions)

Permission	Description
View system and flowchart Logs	Allows viewing of flowchart logs and the system log
Clear flowchart logs	Allows clearing of flowchart logs.
Override flowchart log Options	Allows override of default flowchart logging options.

Reports (folder permissions)

The Reports node appears on the partition permissions page after running **Sync report folder permissions** from the **Settings** menu for the first time. The synchronize process determines the folder structure of the reports physically located on the IBM Cognos system, and then lists the names of those folders under this node.

The settings under this node grant or deny access to the reports in the folders that appear in the list.

System tables

The permissions in this category control the ability to map, unmap, and manipulate IBM Campaign system tables.

Table 21. System tables (Administrative permissions)

Permission	Description
Map system tables	Allows mapping system tables.
Remap system tables	Allows remapping system tables.
Unmap system tables	Allows unmapping system tables.
Delete system table records	Allows deletion of records from system tables.

User tables

The permissions in this category control the ability to map, unmap, and manipulate IBM Campaign user tables. User tables contain data about customers and prospects for use in flowcharts.

Table 22. User tables (Administrative permissions)

Permission	Description
Map base tables	Allows mapping base tables.
Map dimension tables	Allows mapping dimension tables.
Map general tables	Allows mapping general tables.
Map delimited files	Allows mapping user tables to delimited files.
Map fixed-width flat files	Allows mapping user tables to fixed-width flat files.
Map database tables	Allows mapping user tables to database tables.
Remap user tables	Allows remapping of user tables.
Unmap user tables	Allows unmapping of user tables.
Recompute counts and values	Allows using Compute button in table mapping to recompute table counts and values.
Use raw SQL	Allows the use of raw SQL in Select process queries, custom macros, and dimension hierarchies. It is strongly recommended that you restrict the ability to use raw SQL to a user who has proper ACL privileges within your organization and disable this functionality from the server side for other users. The ability to use raw SQL in a flowchart process box presents an inherent security risk if not properly managed. Malicious use of raw SQL and stored procedures could impact the availability and security of the system. To reduce the risk of data or privacy loss, administrators are strongly advised to restrict user queries to a set of predefined or precompiled prepared statements and stored procedures. Also, restrict confidential and sensitive data from the user database to the IBM Campaign application.

User variables

The permissions in this category control the ability to manipulate user variables, which can be used in queries and expressions in flowchart processes.

Table 23. User variables (Administrative permissions)

Permission	Description
Manage user variables	Allows creating, deleting, and setting default values for user variables in flowcharts.
Use user variables	Allows use of user variables in output files or tables.

Windows impersonation administration

Windows impersonation is a mechanism that allows IBM Campaign administrators to associate IBM Campaign users with Windows users, so that IBM Campaign processes invoked by an IBM Campaign user run under the credentials of the corresponding Windows user.

For example, if Windows impersonation is enabled, when the IBM Campaign user `jsmith` edits a flowchart, a `unica_acsvr` process starts under the Windows user ID associated with the IBM Marketing Platform login name `jsmith`.

Why use Windows impersonation?

By using Windows impersonation, you are able to leverage the Windows-level security permissions for file access. If your system is set up to use NTFS, you can then control access to files and directories for users and groups. Windows impersonation also allows you to use Windows system monitoring tools to see which users are running which `unica_acsvr` processes on the server.

What is the relationship between Campaign users and Windows users?

To use Windows impersonation, you must establish a one-to-one relationship between Campaign users and Windows users. That is, each Campaign user must correspond to a Windows user with the exact same user name.

Typically, administration begins with a set of existing Windows users who will use Campaign. You must create Campaign users in Marketing Platform with the exact same names as the associated Windows users.

The Windows impersonation group

Each Windows user for whom you have set up a Campaign user must be placed in a special Windows impersonation group. You must then assign the group to specific policies.

To ease administrative tasks, you can then grant read/write/execute privileges to the Campaign partition directory for the group.

Windows impersonation and logging into IBM EMM

When Windows impersonation is set up, once users have logged into Windows, Campaign users are automatically logged into IBM EMM using a single sign-on. When they open a browser and go to the IBM EMM URL, they do not need to log in again, and they immediately see the IBM EMM start page.

Setting up Windows impersonation

Follow these instructions to set up Windows impersonation for IBM Campaign.

Before you begin

LDAP and Active Directory are required to run Windows impersonation. For details about setting up LDAP and Active Directory, see the *IBM Marketing Platform Administrator's Guide*.

To create a Windows impersonation group and assign it to policies, you must have administration privileges on the Windows server.

Procedure

1. On the Configuration page, set the value of the **enableWindowsImpersonation** property in the Campaign > unicaACListener category to TRUE.

Note: There might be additional property requirements based on your Windows Domain Controller setup. For more information, see the single sign-on section of the *Marketing Platform Administrator's Guide*.

2. Create Campaign users:

You can use Marketing Platform to create Campaign internal or external users.

Create external users by configuring Active Directory users and group synchronization. Each user you create must have the same login name as the user's Windows user name.

3. Create the Windows impersonation group:

Create a Windows group specifically for Campaign users. Then add the Windows users that correspond to Campaign users to this group.

For more information about creating groups, see your Microsoft Windows documentation.

4. Assign the Windows impersonation group to policies:

After you create a Windows group to store users that correspond to Campaign users, you must add the group to the following policies:

- Adjust memory quotas for a process
- Create Token object
- Replace a process level token

For more information about assigning groups to policies, see your Microsoft Windows documentation.

5. Assign rights to the Windows impersonation group:

Using Windows Explorer, grant read/write/execute access to the **partitions/partition_name** folder under your Campaign installation to the Windows impersonation group.

For more information about assigning rights to folders, see your Microsoft Windows documentation.

How Campaign uses data filters to restrict access to customer data

Administrators can define data filters in Marketing Platform to restrict IBM EMM users from accessing specific customer data. In Campaign, data filters affect flowchart output.

To restrict data access, Marketing Platform administrators define data filters and then assign users or groups of users to different data filters. For example, administrators can control access to customer data based on the geographical sales territory to which the IBM user is assigned.

To learn how to set up data filters, see the *IBM Marketing Platform Administrator's Guide*.

Data filters that are defined in Marketing Platform have the following effects in Campaign:

- Data filters apply to the Select, Extract, and Audience processes in Campaign flowcharts. For example, if a database table includes 2000 records but 500 of them are restricted by a data filter, a Select All in Campaign returns only 1500 records.
- Data filters do not affect design-time activities. For example, a data filter does not hide the values that are displayed when a field is profiled. Although users can see restricted data when they profile a field or build queries in a process configuration dialog, the query results do not include restricted data. Data filters are integrated into the SQL that the process box uses to query the table with which the filter is associated.
- Data filters do *not* apply to raw SQL queries or to custom macros that use raw SQL. For example, if you use **Select customer IDs using SQL** to create a raw SQL query in the Select Process Configuration dialog, any data filters are ignored when you run the query. This behavior is intentional, to provide advanced users with the ability to perform SQL queries without restrictions.

Important: Raw SQL queries override data filters, so users who perform SQL queries can access records regardless of data filters. If you do not want Campaign users to be able to use raw SQL, you must restrict their permissions.

Chapter 3. Database table administration

IBM Campaign administrators must set up database tables for use with IBM Campaign.

Database table administration includes the following activities:

- Map Campaign system tables, if this is not done during Campaign installation.
- Map user tables so that customer data can be used by Campaign flowcharts.
- Manage data dictionaries, which define the structure of user tables based on fixed-width flat files.
- Manage table catalogs, which enable the efficient management of mapped user tables.

Table administration concepts

IBM Campaign administrators need to understand the basic concepts about system tables and user tables.

What are system tables?

System tables are database tables that contain IBM Campaign application data.

System tables store metadata about campaign objects, including campaigns, sessions, flowcharts, offers, templates, custom macros, stored derived fields, and triggers. Contact and response history information is also stored in system tables.

The Campaign installation and configuration process includes setting up the Campaign system tables. For more information, see the installation documentation.

What are user tables?

User tables are tables that contain data that you use in processes within a Campaign flowchart. You can map user tables to tables in a relational database or to ASCII flat files.

Note: Before mapping a user table in IBM Campaign, ensure that the table uses only data types that Campaign supports. For a list of supported data types for each database, see “Supported data types for user tables” on page 28.

Typically, a user table contains data about your company's customers, prospects, or products. For example, a user table might contain columns for customer account data such as Account ID, Account Type, and Balance. You might want to use this data in a campaign that targets customers with certain account types and balances.

There are three types of user tables: Base tables, Dimension tables, and General tables.

What is a base record table?

A base record table is a table that contains data about potential contacts of campaigns, such as individual customers, businesses, accounts, or households.

Each base record table can be mapped to either a database table or an ASCII flat file (fixed-width or delimited) and must contain an identifier for that contact; that is, there must be one or more columns, which together store a unique identifier for the audience entity. These columns cannot be null for any record in the table.

You map the identifier in the base record table to one or more audience levels.

Processes in a flowchart select these audience level identifiers from base record tables when campaigns run.

What is a dimension table?

A dimension table is a database table that augments the data in a base record table mapped to a database table.

Note: Dimension tables cannot be mapped to flat files and they cannot be joined to base tables mapped to flat files. Dimension tables and their corresponding base tables must be mapped to database tables in the same physical database (that is, the same data source).

For example, a dimension table might contain demographic information based on zip code, accounts belonging to a customer, or the customer's transactions, product information, or purchase transaction details.

When you define a dimension table, you specify the key fields for joining the dimension table to the base record table.

What is a general table?

A general table is a free-format table to which you can export data from Campaign. It is the simplest table type that can be created and is used only to export data from Campaign for use by other applications (general tables cannot be subsequently accessed in Campaign, unless you map them as base tables).

You can define a general table in a relational database, as a delimited flat file, or as a flat file with a data dictionary. General tables do not have keys or audience levels.

You use general tables in the **Snapshot** process to capture campaign data for use by other applications. For example, you can define the **Snapshot** process to store historical data or mailing lists in the exported general table.

You use general tables only to export data; you cannot query or manipulate data in general tables in Campaign.

About table mapping

Mapping tables is the process of making external customer or system tables accessible in IBM Campaign.

A table mapping is the metadata that is used to define a base, dimension, or general table. It contains information on the data source, the table name and location, the table fields, audience levels, and data. Table mappings can be stored for re-use in table catalogs.

What is a data dictionary?

A data dictionary is a file that defines the format of data in a fixed-width ASCII flat file that is used in IBM Campaign either as a base table or as a general table.

A data dictionary is required to interpret the structure and format of a fixed-width ASCII text file. It defines the field names, their order, their data type (string or numeric) and the byte positions they occupy in the file. Data dictionaries are automatically created for fixed-width flat files created by Campaign and these typically do not need to be manually created or edited.

You use data dictionaries in output processes such as Snapshot, Mail List, and Call List to ensure that the flat file tables you create adhere to a specific structure.

A data dictionary defines the table fields, data types, and sizes. You can develop data dictionaries for vendor or channel-specific output and reuse them to create output of a predetermined format.

If you are using a fixed-width flat file created by a non-IBM third-party application, you may need to manually or programmatically create an associated data dictionary. Or you may want to copy an existing data dictionary and edit it to create a new file. You also can edit a data dictionary to change field names. You must be sure that you are not corrupting data if you choose to edit any of the other fields in the data dictionary.

What is a table catalog?

A table catalog is a collection of mapped user tables. Table catalogs store all of the user table mapping metadata information for re-use across flowcharts. You can also map contact and response history tables in a table catalog for inclusion and exclusion rules.

Table catalogs are stored by default in a binary format using a .cat extension. They can also be saved as XML files.

You use table catalogs to:

- Easily save, load, and update commonly used user tables.
- Create alternative data mappings (for example, to switch between running against a sample database and the production database).

You can save mapped user tables to a table catalog, then use the same table catalog in other flowcharts. This means you can:

- Make changes to the table catalog in one flowchart, then propagate these changes to other flowcharts by importing the updated table catalog into each flowchart.
- Retain the internal catalog that you first loaded for that flowchart, although you copy it to other flowcharts and make changes there.
- Make different changes to the internal catalogs of a number of different flowcharts, starting from one "template" table catalog.

System table administration tasks

System tables contain application data for IBM Campaign.

The following topics provide information about working with system tables.

Initial table administration tasks

After Campaign is installed, administrators must perform initial setup tasks for system tables, user tables, data dictionaries, and table catalogs.

Prerequisites: expected state following installation

The initial table administration tasks assume that the Campaign installation is complete, including:

- Setup and configuration of the Campaign system database
- Configuration of Campaign to access databases that contain user tables (that is, the data sources are defined)

For more information about these setup and configuration tasks, see the installation documentation.

In addition, you should define the necessary audience levels before you start to work with user tables, because you must specify audience levels related to your base tables.

To confirm that you are ready to begin the table administration tasks, perform the following tasks:

- "Testing system table access" on page 24
- "Testing user table access" on page 24

- “Mapping Customer audience level system tables” on page 25

Testing system table access

After Campaign is installed, administrators must confirm that the Campaign system tables are mapped and database connections are working properly.

Procedure

1. Select **Settings > Campaign settings**.
2. Click **Manage table mappings**.

The Table Mappings dialog opens, with **Show system tables** selected.

The Campaign system tables are mapped automatically when you set up the Campaign database, if you used UA_SYSTEM_TABLES as the ODBC name. For more information, see the installation documentation.

Each IBM Campaign system table entry should have a populated database table name in the right column. However, if your implementation is not using certain features, some system tables might remain unmapped.

What to do next

If the system tables are not mapped, contact the person who performed the Campaign installation and configuration.

Testing user table access

After Campaign is installed, administrators must confirm that Campaign is configured properly to access the necessary user tables.

Procedure

1. Select **Settings > Campaign Settings**.
2. Click **Manage Table Mappings**.
3. In the Table Mappings dialog, click **Show User Tables**. Initially, there are no mapped user tables and the list is empty.
4. Click **New Table**. The New Table Definition dialog opens.
5. Click **Next**.

You are prompted to specify whether to map to a file or database.

When **Map to Existing Table in Selected Database** is selected, you should see one or more databases in the **Select Data Source** list. If no entries appear in the Select Data Source box, you must define the data sources. For more information, see the installation documentation.

6. If Campaign is using one or more flat files for user data:
 - a. Select **Map to Existing File**, then click **Next**. The New Table Definition window now contains fields for the flat file and data dictionary location.
 - b. Click **Browse** to locate the necessary files, or enter the relative path and file name. Files must be located under the partition root of Campaign to be accessible.

Results

You can now map the user data into Campaign, as described in “User table administration tasks” on page 27.

You can also view the customer databases that Campaign is set up to access when editing a flowchart. Click **Settings > Campaign Settings** and select **View Datasource Access**. The **Database Sources** dialog opens. This dialog lists the system table database and all configured customer databases. From this dialog, you can log in and out of customer databases.

Mapping Customer audience level system tables

Campaign is delivered with an audience level called Customer. If you plan to use this audience level, you must map the Customer audience level tables after Campaign is installed.

About this task

The system database tables that support the Customer audience level are created when you run the provided system table creation script, as described in the installation documentation. After installation, you must map the tables as follows.

Note: If your key for selection is different, you can modify the supplied contact history and response history tables or create your own for your specific needs.

Procedure

1. Select **Settings > Campaign Settings**.
2. Click **Manage Table Mappings**.
3. In the Table Mappings dialog, click the heading IBM Campaign System Table to sort the list alphabetically.
4. Double-click an item in the list of system tables to map it to the appropriate Database Table Name, as indicated below.

IBM Campaign System Table	Database Table Name
Customer Contact History Table	UA_ContactHistory
Customer Detailed Contact History Table	UA_DtlContactHist
Customer Response History Table	UA_ResponseHistory
Customer Segment Membership Table	UA_SegMembership
Note: If you are not using strategic segments, do not map this table. For more information, see "About mapping segment membership tables."	

5. Close the Table Mappings dialog.

About mapping segment membership tables:

The segment membership table is one of the audience level system tables that Campaign creates when you define a new audience. If you use strategic segments in Campaign flowcharts or Optimize sessions within Contact Optimization, you must map the segment membership table to a database table that defines segment members.

For example, if you plan to use the default Customer audience in conjunction with strategic segments, you must map the Customer Segment Membership system table to the UA_SegMembership segment membership database table. For other audiences used with strategic segments, you would map the system table <audience name> Segment Membership to the database table that defines the segment members. You can use UA_SegMembership as a template for the database table.

Running the Create Seg process populates a database table if you have mapped it to a segment membership system table. If you run the Create Seg process when the database table is not mapped to the segment membership system table, you must re-run the Create Seg process to populate the table if you map it later. Otherwise, Optimize sessions in Contact Optimization that use strategic segments may provide inaccurate results.

If you are not using strategic segments in flowcharts or Optimize sessions

Using strategic segments in Campaign flowcharts and Contact Optimization sessions is optional. If you are not using strategic segments, the best practice is that you do not map the segment membership table. Mapping an audience's segment membership system table causes Campaign or Contact Optimization to refresh the table each time you run the flowchart or Optimize session that includes the audience. This is unnecessary processing overhead if you are not using strategic segments.

Mapping or remapping system tables

Most system tables are mapped automatically during initial installation and configuration if you used the system table data source `UA_SYSTEM_TABLES`.

About this task

For more information, see the installation documentation. If you must map system tables, continue with these instructions.

Important: Do not map or remap system tables when users are using Campaign.

Procedure

1. Select **Settings > Campaign Settings**.
2. Click **Manage Table Mappings**.
3. In the Table Mappings dialog, select **Show System Tables**.
4. Select the table to map from the **IBM Campaign System Table** list and double-click it or click **Map Table or Re-Map Table**.
The Select source database and match required fields dialog opens.
5. If the table is not automatically selected in the **Source Table** list, select it. Entries are alphabetically listed by owner.table names. Source table fields in the Campaign database are automatically mapped to required fields. For system tables, you do not need to add or remove any field mappings; all field entries are matched automatically.

Note: When you map a system table, do not select a different table from the Source Table list or you cannot complete the mapping. If you do this accidentally, click **Cancel** and select the correct table in the Table Mappings dialog.

6. Click **Finish**.

Unmapping system tables

Unmapping a system table can cause features and existing campaigns to stop working. If you must unmap a system table, unmap it only when no users are using Campaign.

About this task

Important: Unmapping a system table without remapping the table can cause significant application problems.

Procedure

1. Select **Settings > Campaign Settings**.
2. Click **Manage Table Mappings**.
3. In the Table Mappings dialog, select **Show System Tables**.
4. Select a table in the **IBM Campaign System Table** list, then click **Unmap Table**. You are prompted to confirm the unmapping.

What to do next

You must immediately remap the system table or be sure that it does not need to be mapped in your environment.

To unmap the segment membership table

Before you begin

About this task

When you unmap the segment membership table you must also clear existing cache files and restart the Campaign and Contact Optimization listeners.

Note: If you are using Contact Optimization, do not change the mapping of the segment membership table for an audience while an Optimize session that uses the audience is running.

Procedure

1. In Campaign, unmap the segment membership table for the audience.
2. Delete `unica_tbmgr.cache` from the `conf` directory of your Campaign installation.
By default, this file is located at `Campaign\partitions\<partition[n]>\conf`.
3. Delete `unica_tbmgr.cache` from the `conf` directory of your Contact Optimization installation.
By default, this file is located at `Optimize\partitions\<partition[n]>\conf`.
4. Restart the Campaign listener (`unica_aclsnr`).
5. Restart the Contact Optimization listener (`unica_aolsnr`).

Viewing system table contents

For convenience, you can view the contents of most system tables from the Campaign table manager.

About this task

You can only view the first 1000 rows of data in a table. Therefore, this function is of limited use for very large tables such as contact and response history tables. You cannot edit the system table data while viewing it.

Procedure

1. Select **Settings > Campaign Settings**.
2. Click **Manage Table Mappings**.
3. Select **Show System Tables**.
4. Select a system table and click **Browse**. A window opens showing the table data.
5. Click any column to sort on it. Click the column again to reverse the sort order. To close the window, click **X** in the upper-right corner.

User table administration tasks

User tables contain data about customers and prospects that are targeted in marketing campaigns. Be sure to define audience levels before you work with user tables.

The following topics provide information about working with user tables:

- “About working with user tables” on page 28
- “Guidelines for mapping user tables” on page 28
- “Supported data types for user tables” on page 28

- “Accessing data sources from within a flowchart” on page 31
- “Working with user tables while editing a flowchart” on page 31
- “Working with user tables from the Campaign Settings page” on page 32
- “To map a base record table to an existing database table” on page 32
- “Mapping a base record table to an existing file” on page 34
- “To map a dimension table” on page 36
- “To map a general table to a database table” on page 37
- “To map a general table to a file” on page 37
- “Re-mapping user tables” on page 38
- “Profiling values and counts” on page 39
- “To unmap a user table” on page 40
- “To create a new user table through an output process” on page 40

About working with user tables

Typically, most of the marketing data you will access from a flowchart will reside in a database, but it may be convenient to access data directly from a flat file.

Campaign supports the ability to work with data stored in either delimited ASCII flat files or fixed-width ASCII flat files with a data dictionary. You can map flat files as base tables and access them from within a flowchart; you cannot map flat files as dimension tables.

Direct access to flat files removes the need to first upload data into a database to use with Campaign. This is useful for data exported from third-party applications (such as Excel or SAS) and for transient, one-time use data (such as a campaign-specific seed list, last-minute suppressions, predictive model scores, and other uses).

Guidelines for mapping user tables

Follow these guidelines for mapped table and field names:

- Do not include spaces in the name.
- Begin the name with an alphabetic character.
- Do not use any unsupported characters. For more information about unsupported characters and naming restrictions for Campaign objects, see Chapter 19, “Special characters in IBM Campaign object names,” on page 317.
- Do not use function names or keywords from the IBM Macro Language for column headings on tables mapped from a database or a flat file. These reserved words can cause errors if used in column headings on mapped tables. For details about these reserved words, see the *IBM Macros for IBM EMM User’s Guide*.
- Do not use the following reserved keywords to map user tables: AGF, DF, ICGF, UCGF, PDF, ZN, UserVar. If you have already used the reserved keywords to map tables, you must remap the tables by using different names.
- Field names are not case-sensitive. If a field has been mapped, you can change the case in the field name without affecting the mapping.

Supported data types for user tables

Before you map user tables in Campaign, ensure that your tables use only the supported data types for each supported database. Data types that are not listed here are not supported.

Note: A column of datatype DATE, DATETIME, or TIMESTAMP of a table, when mapped in an IBM Campaign flowchart, appears as type TEXT with the format of the DATE, DATETIME, or TIMESTAMP stored in brackets, such as [DELIM_D_M_Y] or [DT_DELIM_D_M_Y]. Although its data type in table

mapping in the flowchart shows as TEXT, the application knows the format and handles it accordingly. Do not map columns of these three data types or any of the date- or time-related data types as an Audience ID column to a TEXT audience level. Mapping the date-related column as TEXT audience level is not supported.

DB2®

```
bigint  
char  
date  
decimal  
double  
float  
int  
numeric  
real  
smallint  
timestamp  
varchar
```

Netezza®

```
bigint  
byteint  
char(n) [1]  
date  
float(p)  
int  
nchar(n) [2]  
numeric(p, s)  
nvarchar(n) [2]  
smallint  
timestamp  
varchar(n) [1]
```

[1] Not supported when used in the same table with nchar or nvarchar.

[2] Not supported when used in the same table with char or varchar.

Oracle

DATE
FLOAT (p)
NUMBER [(p , s)] [1]
TIMESTAMP
VARCHAR2(size BYTE)

[1] Precision is required for NUMBER *unless* you set the data source property **Campaign > partitions > partition[n] > dataSources > [dataSourceName] > UseSQLToRetrieveSchema** to TRUE. If you do not specify a precision and you do not set **UseSQLToRetrieveSchema** to TRUE, Campaign assumes it can store the values in a data type that preserves 15 digits of precision. This can be problematic for fields that hold values whose precision exceeds 15 digits because precision will be lost when the value is brought into Campaign.

SQL Server

bigint
bit
char(n) [1]
datetime
decimal
float
int
nchar [2]
numeric
nvarchar(n) [2, 3]
real
smallint
text
tinyint
varchar(n) [1]

[1] Not supported when used in the same table with nchar or nvarchar

[2] Not supported when used in the same table with char or varchar.

[3] nvarchar(n) is supported but nvarchar(max) is not.

Teradata

bigint
byteint
char
date
decimal
float
int
numeric
smallint
timestamp
varchar

Accessing data sources from within a flowchart

To access the customer or prospect database tables from within a flowchart, you must ensure that you are logged in to the referenced databases.

Procedure

1. While you edit a flowchart, click the **Admin** icon  and select **Database Sources**.
The Database Sources window opens. The database that contains system tables is listed, as well as all databases that Campaign is configured to access.
2. To log in to a database, select it and click **Login**.
3. Click **Close**.

Results

You now have access to tables in that database. To query a table in that database, you must map that table, as described in the next section.

Working with user tables while editing a flowchart

You can work with user tables while editing a flowchart by:

- Using the **Admin** menu
- Mapping a new user table through the Select process
- Exporting data to a base or general table through Snapshot, Call List, and Mail List processes

Tasks for user tables that you access from the Admin menu

Click the **Admin** icon  and select **Tables**. The Table Mappings window opens, showing a list of mapped user tables.

The following are the tasks that you can then complete.

- “To map a base record table to an existing database table” on page 32
- “Mapping a base record table to an existing file” on page 34
- “To map a dimension table” on page 36

- “To map a general table to a database table” on page 37
- “To map a general table to a file” on page 37
- “Re-mapping user tables” on page 38
- “To unmap a user table” on page 40

Working with user tables from the Select process

In the Source tab of a Select process, in the **Input** drop-down list, select **New Table**. The New Table definition window opens.

The following are the tasks you can then perform:

- “To map a base record table to an existing database table”
- “Mapping a base record table to an existing file” on page 34

Working with user tables from exported data

You can create new user tables from output processes.

Working with user tables from the Campaign Settings page

Select **Settings > Campaign Settings**. The Campaign Settings page opens.

Then click **Manage Table Mappings**. The Table Mappings window opens.

You can then perform the following tasks:

- “To map a base record table to an existing database table”
- “Mapping a base record table to an existing file” on page 34
- “To map a dimension table” on page 36
- “To map a general table to a database table” on page 37
- “To map a general table to a file” on page 37
- “Re-mapping user tables” on page 38
- “To unmap a user table” on page 40

Note: Before mapping a user table in Campaign, ensure that the table uses only data types that Campaign supports. For a list of supported data types for each database, see “Supported data types for user tables” on page 28.

To map a base record table to an existing database table

About this task

You can map a new base record table to an existing database table:

- When editing a flowchart, either through the **Admin** menu, or a Select process, as described in “Working with user tables while editing a flowchart” on page 31.
- Through the Campaign Settings page, as described in “Working with user tables from the Campaign Settings page.”

You map a new base record table to make data accessible to processes in flowcharts.

Procedure

1. Begin from the **New Table Definition - Select the table type** window.

Note: When you access the table mapping wizard from a Select process, the Dimension Table and General Table options are not listed.

2. If necessary, select **Base Record Table**, then click **Next**.

3. Select **Map to Existing Table in Selected Database**, select the data source name, then click **Next**.
4. Select the table you want to map from the **Source Table** list.
The tables are listed in alphabetical order by `<owner>.<table_name>`. If you do not see a table you expect, check whether the data source is configured to filter specific table entries.
The source fields in the table you select are mapped automatically to new table fields in the base record table you are creating. To change the automatic mappings, select fields from the **Source Table Fields** list or the **New Table Fields** List, and use the **Add**, **Remove**, **Up 1**, and **Down 1** buttons, until the table is mapped as required.
You can click on the **Field Name** column in the **New Table Fields** section to automatically sort column names alphabetically in ascending (or descending) order.
5. Click **Next**.
6. Optionally, you can change the name which Campaign will use for the base record table and its fields to a more user-friendly value.
 - a. To change the table name, edit the name in the **IBM Campaign Table Name** field.
 - b. To change a field name, select the field name in the **New Table Fields** list, and edit the text in the **IBM Campaign Field Name** field.
7. Click **Next**.
8. Select an Audience Level from the drop-down list. The **Audience Fields** list is automatically populated with the fields required to define the selected audience level. You must match one or more fields in the new base table that correspond to each required key.
9. If the selected audience level is normalized (if each unique audience ID appears no more than once in the current base table), check **This audience level is normalized in this table**.
Setting this option correctly is important for correct configuration of options in an **Audience** process. If you don't know the correct setting, leave this option unchecked.
10. Click **Next**.
11. Optionally, in the Specify Additional audience levels screen, you can specify one or more additional audience levels contained in the base record table. Adding additional audience levels allows users to use this table as a "switching table" to translate from one audience level to another using the **Audience** process in a flowchart.
 - a. Click **Add**. The Audience Level and ID Fields window opens.
 - b. Select an **Audience Level Name**.
 - c. For each **Audience Field**, match appropriate field(s) from the base table to the corresponding key(s) in the audience level.
 - d. If the selected audience level is normalized (that is, each unique audience ID appears at most once in the current base table), check **This audience level is normalized in this table**.
 - e. Click **OK**.
 - f. Repeat steps a through f for each audience level you want to add for the base table, then click **Next**.
12. If dimension tables exist in the current table catalog, the Specify Relationship to Dimension Tables window opens:
 - a. Check the box to the left of any dimension table that is related to the base record table you are creating.
 - b. For each related dimension table, in the **New Table's Key Fields(s) To Use** list, select a field from the base table to match each listed key in the **Dimension Table's Key Field(s)** list, then click **Next**.
13. You can choose to pre-compute the distinct values and frequency counts for specific fields, or allow users to perform real-time profiling of data in the base record table.
14. Click **Finish**.

Results

You have created the base record table based on an existing database table. The new base table is part of the current table catalog, which you can manage through the table manager.

Mapping a base record table to an existing file

You can map a new base record table to an existing file on the Campaign server within your partition (that is, the file must be located under your partition root):

- When editing a flowchart, either through the **Admin** menu, or a Select process, as described in “Working with user tables while editing a flowchart” on page 31.
- Through the Campaign Settings page, as described in “Working with user tables from the Campaign Settings page” on page 32.

You map a new base record table to make data accessible to processes in flowcharts.

To map a base record table to a file:

Procedure

1. Begin from the **New Table Definition - Select the table type** window.
2. If necessary, select **Base Record Table**, then click **Next**.
3. Select **Map to Existing File**, then click **Next**.
4. Specify the type of file and mapping settings.

To map a base record table to an existing fixed-width flat file:

About this task

You can map a new base record table to an existing file on the Campaign server within your partition (that is, the file must be located under your partition root):

- When editing a flowchart, either through the **Admin** menu, or a Select process.
- Through the Campaign Settings page.

You map a new base record table to make data accessible to processes in flowcharts.

Procedure

1. Begin from the **New Table Definition - Select the table type** window.
2. If necessary, select **Base Record Table**, then click **Next**.
3. Select **Map to Existing File**, then click **Next**.
4. Keep the default **File Type** selection of **Fixed-Width Flat File**.
The Settings section of the window appears.
5. In the Settings section of the window, click **Browse** to select the **Source File** from within your campaign partition root directory. Campaign automatically populates the **Dictionary File** field with the same path and file name, except with the **.dct** extension. You can override this entry if necessary.

To map a base record table to an existing delimited file:

To make data accessible to flowchart processes, you can map a new base record table to an existing delimited file. You can map the table when you edit a flowchart or use the Campaign Settings page.

About this task

The delimited file must be located on the Campaign server within your partition (that is, the file must be located under your partition root).

Procedure

1. Begin from the **New Table Definition - Select the table type** window.
2. If necessary, select **Base Record Table**, then click **Next**.
3. Select **Map to Existing File**, then click **Next**.
4. For **File Type**, select **Delimited File**.
5. In the **Settings** section, check **First Row of Data Contains Field Names** if you want to automatically use the first row of data to define the fields of the base table. You can override these values later.
6. Select a **Field Delimiter** to indicate which character separates each field in a row of data: **TAB**, **COMMA**, or **SPACE**.
7. Select the **Qualifier** used to indicate how strings are delimited in the file: **None**, **Single Quote**, or **Double Quote**.

This setting is important if you have a space-delimited file with spaces in field entries. For example, if you have a row of data such as: "John Smith" "100 Main Street", set the Field Delimiter to **Space** and set the Qualifier to **Double Quote** so the record is correctly parsed as two fields (name and street address).

Important: Campaign does not support the use of the double quote character ("") in field entries of delimited files. If any of your field entries contain double quotes, change them to another character before mapping a table to the file.

8. Click **Browse** to select the **Source File** from within your partition directory.
9. Define the fields for the new table:

Use the **Add** and **Remove** buttons to specify which **Source Table Fields** to include in the new table. By default, all fields in the file are listed.

Use the **Up 1** and **Down 1** buttons to adjust field order. Click the **Field Name** column in the **New Table Fields** section to automatically sort column names alphabetically in ascending (or descending) order.

You can adjust the field type (Numeric or Text) and width, which are automatically detected based on the **numRowsReadToParseDelimitedFile** configuration setting. For example, if IDs are detected to be 2 characters wide, but you know that IDs can consist of up to 5 characters, increase the value to 5.

Important: If the width value is too small, an error may occur.

10. When finished, click **Next**. The Specify table name and field information screen opens.
11. Accept the defaults, or edit the **IBM Campaign Table Name** field to change the name of the table as it will appear in Campaign. You can also change the **IBM Campaign Field Name** mapped to each source field name by selecting the field name and editing the text in the **IBM Campaign Field Name** text box in the **Edit Selected Field Information** section.
12. When your changes are complete, click **Next**. The Specify the selected table's audience level and assign ID field(s) to it screen opens.
13. Select an **Audience Level** from the list. The **Audience Fields** list is automatically populated. You must select a field in the new base table that is the corresponding key for each listed entry.
14. Click **Next**. The Specify Additional Audience Levels screen opens.
15. Optionally, you can specify one or more additional audience levels contained in the base record table. Adding additional audience levels allows users to use this table as a "switching table" to translate from one audience level to another using the **Audience** process in a flowchart.
 - a. Click **Add**. The Audience Level and ID Fields window opens.
 - b. Select an **Audience Level Name**.
 - c. For each **Audience Field**, match appropriate field(s) from the base table to the corresponding key(s) in the audience level.

- d. If the selected audience level is normalized (that is, each unique audience ID appears at most once in the current base table), check **This audience level is normalized in this table**.
 - e. Click **OK**.
 - f. Repeat steps a through e for each audience level you want to add for the base table, then click **Next**.
16. You can choose to pre-compute the distinct values and frequency counts for specific fields, or allow users to perform real-time profiling of data in the base record table.
17. Click **Finish**. You have created the base record table based on an existing file. The new base table is part of the current table catalog, which you can manage through the table manager.

To map a dimension table

About this task

You can map a new dimension table based on an additional table:

- When editing a flowchart, through the Admin menu, as described in “Working with user tables while editing a flowchart” on page 31.
- Through the Campaign Settings page, as described in “Working with user tables from the Campaign Settings page” on page 32.

You map a new dimension table to make data that augments data in a base table, such as demographics based on postal codes, accessible to processes in flowcharts.

Dimension tables must be mapped to a database table and must be related to one or more base tables that are mapped to tables in the same IBM data source (that is, the same database). In defining the dimension table, you can specify the specific join conditions between the base and dimension tables.

Procedure

1. Begin from the **New Table Definition - Select the table type** window.

Note: You cannot map a dimension table from a Select process.

2. Select **Dimension Table**, then click **Next**.
3. Select the table you want to map from the **Source Table** list.

The source fields in the table you select are mapped automatically to new table fields in the base dimension table you are creating. To change the default selections, select fields from the **Source Table Fields** list or the **New Table Fields** List, and use the **Add**, **Remove**, **Up 1**, and **Down 1** buttons, until the table is mapped as required, then click **Next**.

Note: You can click on the Field Name column in the New Table Fields section to automatically sort column names alphabetically in ascending (or descending) order.

4. (Optional) Change the name Campaign will use for the dimension table and its fields.
 - a. To change the table name, edit the name in the **IBM Campaign Table Name** field.
 - b. To change a field name, select the mapping in the **New Table Fields** list, and edit the text in the **IBM Campaign Field Name** field, then click **Next**.
5. Specify the dimension table's key(s), and how the table will be joined to base record tables.
6. Select one or more keys in the **Key Field(s)** list.
7. Check **Key Field(s) are Normalized in This Table**, if this is the case.
8. Select the **Table Join Method**, then click **Next**.

Note: The option **Always use inner join** will always use an inner join between the base table and this dimension table, returning only audience IDs from the base table that appear in the dimension table. The **Always use outer join** option will always perform an outer join between the base table and this dimension table (which provides the best results if the dimension table is known not to

contain at least one row for every audience ID in the base table). The default setting of auto uses an inner join in the Select and Segment processes and an outer join in output processes (Snapshot, Mail List, and Call List). This typically provides the desired behavior where values in the dimension table are required for selection criteria, but NULLs should be output for missing audience IDs for any dimension table fields that are output.

9. If base record tables exist, the Specify Relationship to Base Tables screen opens. Check the box to the left of any base record table that is related to the dimension table you are creating Specify the join fields, then click **Next**.
10. You can choose to pre-compute the distinct values and frequency counts for specific fields, or allow users to perform real-time profiling of data in the base record table.
11. Click **Finish**. You have created the dimension table.

To map a general table to a database table

About this task

You can map a new general table to an existing database table:

- When editing a flowchart through the **Admin** menu, as described in “Working with user tables while editing a flowchart” on page 31.
- Through the Campaign Settings page, as described in “Working with user tables from the Campaign Settings page” on page 32.

You map a new general table to export Campaign data for use by other applications.

Procedure

1. Begin from the **New Table Definition - Select the table type** window.
2. Select **General Table**, then click **Next**.
3. Select **Map to Existing Table in Selected Database**, select the customer database name, then click **Next**.
4. Select the table you want to map from the **Source Table** list.
The source fields in the table you select are mapped automatically to new table fields in the general table you are creating. To change the automatic mappings, select fields from the **Source Table Fields** list or the **New Table Fields** List, and use the **Add**, **Remove**, **Up 1**, and **Down 1** buttons, until the table is mapped as required, then click **Next**.
5. (Optional) Change the name which Campaign will use for the general table and its fields.
To change the table name, edit the name in the **IBM Campaign Table Name** field.
To change a field name, select the mapping in the **New Table Fields** list, and edit the text in the **IBM Campaign Field Name** field.
6. Click **Finish**
You have created the general table based on a database table.

To map a general table to a file

You map a new general table to export Campaign data for use by other applications.

About this task

You can map a new base record table to a file:

- When editing a flowchart, through the Admin menu, as described in “Working with user tables while editing a flowchart” on page 31.
- Through the Campaign Settings page, as described in “Working with user tables from the Campaign Settings page” on page 32.

Procedure

1. Begin from the **New Table Definition - Select the table type** window.
2. Select **General Table**, then click **Next**.
3. Select **Map to Existing File**, then click **Next**.
4. To map a base record table to a fixed-width flat file:
 - a. Keep the default **File Type** selection.
 - b. Click **Browse** to select the **Source File**. Campaign automatically populates the **Dictionary File** field with the same path and file name, except with the **.dct** extension. You can override this entry if necessary.
5. To map a base record table to a delimited file:
 - a. Select **Delimited File** for the **File Type**.
 - b. Check **First Row of Data Contains Field Names** if this is the case.
 - c. Select a **Field Delimiter** to indicate which character separates each field in a row of data: **TAB**, **COMMA**, or **SPACE**.
 - d. Select the **Qualifier** used to indicate how strings are delimited in the file: **None**, **Single Quote**, or **Double Quote**.
 - e. Click **Browse** to select the **Source File**, then click **Next**. The **Specify the New Table's Fields** window opens.
6. Specify the fields to use in the new table. By default, all fields in the file are listed.
Use the **Add**, **Remove**, **Up 1** and **Down 1** buttons to specify the **Source Table Fields** that are included in the new table and their order.
You can adjust the field type (Numeric or Text) and width, which are automatically detected based on the **numRowsReadToParseDelimitedFile** configuration setting. For example, if IDs are detected to be 2 characters wide, but you know that IDs can consist of up to 5 characters, increase the value to 5.

Important: If the width value is too small, an error may occur.

Note: When you export data to a fixed-width flat file on disk, you can override the preset field lengths by editing the data dictionary for that file.

7. When finished, click **Next**.
The **Specify table name and field information** window opens.
8. Accept the defaults, or edit the **IBM Campaign Table Name** field to change the name of the table as it will appear in Campaign; and change the IBM Campaign field names that are mapped to the source field names.
9. Click **Finish**. You have created the general table based on a file.

Re-mapping user tables

You can remap a user table at any time. You may want to do this to:

- Remove unnecessary fields to simplify working with a table.
- Add new fields that need to be available.
- Rename the table or its fields.
- Add an audience level.
- Or change profiling characteristics.

If you remove a field that has been referenced in a flowchart or change the name of the table or referenced fields, you will cause the flowchart to become unconfigured. You must then manually edit each process box where the table is used to correct references.

Remember that remapping a user table changes only the local table mapping for the current flowchart. To save the updated table mapping to the table catalog, you must save the table catalog. Once saved into the table catalog, any flowchart subsequently using (or importing that table catalog) will see the changes.

You can re-map a user table:

- When editing a flowchart, through the Admin menu, as described in “Working with user tables while editing a flowchart” on page 31.
- Through the Campaign Settings page, as described in “Working with user tables from the Campaign Settings page” on page 32.

To remap a user table:

Procedure

1. Choose **Settings > Campaign Settings > Manage Table Mappings**.
2. In the Table Mappings dialog, click **Show User Tables**.
3. Select the mapped table that you want to remap.
4. Click **Re-Map Table**.
5. Perform the steps involved in mapping a table:
 - “To map a base record table to an existing database table” on page 32
 - “Mapping a base record table to an existing file” on page 34
 - “To map a dimension table” on page 36
 - “To map a general table to a database table” on page 37
 - “To map a general table to a file” on page 37

Profiling values and counts

When mapping a user table, you can choose to pre-compute the distinct values and frequency counts for specific fields, or allow users to perform real-time profiling of data in the base record table. Profiling enables users to see a table's values when editing a flowchart, without having to view raw data and allows them to easily select from valid values when building a query. Pre-computed profiles provide quick and efficient access to the distinct field values and counts without querying the database. Real-time profiling provides access to the most up-to-date data and may be helpful if your database updates frequently. If you pre-compute profiles, you can control how often profiles are regenerated.

Note: You can choose to both pre-compute profiles and allow users to dynamically profile in real-time, or you can choose to disable real-time profiling and force users to always use the pre-computed profiles. Enabling or disabling the Allow real-time profiling option applies to all table fields, not just the checked ones. If you disable real-time profiling and do not specify an alternate means for pre-generated profiles, users will not be able to view any values or counts for any fields in this table. If you disable real-time profiling and provide pre-computed profiles for one or more fields, users will be able to access the pre-computed profiles, which is for the entire table. Users will not be able to profile only the values for the input cell of a process. To provide the greatest flexibility, you should allow real-time profiling.

To configure profiling:

Procedure

1. Check the fields for which you want Campaign to pre-compute distinct values and frequency counts. By default, Campaign stores the pre-computed profiles in the **Campaign > partitions > partition[n] > profile** category as **data source_table name_field** name.
2. If you have distinct values and counts stored in a separate database table that Campaign should use, click **Configure Data Sources**. Select **Data pre-defined in a table**, select the table name, the field containing the values, and the field containing the counts. Then click **OK**.

3. Check **Allow real-time profiling** to have Campaign update its records of values for the selected fields in real-time. This option allows users editing a flowchart to see the current values for these fields. However, it also requires a database query each time a user clicks **Profile**, which can potentially degrade performance.

To unmap a user table

About this task

You can unmap a user table at any time (unmapping a table does not delete the original underlying data or affect any other flowchart).

Important: Unmapping a user table causes any process in the current flowchart referencing that user table to become unconfigured.

You can unmap a user table:

- When editing a flowchart, through the Admin menu, as described in “Working with user tables while editing a flowchart” on page 31.
- Through the Campaign Settings page, as described in “Working with user tables from the Campaign Settings page” on page 32.

Procedure

1. Begin from the **New Table Definition - Select the table type** window.
2. Select the table to unmap.
3. Click **Unmap Table**. You are prompted to confirm.
4. Click **OK** to unmap the table.

Important: You cannot reverse this process. To restore an unmapped table, you must map it as if for the first time, or import a stored table catalog that contains the mapped table definition. If you are uncertain about permanently unmapping a table, you can always save your current table mappings into a table catalog for later restoration if needed.

To create a new user table through an output process

About this task

From the output processes (Snapshot, Call List, and Mail List) in the **Export** drop-down list, you can create new user tables.

Procedure

1. While editing a flowchart, open the output process from which you want to create the new user table.
2. In the **Export to** drop-down list, select **New Mapped Table**. The New Table Definition window opens.
3. Select **Base Record Table**, **Dimension Table**, or **General Table**. Typically in this process, you would export the data to a new base table in an existing flat file or database. If you need to read the exported data back into Campaign, you must export it as a base table.
4. Click **Next**.
5. Select Create New File or Create New Table in Selected Database.
6. If you select to create a new database table:
 - a. Select the database in which to create the table.
 - b. Click **Next**.
 - c. Select the **Source Table Fields** to export to the new table or file. You can select from Campaign Generated Fields, the audience-level identifier, and fields from the input cell. Use the **Add**, **Remove**, **Up**, and **Down** buttons to define fields in the **New Table Fields** list.
 - d. Click **Next**.

- e. Specify a **Database Table Name** and **IBM Campaign Table Name** for the new table.
 - f. Optionally, select the new table fields and modify the **IBM Campaign Field Name**.
 - g. Click **Next**.
 - h. Select the **Audience Level** for the new table and specify the audience level field in the new table.
 - i. Click **Next**.
 - j. Optionally, select additional audience levels for the new table by clicking **Add**.
 - k. Click **Next**.
 - l. Define profiling for the new table. For more information, see “Profiling values and counts” on page 39.
 - m. Click **Finish**.
7. If you select to create a new file:
- a. Click **Next**.
 - b. Select **Fixed-Width Flat File** or **Delimited File**, then specify the **Settings** fields appropriately.
 - c. Click **Next**.
 - d. Select the **Source Table Fields** to export to the new table or file. You can select from Campaign Generated Fields, the audience-level identifier, and fields from the input cell. Use the **Add**, **Remove**, **Up**, and **Down** buttons to define fields in the **New Table Fields** list.
 - e. Click **Next**.
 - f. Select the **Audience Level** for the new table and specify the audience level field in the new table.
 - g. Click **Next**.
 - h. Optionally, select additional audience levels for the new table by clicking **Add**.
 - i. Click **Next**.
 - j. Define profiling for the new table. For more information, see “Profiling values and counts” on page 39.
 - k. Click **Finish**.

Data dictionary administrative tasks

A data dictionary defines the format of data in a fixed-width ASCII flat file. You can edit the data dictionary for a base or general table, or create a new data dictionary from an existing fixed-width flat file.

Note: The data dictionary must be stored on the Campaign server or be accessible from the server to be used for table mapping.

To open a data dictionary

About this task

Find the data dictionary you want, then open it using Notepad or any other text editor.

Results

The file you see will look similar to the following example:

```
CellID, ASCII string, 32, 0, Unknown,
MBRSHP, ASCII string, 12, 0, Unknown,
MP, ASCII Numeric, 16, 0, Unknown,
GST_PROF, ASCII Numeric, 16, 0, Unknown,
ID, ASCII Numeric, 10, 0, Descriptive/Names,
Response, ASCII Numeric, 10, 0, Flag,
```

```
AcctAge, ASCII Numeric, 10, 0, Quantity,  
acct_id, ASCII string, 15, 0, Unknown,  
src_extract_dt, ASCII string, 50, 0, Unknown,  
extract_typ_cd, ASCII string, 3, 0, Unknown,
```

You can change information as needed in the file, making sure that the data that will be stored in the associated table can use the parameters you are setting.

To apply changes to a data dictionary

About this task

You must save, close, and reopen the flowchart.

When to use a data dictionary

You use data dictionaries in Snapshot processes to ensure that any fixed-width output files you create adhere to a specific structure.

Data dictionary syntax

Each line in a data dictionary defines a field in fixed-width flat file, using the following syntax:

```
<Variable_name>, <"ASCII string" or "ASCII Numeric">, <Length_in_bytes>, <Decimal_point >,  
<Format>, <Comment>
```

Note: The <Decimal_point > value specifies the number of digits following the decimal point and is valid for ASCII Numeric fields only. For ASCII string fields, the value should always be 0.

For example, the line:

```
acct_id, ASCII string, 15, 0, Unknown,
```

means that a record in the file has a field called acct_id, which is a 15-byte string with no decimal point (as the field is a string) with an unknown format and empty comment string.

Note: The format and comment fields are not used by Campaign. Therefore, for the best results, use "Unknown" for the format value and to leave the Comment field blank.

To manually create a new data dictionary

About this task

This section describes how to create a new data dictionary manually. It may be easier to create a new data dictionary by starting with an existing data dictionary created by Campaign.

Procedure

1. Create an empty .dat file (length = 0) and a corresponding .dct file.
2. In the .dct file, define fields in the format:

```
<Variable_name>, <"ASCII string" or "ASCII Numeric">, <Length_in_bytes>, <Decimal_point >, <Format>,  
<Comment>
```

Use Unknown for the format and leave the comment field blank, as in the following:

```
acct_id, ASCII string, 15, 0, Unknown,  
hsehld_id, ASCII Numeric, 16, 0, Unknown,  
occptn_cd, ASCII string, 2, 0, Unknown,  
dob, ASCII string, 10, 0, Unknown,
```

- ```
natural_lang, ASCII string, 2, 0, Unknown,
commun_lang, ASCII string, 2, 0, Unknown,
```
3. You can now map a new table to a file using this data dictionary.

---

## Table catalog administrative tasks

A table catalog is a collection of mapped user tables. Administrators can create and load table catalogs and perform other management operations to make table catalogs available to Campaign users.

- “Creating table catalogs”
- “Loading stored table catalogs” on page 44
- “Deleting table catalogs” on page 44
- “Updating pre-computed profiles for tables in a table catalog” on page 45
- “Defining data folders for table catalogs” on page 46

## Creating table catalogs

You create a table catalog by saving the user tables that are in the current flowchart's internal table catalog. Saving table catalogs with commonly defined table mappings makes it easy to share or restore table mappings.

### About this task

**Note:** You can also access table catalogs from the **Options** menu while editing a flowchart.

Follow the steps below to create a table catalog.

### Procedure

1. Select **Settings > Campaign Settings**.
2. Click **Manage Table Mappings**.
3. In the Table Mappings dialog, select **Show User Tables**. The user tables that you want to save as a table catalog must be mapped in Campaign.
4. Select the user tables that you want to save as a catalog, and click **Save**.
5. In the Save Tables dialog, specify whether to save all table mappings to the table catalog or save only the selected table mappings to the table catalog, then click **OK**.

The Save Table Mappings to Catalog File dialog opens.

6. Enter a name for the table catalog. If you use .XML as the extension, the table catalog will be stored in XML format rather than as a binary .cat file.

Saving a table catalog as XML makes it possible to view and interpret the values. XML format is especially useful for editing purposes. A common use of the XML format is to globally search and replace all references to a production data source name with a test data source name. This makes it easy to make table catalogs portable between data sources.

**Note:** The name must be unique within the folder; otherwise you will be prompted to overwrite the existing table catalog with the same name. The name cannot contain any periods, apostrophes, or single quotation marks, must begin with a letter and can only contain the letters A-Z, the numbers 0-9, and the underscore character (\_).

7. (Optional) Describe the table catalog in the **Note** field.
8. Decide whether to store authentication information with the catalog:
  - If you leave **Save with Database Authentication Information** unchecked, users of the table catalog will need to provide a database login and password for any data sources referenced in the

table catalog. These passwords may be already stored in their ASM user profile. If a user does not already have a stored valid login and password, the user is prompted to provide them. This setting is the best practice for security purposes.

- If you check **Save with Database Authentication Information**, the authentication information that you are currently using to access the data sources is saved with the table catalog. Anyone with access permissions to this table catalog will automatically be connected to the data sources using the authentication stored in the table catalog. Therefore, users of this catalog will not need to provide a login or password to access the data sources and will have all of the privileges of the stored login for reading and writing to the data source. You may want to avoid this setting for security reasons.
9. Use the **Save Under** option to specify where to save the catalog.  
If you do not select a specific folder, or choose **None**, the catalog is saved at the top level. If you prefer to organize table catalogs in folders, select a folder from the **Items List**, or create a folder using the **New Folder** button.
  10. Click **Save**.  
The table catalog is saved as a binary .cat file if no extension was provided, or as an XML file if you included .xml in the file name.

## Loading stored table catalogs

If you saved mapped user tables to a table catalog, the catalog can be loaded for use in flowcharts.

### About this task

**Note:** If you defined the default.cat table catalog, it is loaded by default each time that you create a new flowchart. However, if you set your browser to accept cookies and you load a different table catalog, that catalog is then loaded by default instead of default.cat. This is also true for stored dimension hierarchies.

Follow the steps below to load a stored table catalog.

### Procedure

1. Select **Settings > Campaign Settings**.
2. Click **Manage Table Mappings**.
3. In the Table Mappings window, select **Show User Tables**.
4. Click **Load**.
5. Choose one of the following options:
  - **Load table mappings from stored table catalog (existing mappings are cleared)**: Completely replace the current mappings (the mapped tables in the flowchart) with the mappings in the catalog that is being loaded. This is the default option.
  - **Merge table mappings from stored table catalog (old mappings are overwritten)**: Keep any existing mappings and add any new mappings. Existing table mappings that are not in the new table catalog will be preserved.
6. Click **OK**.  
The **Stored Table Catalogs** dialog opens.
7. Select the name of the table catalog that you want to load.
8. Click **Load Catalog**.

## Deleting table catalogs

You can permanently remove a table catalog so that it is no longer available to any flowcharts in any campaigns.

## About this task

Removing a table catalog deletes the .cat file, which points to database tables and possibly flat files. Removing a table catalog does not affect the underlying tables in the database. However, it does permanently remove the catalog file.

**Important:** Only use the Campaign interface to remove table catalogs or perform table operations. If you remove tables or change table catalogs directly in the file system, Campaign cannot guarantee data integrity.

### Procedure

1. Open a flowchart in **Edit** mode.
2. Click the **Options** icon  and select **Stored Table Catalogs**.  
The Stored Table Catalogs window opens.
3. Select a table catalog in the **Items List**.  
The **Info** area shows the detailed information for the selected table catalog, including the table catalog name and file path.
4. Click **Remove**.  
You see a confirmation message asking you to confirm removal of the selected table catalog.
5. Click **OK**.
6. Click **Close**.

### Results

The catalog is removed from the **Items List** and is no longer available to any flowcharts in any campaigns.

## Updating pre-computed profiles for tables in a table catalog

If the underlying marketing data has changed, and you are using Campaign to pre-compute profile information for table fields, you must update the table catalog by recomputing the record counts and any pre-computed values that you specified in your tables.

### Procedure

1. Select **Settings > Campaign Settings**.
2. Click **Manage Table Mappings**.
3. In the Table Mappings dialog, select **Show User Tables**.
4. To update record counts and values for a subset of user tables, select these tables in the list of tables.  
You can use Ctrl+click to select multiple tables.  
To update record counts and values for all user tables, you do not need to select any tables.
5. Click **Compute**.

The Recompute dialog opens.

If you did not select any user tables, **Recompute Record Counts and List of Distinct Values for All Tables** is selected by default.

If you selected a subset of tables, **Recompute Record Counts and List of Distinct Values for Selected Tables** is selected.

**Note:** If you did not select any tables and you want to enable the option to recompute values for selected tables, click **Cancel** in the Recompute dialog. The dialog closes and you return to the Table Mappings dialog. Now you can select the tables for which you want the record counts and values to be computed.

- When you are satisfied with your selection, click **OK**.

When the computations are complete, you return to the **Table Mappings** dialog.

## Defining data folders for table catalogs

When you create a table catalog, you can specify one or more data folders to associate with that table catalog. In output processes such as Snapshot, these named folders appear in the file location selection dialog as pre-defined folder locations.

### Procedure

- In a flowchart in Edit mode, click the **Admin** icon  and select **Tables**.
- In the Table Mappings dialog, select the mapped user tables that you want to save to a catalog.
- Click **Save**.
- In the Save Table Mappings to Catalog File dialog, click in the **IBM Campaign Data Folders** section to add an item.
- Enter a name and folder location for the data folder that you are adding, relative to the current partition's home directory. For example, if you are working in partition1, the folder location that you specify is relative to the partitions/partition1 folder.
- Click **Save**.

### Results

When you reload the catalog in a flowchart that contains output processes such as Snapshot, the folders appear as options in the file location selection dialog.

For example, say that you add a Data Folder named **MyFolder** in the Folder Location **temp**. When you configure a Snapshot process, **File in MyFolder** appears in the **Export to** list. When you select **File in MyFolder**, the **File Name** field in the Specify Output File dialog is automatically populated with the relative path **temp/**.

---

## Chapter 4. Customizing campaigns

Administrators can customize campaigns by using custom campaign attributes, initiatives, and products.

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### Custom campaign attributes

**Note:** If your Campaign installation is integrated with Marketing Operations, you must use Marketing Operations to create custom campaign attributes. For details, see the Marketing Operations documentation.

You can customize campaigns by adding custom campaign attributes to store metadata about each campaign.

Custom attributes can help you further define and categorize your campaigns. For example, you might define a custom campaign attribute Department to store the name of the department in your organization that is sponsoring the campaign. The custom attributes you define appear on the **Summary** tab for each campaign.

Custom campaign attributes apply to all campaigns in your system. If you add a custom campaign attribute when there are existing campaigns, the value of the attribute is NULL for these campaigns. You can later edit these campaigns to supply a value for the custom attribute.

**Note:** Names of custom attributes must be unique across campaign, offer, and cell custom attributes.

---

### Custom cell attributes

You can create customized cell attributes. For example, you can define a custom cell attribute of Marketing Approach to store values such as Cross-sell, Up-sell, Defection, or Loyalty. Custom cell attributes are included in the target cell spreadsheet (TCS) for every campaign, even campaigns that have already been created.

Custom cell attributes are the same across all campaigns. Users enter values for custom cell attributes in the target cell spreadsheet of a campaign. For example, if you created the custom cell attribute Marketing Approach, users would see a Marketing Approach field when editing a row in the target cell spreadsheet.

Output processes in flowcharts can also generate output values for custom cell attributes as Campaign Generated Fields (UCGFs). Users can then view reports based on the values of the cell attributes, if the reports are customized to support this. For more information, see the *Campaign User's Guide*.

**Note:** If Campaign is integrated with Marketing Operations, you must use Marketing Operations to create custom cell attributes. For details, see the Marketing Operations documentation.

---

### Custom offer attributes

Campaign is delivered with a standard set of offer attributes for use in offer templates. You can create custom offer attributes to store additional offer metadata for definition, output, or analysis.

For example, you might define a custom offer attribute Interest Rate to store the value of the interest rate being marketed with mortgage offers.

When defining offer templates, you can choose which standard and custom offer attributes will be visible for a particular type of offer. Users then provide values for those attributes when creating and/or using offers.

You can use a custom attribute in an offer template in one of three ways:

- As a static attribute
- As a hidden static attribute
- As a parameterized attribute

## **What is a static attribute?**

A static attribute is an offer field whose value is set once and does not change when the offer is used.

When you create an offer template, you supply values for all static attributes. When a user creates an offer based on that template, the values you entered are used by default; the user can override these default values as needed. However, users cannot override values for static attributes when using the offer in a flowchart process.

There are static attributes that are automatically included in all offer templates.

## **What is a hidden static attribute?**

A hidden static attribute is an offer field that is not displayed to users when they create offers based on this template. For example, a hidden static attribute could be the cost to your organization of administering an offer.

Users creating offers cannot edit (or see) the value of hidden static attributes. However, you can track and generate reports on the values of hidden static attributes in the same way as you could other offer attributes.

When you are creating an offer template, the value you enter for a hidden static attribute applies to all offers based on the template.

## **What is a parameterized attribute?**

A parameterized attribute is a field that users can change for every instance in which the offer is associated with a cell in a flowchart.

When you create an offer template, you supply a default value for the parameterized attribute. Then, when users create offers based on this template, they can accept or change the default value you entered. Finally, when the offer containing the parameterized attribute is associated with a cell in a flowchart, the user can accept or change the default value entered for the offer.

---

## **Creating or editing custom attributes**

You can define custom attributes for use on campaigns, offers, or cells on a Target Cell Spreadsheet. When you create the attribute, you specify whether it can be used in campaigns, offers, or cells. You cannot change this selection after you save the attribute.

### **Before you begin**

You must have permissions to add or modify campaign, offer, and cell attributes.

### **Procedure**

1. Select **Settings > Campaign Settings**.
2. In the **Templates and Customization** section, click **Custom Attribute Definitions**.



3. Click the **Add a Custom Attribute** icon or click the name of the attribute that you want to modify.
4. Define the attribute.

| For this option:              | Take this action:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Attribute Display Name</b> | <p>Specify the label to identify the attribute for users. For example, "Interest Rate".</p> <p><b>Note:</b> You cannot change the name of the standard offer attributes that are supplied with Campaign.</p>                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Internal Name</b>          | <p>Specify a name to identify this attribute when you write an IBM EMM expression, such as a query or custom macro. Use the same name as the <b>Attribute Display Name</b>, but without any spaces (for example, "InterestRate").</p> <p>The internal name must be globally unique, must start with an alphabetic character, cannot include spaces, and are not case-sensitive.</p> <p>To avoid errors, do not change the internal name of attributes that are used in flowcharts.</p>                                                                                                                          |
| <b>Attribute Of</b>           | <p>Indicate where the attribute can be used. You cannot change this option after you save the attribute.</p> <ul style="list-style-type: none"> <li>• A <b>Campaign</b> attribute is included on every campaign, even campaigns that already exist.</li> <li>• An <b>Offer</b> attribute is available for use on new offer templates. If the attribute is included on an offer template, then any offers that are based on that template include the attribute.</li> <li>• A <b>Cell</b> attribute is included in the Target Cell Spreadsheet for every campaign, even campaigns that already exist.</li> </ul> |
| <b>Description</b>            | Optional.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| For this option:         | Take this action:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mandatory</b>         | <p>If you want to require a value for this attribute, select <b>Mandatory</b>. This setting has the following result.</p> <ul style="list-style-type: none"> <li>For campaigns, users are required to specify a value for the attribute (the field cannot be left blank).</li> <li>For cells, users are required to specify a value in the Target Cell Spreadsheet (the cell cannot be left blank).</li> <li>For offers, administrators are required to specify a value when the attribute is added to an offer template. The specified value is used for any offers that are based on that template, unless the user specifies a different value when creating or editing the offer.</li> </ul> <p><b>Note:</b> If you add an offer attribute to an offer template as "Hidden static" or "Parameterized", a value is always required, even if the attribute is defined as non-mandatory. If you add an offer attribute to an offer template as "Static", the <b>Mandatory</b> setting determines whether a value is required.</p> <p>If you change this option after an attribute is in use:</p> <ul style="list-style-type: none"> <li>If you change from Mandatory to non-mandatory, a value is no longer required when the attribute is used.</li> <li>If you change from non-mandatory to Mandatory, a value is required whenever this attribute is used in the future. This change has no effect on existing objects unless you edit them. For example, if you open a campaign, Target Cell Spreadsheet, or offer in Edit mode, you are required to specify a value before saving.</li> </ul> |
| <b>Form Element Type</b> | <p>Specify the type of data to be stored in the attribute field for offers or cells.</p> <p><b>Important:</b> After you add the custom attribute, you cannot change its data type.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

5. Specify more information, depending on the Form Element Type that you selected.

| If you selected this Form Element Type: | Take this action:                                                                                                                                                                                                                                                                                          |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Text Field - Numeric</b>             | <p>Specify the number of decimal places to display to the right of the decimal point.</p> <p><b>Note:</b> If you decrease the value for an existing attribute, the display is truncated in the user interface. However, the original value is retained in the database.</p>                                |
| <b>Text Field - Currency</b>            | <p>Specify the number of decimal places (see above).</p> <p><b>Important:</b> The currency value reflects the number of decimal places that are customarily used in the local currency. If you specify a number of decimal places less than the number commonly used, the currency value is truncated.</p> |

| If you selected this Form Element Type: | Take this action:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Text Field - String                     | <p>Specify a <b>Maximum String Length</b> to indicate the maximum number of bytes to store for any value of this attribute. For example, if you enter 32, single-byte languages such as English store 32 characters but double-byte languages store only 16 characters.</p> <p><b>Important:</b> Decreasing the length of an existing attribute truncates existing values, which, if the field is used for matching purposes, can adversely affect response tracking.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Select Box - String                     | <ul style="list-style-type: none"> <li>Specify a <b>Maximum String Length</b> (see above).</li> <li>Optionally, check <b>Allow addition of list items from within edit forms</b> to allow any user to add new unique values to the list of available values when creating or editing a campaign, offer template, or offer that includes this attribute. (This option does not apply to cells.) For example, if a Select Box on an offer template contains the values <i>Small</i>, <i>Medium</i>, <i>Large</i>, a user could add the value <i>Extra Large</i> when creating an offer or editing the offer template.</li> </ul> <p><b>Important:</b> After the campaign, offer template, or offer is saved, the user cannot remove the new list item. The value is saved in the custom attribute definition and is then available to all users. Only administrators can remove items from lists, by modifying the custom attribute.</p> <ul style="list-style-type: none"> <li>Populate the <b>Source list of available values</b> to specify which items are available in the Select Box. Enter values in the <b>New or Selected Item</b> field and click <b>Accept</b>. To delete a value, select it in the Source list of available values and click <b>Remove</b>.</li> <li>Optionally, specify a <b>Default Value</b> for the Select Box. The default value is used on the campaign, offer, or TCS, unless the user specifies a different value when creating or editing the campaign, offer, or cell.</li> <li>Specify the <b>Sort Order</b> to determine how values appear in the list.</li> </ul> |

6. Click **Save Changes**.

## Custom initiatives

Campaign is delivered with a built-in attribute called **Initiative**. The **Initiative** attribute is a drop-down list on the campaign **Summary** tab. Initially, there are no values in the drop-down list; as an administrator, you define the initiatives to select from.

### To add an initiative

#### About this task

You can add initiatives that users can select from the **Initiative** drop-down list in the campaign **Summary** tab. You add initiatives directly in the database table **UA\_Initiatives**.

#### Procedure

1. Access the Campaign system table database using your database management system.

2. In the database table `UA_Initiatives`, add values in the `InitiativeName` column. Each value can be a maximum of 255 characters.
3. Save the changes to the `UA_Initiatives` table.

---

## Custom products

Users can associate an offer with one or more products. Product IDs are stored in the `UA_Product` table in the Campaign system table database. Initially, there are no records in this table. As an administrator, you can populate this table.

### To add a product

You can add products that users can associate with offers. You add products directly in the database table `UA_Products`.

#### Procedure

1. Access the Campaign system table database using your database management system.
2. Locate the `UA_Product` table.  
The table is delivered with two columns:
  - `ProductID` (`bigint`, length 8)
  - `UserDefinedFields` (`int`, length 4)
3. Optionally, modify the table to include additional columns. You may also delete the `UserDefinedFields` column.
4. Populate the table as necessary to include products that can be associated with offers.
5. Save the changes to the `UA_Product` table.

---

## Chapter 5. Offer template administration

Before administrators perform offer template management tasks, there are several important concepts to understand.

- “What is an offer?”
- “What is an offer template?”
- “Offer templates and security” on page 54
- “Planning offer templates and offers” on page 54
- “Custom offer attributes” on page 47
- “Setting up Marketing Operations assets for use in Campaign offers” on page 139

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### What is an offer?

An offer is the specific marketing communication that you send to particular groups of people, using one or more channels. An offer can be simple or complex, and typically contains a creative piece, a cost, a channel, and an expiration date.

For example, a simple offer from an online retailer could consist of free shipping on all online purchases made in the month of April. A more complex offer could consist of a credit card from a financial institution, with a personalized combination of artwork, introductory rate, and expiration date that varied based on the recipient's credit rating and region.

In Campaign, offers are:

- Based on the offer templates that you administer.
- Used in campaigns, where they are associated with target cells.

Associated offers are then delivered to customers identified in these target cells.

You can also group offers into lists, and assign offer lists to target cells.

**Note:** Offer names and offer list names have specific character restrictions. For details, see Chapter 19, “Special characters in IBM Campaign object names,” on page 317.

---

### What is an offer template?

An offer template defines the structure of an offer. Users create offers by basing them on offer templates.

**Important:** Offer templates are required. Users cannot create an offer without basing it on a template.

You can create as many offer templates as appropriate to manage the different types of offers within your business. When defining an offer template, you specify the relevant offer attributes and how they will be used.

Offer templates provide the following benefits:

- By creating offer templates, you simplify offer creation for users because only the relevant offer attributes for a particular type of offer are shown.
- By providing default values for offer attributes, you speed up the offer creation process.
- By specifying which offer attributes are parameterized in an offer template, you control when new offers are created and when an offer version can be used instead.

- By using custom attributes to capture specific data (for example, the discount percentage or bonus points associated with the offer), you enable better reporting and analysis of campaigns.

---

## Offer templates and security

The security policy you set for an offer template determines which users will be able to use the offer template.

The security policy of the offer template is independent of the security policy applied to the offers created by using this offer template; that is, the security policy is not propagated to offers based on the template.

When users create new offers, the security policy of the offer is based on the folder in which it resides. If the folder is created in the top-level offers folder, the user can select other valid security policies for that offer.

To work with offer templates, which includes tasks such as adding, editing, or retiring offer templates, you must have the appropriate permissions, which includes the view permission for offer templates. For example, to add offer templates, you must be granted both the **Add offer templates** and **View offer templates** permissions.

For more information about Campaign security, see the *Marketing Platform Administrator's Guide*.

---

## Planning offer templates and offers

Planning offers includes considering which template to use, which attributes are parameterized, whether you will use holdout control groups for cells assigned this offer, and other considerations.

Offers can vary in the following ways:

- Different parameterized offer fields, including valid and expiry dates;
- Different offer codes (number of codes, length, format, custom code generator);
- Custom attributes (which are exposed for a specific type of offer; for example, credit card offers have initial APR% and go-to rates; mortgage offers have payment frequency and term).

As a best practice, keep parameterized values in offers to a minimum. Most offer attributes should not be parameterized. You should create parameters only for those attributes that will not change the "essence" of an offer, such as effective and expiration dates.

Carefully consider the design of your offers and offer templates, as this can significantly affect how you can analyze and report on campaign details.

For information on working with offers, see the *Campaign User's Guide*.

---

## Using custom attributes in offer templates

You can create offer attributes and use them on offer templates and offers.

After you create a custom offer attribute, it can be added to any new offer template. Any offers that are created from that template will include the custom attribute.

- "Standard offer attributes in Campaign" on page 55
- "Creating or editing custom attributes" on page 48
- "Using drop-down lists in offer templates" on page 60

## Standard offer attributes in Campaign

The following table lists the offer attributes that are delivered with Campaign.

Table 24. Standard offer attributes

| Attribute Display Name   | Attribute Internal Name | Form Element Type     |
|--------------------------|-------------------------|-----------------------|
| Average Response Revenue | AverageResponseRevenue  | Text Field - Currency |
| Channel                  | Channel                 | Select Box - String   |
| Channel Type             | ChannelType             | Select Box - String   |
| Cost Per Offer           | CostPerOffer            | Text Field - Currency |
| Creative URL             | CreativeURL             | Text Field - String   |
| Effective Date           | EffectiveDate           | Text Field - Date     |
| Expiration Date          | ExpirationDate          | Text Field - Date     |
| Duration                 | ExpirationDuration      | Text Field - Numeric  |
| Fulfillment Cost         | FulfillmentCost         | Text Field - Currency |
| Interaction Point ID     | UACInteractionPointID   | Text Field - Numeric  |
| Interaction Point        | UACInteractionPointName | Text Field - String   |
| Offer Fixed Cost         | OfferFixedCost          | Text Field - Currency |

## Creating or editing custom attributes

You can define custom attributes for use on campaigns, offers, or cells on a Target Cell Spreadsheet. When you create the attribute, you specify whether it can be used in campaigns, offers, or cells. You cannot change this selection after you save the attribute.

### Before you begin

You must have permissions to add or modify campaign, offer, and cell attributes.

### Procedure

1. Select **Settings > Campaign Settings**.
2. In the **Templates and Customization** section, click **Custom Attribute Definitions**.

3. Click the **Add a Custom Attribute** icon  or click the name of the attribute that you want to modify.
4. Define the attribute.

| For this option:       | Take this action:                                                                                                                                                                                            |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Attribute Display Name | <p>Specify the label to identify the attribute for users. For example, "Interest Rate".</p> <p><b>Note:</b> You cannot change the name of the standard offer attributes that are supplied with Campaign.</p> |

| For this option:     | Take this action:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Internal Name</b> | <p>Specify a name to identify this attribute when you write an IBM EMM expression, such as a query or custom macro. Use the same name as the <b>Attribute Display Name</b>, but without any spaces (for example, "InterestRate").</p> <p>The internal name must be globally unique, must start with an alphabetic character, cannot include spaces, and are not case-sensitive.</p> <p>To avoid errors, do not change the internal name of attributes that are used in flowcharts.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Attribute Of</b>  | <p>Indicate where the attribute can be used. You cannot change this option after you save the attribute.</p> <ul style="list-style-type: none"> <li>• A <b>Campaign</b> attribute is included on every campaign, even campaigns that already exist.</li> <li>• An <b>Offer</b> attribute is available for use on new offer templates. If the attribute is included on an offer template, then any offers that are based on that template include the attribute.</li> <li>• A <b>Cell</b> attribute is included in the Target Cell Spreadsheet for every campaign, even campaigns that already exist.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Description</b>   | Optional.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Mandatory</b>     | <p>If you want to require a value for this attribute, select <b>Mandatory</b>. This setting has the following result.</p> <ul style="list-style-type: none"> <li>• For campaigns, users are required to specify a value for the attribute (the field cannot be left blank).</li> <li>• For cells, users are required to specify a value in the Target Cell Spreadsheet (the cell cannot be left blank).</li> <li>• For offers, administrators are required to specify a value when the attribute is added to an offer template. The specified value is used for any offers that are based on that template, unless the user specifies a different value when creating or editing the offer.</li> </ul> <p><b>Note:</b> If you add an offer attribute to an offer template as "Hidden static" or "Parameterized", a value is always required, even if the attribute is defined as non-mandatory. If you add an offer attribute to an offer template as "Static", the <b>Mandatory</b> setting determines whether a value is required.</p> <p>If you change this option after an attribute is in use:</p> <ul style="list-style-type: none"> <li>• If you change from Mandatory to non-mandatory, a value is no longer required when the attribute is used.</li> <li>• If you change from non-mandatory to Mandatory, a value is required whenever this attribute is used in the future. This change has no effect on existing objects unless you edit them. For example, if you open a campaign, Target Cell Spreadsheet, or offer in Edit mode, you are required to specify a value before saving.</li> </ul> |

| <b>For this option:</b>  | <b>Take this action:</b>                                                                                                                                                               |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Form Element Type</b> | <p>Specify the type of data to be stored in the attribute field for offers or cells.</p> <p><b>Important:</b> After you add the custom attribute, you cannot change its data type.</p> |

5. Specify more information, depending on the Form Element Type that you selected.

| <b>If you selected this Form Element Type:</b> | <b>Take this action:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Text Field - Numeric</b>                    | <p>Specify the number of decimal places to display to the right of the decimal point.</p> <p><b>Note:</b> If you decrease the value for an existing attribute, the display is truncated in the user interface. However, the original value is retained in the database.</p>                                                                                                                                                                                               |
| <b>Text Field - Currency</b>                   | <p>Specify the number of decimal places (see above).</p> <p><b>Important:</b> The currency value reflects the number of decimal places that are customarily used in the local currency. If you specify a number of decimal places less than the number commonly used, the currency value is truncated.</p>                                                                                                                                                                |
| <b>Text Field - String</b>                     | <p>Specify a <b>Maximum String Length</b> to indicate the maximum number of bytes to store for any value of this attribute. For example, if you enter 32, single-byte languages such as English store 32 characters but double-byte languages store only 16 characters.</p> <p><b>Important:</b> Decreasing the length of an existing attribute truncates existing values, which, if the field is used for matching purposes, can adversely affect response tracking.</p> |

| If you selected this Form Element Type: | Take this action:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Select Box - String                     | <ul style="list-style-type: none"> <li>Specify a <b>Maximum String Length</b> (see above).</li> <li>Optionally, check <b>Allow addition of list items from within edit forms</b> to allow any user to add new unique values to the list of available values when creating or editing a campaign, offer template, or offer that includes this attribute. (This option does not apply to cells.) For example, if a Select Box on an offer template contains the values <i>Small</i>, <i>Medium</i>, <i>Large</i>, a user could add the value <i>Extra Large</i> when creating an offer or editing the offer template.</li> </ul> <p><b>Important:</b> After the campaign, offer template, or offer is saved, the user cannot remove the new list item. The value is saved in the custom attribute definition and is then available to all users. Only administrators can remove items from lists, by modifying the custom attribute.</p> <ul style="list-style-type: none"> <li>Populate the <b>Source list of available values</b> to specify which items are available in the Select Box. Enter values in the <b>New or Selected Item</b> field and click <b>Accept</b>. To delete a value, select it in the Source list of available values and click <b>Remove</b>.</li> <li>Optionally, specify a <b>Default Value</b> for the Select Box. The default value is used on the campaign, offer, or TCS, unless the user specifies a different value when creating or editing the campaign, offer, or cell.</li> <li>Specify the <b>Sort Order</b> to determine how values appear in the list.</li> </ul> |

## 6. Click **Save Changes**.

---

## Working with offer templates

Every offer is based on an offer template. Therefore, administrators must create offer templates before users can create offers.

You can make limited modifications to a template that has offers based on it (you can change the basic options and default values of attributes). To make other changes, you should retire the original offer template and replace it by creating a new one with the desired changes.

Before you start working with offer templates, you should create any custom offer attributes you might need. For example, you could create a drop-down list consisting of several choices, which users will be able to select from when creating offers.

**Note:** Working with offer templates requires the appropriate permissions. For example, to add offer templates, you must have both the **Add offer templates** and **View offer templates** permissions. For more information, see Chapter 2, “Security in IBM Campaign,” on page 5.

## Creating offer templates

Campaign administrators must create offer templates before users can create offers. Follow these instructions to create offer templates.

### Procedure

1. Select **Settings > Campaign Settings**.

The Campaign Settings page opens, presenting links for various administration tasks.

2. In the **Templates and Customizations** section, click **Offer Template Definitions**.  
The Offer Template Definitions window opens.
3. At the bottom of the list of offer templates, click **Add....**  
The New Offer Template Step 1 of 3: Metadata window opens.
4. Enter offer template metadata as follows:
  - a. Enter data for the basic options: **Template Name**, **Security Policy**, **Description**, **Suggested Uses**, and **Template Icon**.
  - b. To use this offer template with Interact, select **Allow offers created from this template to be used in real-time interactions**. (This option is not available if **IBM Marketing Operations - Offer integration** is enabled in the configuration properties.)
  - c. Accept the defaults, or modify data for the offer and treatment code formats and generators: **Offer Code Format**, **Offer Code Generator**, **Treatment Code Format**, and **Treatment Code Generator**.

**Important:** You cannot use the space character in an offer code format.  
If you leave the **Treatment Code Generator** field empty, the default treatment code generator is used.
5. Click **Next >>**.  
The New Offer Template Step 2 of 3: Offer Attributes window opens.
6. Add standard and custom attributes to the offer template as needed. Use the arrow buttons (<< and >>) to move attributes into and out of the attribute list for the offer template, and to change the order and type (static, hidden, or parameterized) of included attributes.

**Note:** For an offer to be available in a flowchart, it must have at least one standard or custom attribute.

7. Click **Next >>**.  
The New Offer Template Step 3 of 3: Default Values window opens.
8. For attributes that you added to the offer template, supply a default value that will be used when users create offers using this template. When creating offers, users can change the default value of static and parameterized attributes, but cannot change the value you entered for hidden static attributes in the offer template.
9. For parameterized attributes with values supplied in a drop-down list, you can also add list items here, as you create the offer template. You can remove any new list items you add here, but cannot remove any list items that existed previously. Any additions to the list items made here are saved back to the offer custom attribute.

**Important:** If you added the **Offer Valid/Expiration Dates** attribute to the template as a parameterized attribute, on this screen you are presented with a **Flowchart run date** option. If you select this option instead of entering a default Offer Valid date, Campaign uses the date on which the process using offer runs, not the run date of the entire flowchart.

10. If you selected **Allow offers created from this template to be used in real-time interactions**, enter an **Interaction Point ID** and an **Interaction Point Name**.  
You can enter any integer for the Interaction Point ID default value, and any string for Interaction Point Name. The values are automatically populated with the correct data by the runtime environment, however, the design environment requires a default value.
11. Click **Finish**.

## Results

You have created the offer template. It can now be used for creating offers.

## Modifying offer templates

If an offer template has offers based on it, you can change the basic options and default values of attributes in the template. However, you cannot modify template data about offer codes or offer custom attributes. To make these changes, retire the original offer template and replace it by creating a new one with the desired changes.

### Procedure

1. Select **Settings > Campaign Settings**.

2. Click **Offer Template Definitions**.

3. Click the name of an offer template.

The New Offer Template Step 1 of 3: Metadata window opens.

If the offer template is currently used by an offer, you can only edit the basic options. If the offer template is not being used, you can also edit the offer and treatment code data.

4. Click **Next >>**.

The New Offer Template Step 2 of 3: Offer Attributes window opens.

5. Modify the attribute settings as needed.

**Note:** If the offer template is currently used by an offer, you cannot change settings for offer attributes. If the template is not being used, you can modify the attributes in the offer template as needed. Use the arrow buttons (<< and >>) to move attributes into and out of the attribute list for the offer template, and to change the order and type (static, hidden, or parameterized) of included attributes.

6. Click **Next >>**.

The New Offer Template Step 3 of 3: Default Values window opens.

7. Supply a default value for attributes in the offer template.

When creating offers, users can change the default value of static and parameterized attributes. However, users cannot change the value that you enter for hidden static attributes.

**Important:** If you added the **Offer Valid/Expiration Dates** attribute to the template as a parameterized attribute, on this screen you are presented with the option **Flowchart run date**. If you select this option instead of entering a default Offer Valid date, Campaign uses the date on which the process that uses the offer runs, not the entire flowchart.

8. Click **Finish**.

## Using drop-down lists in offer templates

A drop-down list, also known as a Select Box, is a list of values from which users can select a single item when they define an offer.

### About this task

Follow this procedure to make a drop-down list available in offer templates (and therefore in offers).

### Procedure

1. Define a custom offer attribute of the type **Select Box - String**. Specify the list of available values when you define the custom offer attribute. See “Creating or editing custom attributes” on page 48.
2. Add the attribute to an offer template. See “Creating offer templates” on page 58.
3. To determine whether users can specify additional values when they configure a contact process: Choose **Settings > Configuration** and adjust the global property `Campaign | partitions | partition[n] | server | flowchartConfig | disallowAdditionalValForOfferParam`.

## Results

Any offers that are based on the offer template will include the drop-down list. Users can select values from the drop-down list when they define the offer.

## Defining a list of outbound communication channels

Campaign includes the **Channel** attribute for use in offer templates. Modify the **Channel** attribute to define a list of available outbound communication channels, such as e-mail or phone, for offers.

### About this task

As delivered, the **Channel** attribute does not include any available values. To make use of the **Channel** attribute, you must modify it to provide the values from which users can select. To modify the attribute and define the available values, see “Creating or editing custom attributes” on page 48.

### Procedure

1. Select **Settings > Campaign Settings**.
2. Click **Custom Attribute Definitions**.
3. Click the **Channel** attribute.
4. The **Channel** attribute is defined as a **Select Box - String**. Modify the attribute to specify the list of available values.  
For more information, see “Creating or editing custom attributes” on page 48.
5. Add the attribute to an offer template: Select **Settings > Campaign Settings** and click **Offer Template Definitions**.  
For more information, see “Modifying offer templates” on page 60.
6. Choose **Settings > Configuration** and adjust the global property `Campaign | partitions | partition[n] | server | flowchartConfig | disallowAdditionalValForOfferParam` to determine whether users can specify additional values when they configure a Mail List, Call List, or Optimize process.

## Changing the order in which offer templates appear

You can adjust the order in which offer templates appear for users when they create a new offer. By default, offer templates are listed in the order in which you created them.

### About this task

Users see only the specific offer templates allowed by the security policy of the offer template and the roles of the user. Therefore, each user might see a different set of offer templates. The order that you specify is the order in which those templates appear.

### Procedure

1. Select **Settings > Campaign Settings**.
2. Click **Offer Template Definitions** in the **Templates and Customizations** section.
3. At the top or bottom of the list of offer templates, click **Reorder....**
4. Select one template at a time and click the up or down icon to move the template up or down in the list.
5. Click **Save Changes**.

## Retiring offer templates

Offer templates cannot be deleted, but they can be retired by administrators to prevent further use. Retired templates are greyed out in the list of offer templates and cannot be used for creating new offers.

## About this task

Retire an offer template when you no longer want users to be able to create new offers based on it. Previously created offers based on the template are not affected.

**Note:** After you retire an offer template, you cannot un-retire it. You would have to create a new offer template with the same characteristics.

## Procedure

1. Select **Settings > Campaign Settings**.
2. Click **Offer Template Definitions**.
3. To the right of the offer template, click **Retire**.
4. Click **OK** to confirm.

## Template icons

You select a template icon as part of the basic options when you create or modify an offer template. The template icon serves as a visual clue about the offer template when users create new offers.

The following table lists and shows the available template icons:

*Table 25. Offer template icons*

| Icon Name                      | Icon                                                                                  |
|--------------------------------|---------------------------------------------------------------------------------------|
| offertemplate_default.gif      |   |
| offertemplate_manychans.gif    |  |
| offertemplate_manydates.gif    |  |
| offertemplate_manyresp.gif     |  |
| offertemplate_manysegs.gif     |  |
| offertemplate_repeatingtbl.gif |  |

Table 25. Offer template icons (continued)

| Icon Name                     | Icon |
|-------------------------------|------|
| offertemplate_simpleemail.gif |      |
| offertemplate_simpleemail.gif |      |
| offertemplate_simplephone.gif |      |
| offertemplate_versions.gif    |      |

## Default offer attributes

When you create an offer template, you can add template attributes as needed.

By default, the following static attributes are included in all offer templates:

- **Name**
- **Description**
- **Offer code**
- **Relevant product(s)**

You cannot remove these static attributes from a template.

---

## Introduction to using Marketing Operations assets in Campaign offers

If both Marketing Operations and Campaign are installed, and you licensed the IBM Marketing Asset Management add-on for Marketing Operations, your campaigns can include digital assets from your Marketing Operations asset libraries. Campaign does not need to be integrated with Marketing Operations, although it may be.

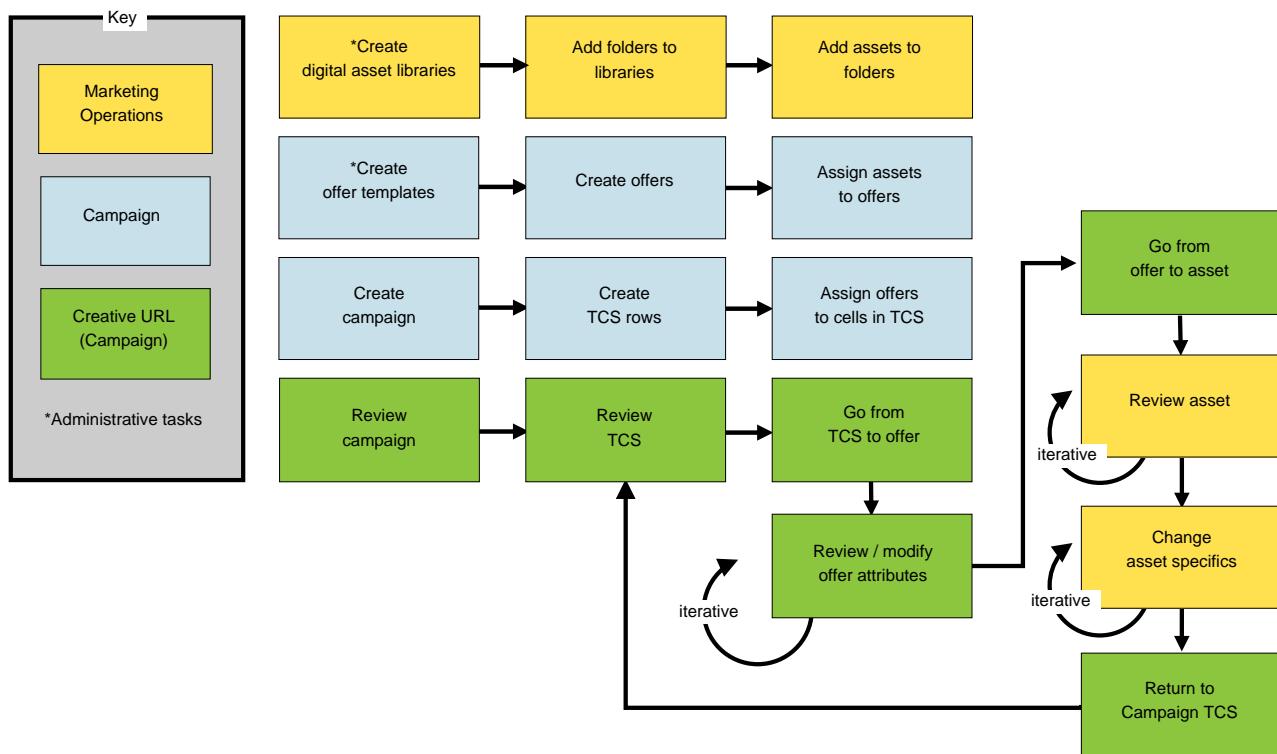
An example of this functionality is to create an offer that includes a product logo stored in a Marketing Operations asset library.

To include a Marketing Operations asset in an offer, a user creates an offer based on a template that includes the **CreativeURL** attribute. A "Creative URL" is a pointer that indicates the location of an asset in Marketing Operations. The asset that the **CreativeURL** attribute points to is included in the offer.

The **CreativeURL** attribute allows users to move seamlessly from Campaign to Marketing Operations when configuring offers, offer templates, or campaigns.

For example, when creating or editing a campaign, you can go from a target cell spreadsheet (TCS) cell to the offer related to that cell. From the offer, you can go to the related asset in Marketing Operations, where you can view or modify it. You can also upload a new asset to the library for immediate use in the campaign.

The following example shows one possible workflow for a system. This example is for a system that is not integrated. Your workflow might differ.



#### Related tasks:

"Setting up Marketing Operations assets for use in Campaign offers" on page 139

## Guidelines for using Marketing Operations assets in Campaign offers

This topic lists the prerequisites and requirements for using Marketing Operations assets in Campaign offers. This functionality depends on the **CreativeURL** offer attribute.

- Both Marketing Operations and Campaign must be installed. (The **CreativeURL** attribute is installed with Campaign. However, you cannot use the feature unless Marketing Operations is also installed.)
- You must license the IBM Marketing Asset Management add-on for Marketing Operations.
- Campaign may or may not be integrated with Marketing Operations. Even if UMO-UC integration is off, users can assign an asset to an offer.
- CreativeURL** is a standard Campaign offer attribute but it is not required. You can create offer templates with or without the attribute.
- If the **CreativeURL** attribute is included in a template, each offer based on that template must include an asset from a Marketing Operations asset library.
- An offer template, and any offers based on it, can include only one **CreativeURL**. Therefore, each offer can include only one asset from Marketing Operations.

**Note:** An offer can be related to only one asset. However, one asset can be related to multiple offers.

**Related tasks:**

“Setting up Marketing Operations assets for use in Campaign offers” on page 139



---

## Chapter 6. Audience level administration

IBM Campaign is delivered with a single audience level called Customer. You can define any additional audience levels that you need. Audience levels let flowchart designers target specific groups, such as Households, in marketing campaigns.

Campaign administrators can perform the following tasks:

- Create the audience levels needed for your company's campaigns.
- Create database tables in the Campaign system database to support the new audience levels.
- Map system tables to the supporting database tables for the new audience levels in the Campaign system database.
- Specify audience levels and associated database fields when mapping user tables.
- Create global suppression segments for one or more audience levels.

---

### About audience levels

An audience level is a collection of identifiers that can be targeted by a campaign.

For example, a set of campaigns could use the audience levels "Household," "Prospect," "Customer," and "Account." Each of these levels represents a certain view of the marketing data available for a campaign.

Audience levels are typically organized hierarchically. Using the examples above:

- Household is at the top of the hierarchy, and each household can contain multiple customers as well as one or more prospects.
- Customer is next in the hierarchy, and each customer can have multiple accounts.
- Account is at the bottom of the hierarchy.

Other, more complex examples of audience hierarchies exist in business-to-business environments, where audience levels may need to exist for businesses, companies, divisions, groups, individuals, accounts, and so on.

These audience levels may have different relationships with each other, for example one-to-one, many-to-one, or many-to-many. By defining audience levels, you allow these concepts to be represented within Campaign so that users can manage the relationships among these different audiences for targeting purposes. For example, although there might be multiple prospects per household, you might want to limit mailings to one prospect per household.

An audience level is composed of a fixed number of keys or database table fields, which together uniquely identify a member of that audience level.

For example, the audience level "Customer" might be identified by a single `IndivID` field or by a combination of a `HouseholdID` field and a `MemberNum` field.

For more details about audience levels, see the section on the Audience process in the *Campaign User's Guide*.

---

## Why different audience levels are needed in Campaign

Different audience levels enable flowchart designers to target and switch between specific identifiable groups in their campaigns, or to scope one audience level by another (for example, to target one individual per household).

For example, audience levels enable developers to do such things as:

- Select the customer with the highest account balance in each household.
- Select all accounts with a negative balance belonging to a particular set of customers.
- Select all households with at least one individual holding a checking account.

For more details about audience levels, see the section on the Audience process in the *Campaign User's Guide*.

---

## The default Customer audience level

Campaign is delivered with a single audience level called *Customer*. You can define additional audience levels as required for your user tables and campaign needs.

By default, the Campaign system database contains the tables needed to support the *Customer* audience level. After installing Campaign, you must map these tables.

---

## Creating additional audience levels

If you require additional audience levels, you must create and map the equivalent set of system tables to support them as you did for the default *Customer* audience level.

You must define audience levels before you map user tables, so that you can specify audience levels during the user table mapping process. Base tables mapped at a specific audience level, when queried, will return IDs at that audience level.

---

## About audience levels and system tables

Each audience level you create requires the following associated system tables:

- A contact history table
- A detailed contact history table
- A response history table
- A segment membership table

These system table entries are automatically created when you create the audience level. You must then:

- Create the physical database tables in the Campaign system table database.
- Map these system tables to the database tables.

**Note:** IBM recommends that you map the segment membership table only if you are using strategic segments with Campaign flowcharts or Optimize sessions in Contact Optimization.

## Default Customer audience level system tables

Campaign is delivered with system table ddl scripts to create the tables that support the default *Customer* audience level.

After installing Campaign, you must map these system tables to tables in the Campaign system database as follows:

*Table 26. Default audience level system tables*

| IBM Campaign System Table               | Database Table Name |
|-----------------------------------------|---------------------|
| Customer Contact History                | UA_ContactHistory   |
| Customer Response History               | UA_ResponseHistory  |
| Customer Detailed Contact History Table | UA_DtlContactHist   |
| Customer Segment Membership             | UA_SegMembership    |

If these tables are mapped as listed above, then the sample reports provided with Campaign will work with a minimum number of changes.

The SQL statements used to create these tables and their related indices can be used as templates to create tables for other audience levels.

## About audience levels and strategic segments

For each audience included in a flowchart or Optimize session that uses strategic segments, you map the segment membership system table to a physical table that defines segment members.

For example, to use the default Customer audience in an optimization session that includes strategic segments, you must map the audience system table Customer Segment Membership to the UA\_SegMembership segment database table. You populate the database table using the Create Seg process.

**Note:** IBM recommends that you map an audience's segment membership table only if you plan to use the audience in flowcharts or Optimize sessions that use strategic segments.

Using strategic segments in Campaign flowcharts or Contact Optimization sessions is optional. If you map the segment membership table, each time you run the flowchart or Optimize session, Campaign or Contact Optimization updates the table. This is unnecessary processing overhead if you are not using strategic segments.

## Audience level unique identifiers

When you create a new audience level, you must specify at least one field to be used as the unique identifier for members of that audience level. To uniquely identify each member of the audience, you might need to use multiple fields.

For example:

- Household could be identified by the field HHold\_ID
- Customer could be identified by the fields HHold\_ID and MemberNum.
- Prospect could be identified by the field Prospect\_ID.
- Account could be identified by the field Acct\_ID.

The field names (and in particular any unique identifier field names) in the new audience level must exactly match the field name(s) in the database table for mapping. This allows Campaign to automatically match the database fields to the appropriate system table fields when you create the audience level.

**Note:** Audience level field names have specific character restrictions. For details, see Chapter 19, “Special characters in IBM Campaign object names,” on page 317

## Required fields in audience-level-specific tables

This section provides lists of the required fields in the system tables required for each audience level.

- “Required fields in the contact history table” on page 70

- “Required fields in the detailed contact history table”
- “Required fields in the response history table”
- “Required fields in the segment membership table” on page 71

## Required fields in the contact history table

The contact history table for each audience level in the Campaign system database must minimally contain the fields described in this section.

*Table 27. Required fields in the contact history table*

| Key | Column Name                   | Data Type       | Length | Allow Nulls |
|-----|-------------------------------|-----------------|--------|-------------|
| Yes | Identifier for audience level | numeric or text |        | No          |
| Yes | CellID                        | bigint          | 8      | No          |
| Yes | PackageID                     | bigint          | 8      | No          |
| No  | ContactDateTime               | datetime        | 8      | Yes         |
| No  | UpdateDateTime                | datetime        | 8      | Yes         |
| No  | ContactStatusID               | bigint          | 8      | Yes         |
| No  | DateID                        | bigint          | 8      | Yes         |
| No  | TimeID                        | bigint          | 8      | Yes         |

**Note:** Campaign is shipped with additional fields (ValueBefore and UsageBefore) in the UA\_ContactHistory table for the Customer audience level to support the example reports. You can define your own "additionally tracked fields" for contact history and customize reports as needed.

## Required fields in the detailed contact history table

The detailed contact history table for each audience level in the Campaign system database must minimally contain the fields described in this section.

*Table 28. Required fields in the detailed contact history table*

| Key | Column Name                   | Data Type       | Length | Allow Nulls |
|-----|-------------------------------|-----------------|--------|-------------|
| Yes | Identifier for audience level | numeric or text |        | No          |
| No  | TreatmentInstID               | bigint          | 8      | No          |
| No  | ContactStatusID               | bigint          | 8      | Yes         |
| No  | ContactDateTime               | datetime        | 8      | Yes         |
| No  | UpdateDateTime                | datetime        | 8      | Yes         |
| No  | DateID                        | bigint          | 8      | No          |
| No  | TimeID                        | bigint          | 8      | No          |

## Required fields in the response history table

The response history table for each audience level in the Campaign system database must minimally contain the fields described in this section.

*Table 29. Required fields in the response history table*

| Key | Column Name                    | Data Type       | Length | Allow Nulls |
|-----|--------------------------------|-----------------|--------|-------------|
| Yes | Identifier for audience level. | numeric or text |        | No          |
| Yes | TreatmentInstID                | bigint          | 8      | No          |
| Yes | ResponsePackID                 | bigint          | 8      | No          |
| No  | ResponseDateTime               | datetime        | 8      | No          |

*Table 29. Required fields in the response history table (continued)*

| Key | Column Name        | Data Type | Length | Allow Nulls |
|-----|--------------------|-----------|--------|-------------|
| No  | WithinDateRangeFlg | int       | 4      | Yes         |
| No  | OrigContactedFlg   | int       | 4      | Yes         |
| No  | BestAttrib         | int       | 4      | Yes         |
| No  | FractionalAttrib   | float     | 8      | Yes         |
| No  | CustomAttrib       | float     | 8      | Yes         |
| No  | ResponseTypeID     | bigint    | 8      | Yes         |
| No  | DateID             | bigint    | 8      | Yes         |
| No  | TimeID             | bigint    | 8      | Yes         |
| No  | DirectResponse     | int       | 4      | Yes         |

Each response history table you create for a new audience level should have a foreign key constraint on the UA\_Treatment table's TreatmentInstID field.

### **Required fields in the segment membership table**

If you are using strategic segments in Campaign or Contact Optimization, you must create the segment membership table for each audience level that you use with strategic segments. At a minimum, the table must contain the fields described in this section.

*Table 30. Required fields in the segment membership table*

| Key | Column Name                   | Data Type       | Length | Allow Nulls |
|-----|-------------------------------|-----------------|--------|-------------|
| Yes | SegmentID                     | bigint          | 8      | No          |
| Yes | Identifier for audience level | numeric or text |        | No          |

---

## **About audience levels and user tables**

This section contains the following information:

- “User tables with a single audience level”
- “User tables with multiple audience levels”

### **User tables with a single audience level**

When you map a user table, you must specify at least one audience level to be the primary audience of that table.

During this step, Campaign associates the field(s) you specified when creating the audience level with the identifier field(s) of the same name in the user table. By doing this, you have specified that by default, when Campaign makes selections from this user table, IDs are returned from the primary audience level.

For example, if you create an audience level named Account with the field Acct\_ID, and select this audience level as the primary audience when mapping the user table Accounts, you have associated the Acct\_ID audience level field with the field in the user table that is the unique identifier (primary key) for the Accounts database table.

### **User tables with multiple audience levels**

A user table can be associated with multiple audience levels, with one of the audience levels designated as the primary audience level, and the remaining audience levels as alternate audience levels.

**Note:** To enable flowchart designers to switch from one audience level to another or to scope one audience level by another, you must define at least one user table with all required audience levels. Campaign can then use this table to "translate" between one audience level and another as needed.

For example, a user table that contains data about customer accounts could have the following columns:

- Acct\_ID
- Indiv\_ID
- HHold\_ID

In this table, the Acct\_ID might be unique for each record. Because an individual could have multiple accounts, and a household could contain multiple individuals, multiple records could have the same values for the Indiv\_ID and HHold\_ID fields.

Assuming you have three audience levels, Account, Customer, and Household, when you map this user table, you could specify all three of these audience levels and associate them with the corresponding fields listed above in the user table. This enables flowchart designers to switch target audiences, or scope one audience level by another (for example, accounts per customer, customers per household, or accounts per household) when using this table.

---

## Working with audience levels

This section contains the following information:

- “Workflow for setting up a new audience level”
- “Removing an audience level” on page 74

## Workflow for setting up a new audience level

The listed tasks provide the workflow for setting up a new audience level.

See each task for the specific procedures.

- “Task 1: Create the required database tables for each new audience level”
- “Task 2: Create the new audience levels in Campaign” on page 73
- “Task 3: Map the IBM Campaign system tables to the database tables” on page 73
- “Task 4: Map the user tables containing relevant data to the appropriate audience level(s)” on page 74
- “Task 5: Save the mapped tables in a table catalog” on page 74

### Task 1: Create the required database tables for each new audience level

#### About this task

You must create physical database tables in the Campaign system database to support each new audience level(s) you create. The required tables for each audience level are:

- A contact history table
- A detailed contact history table
- A response history table
- A segment membership table

Each required table has a set of required fields. You can create additional custom fields in your audience tables.

**Note:** You should create indices on the tables you create. For example, if you create the INDIV\_ContactHistory table for a new Individual audience level, you could create an index as follows:  
CREATE INDEX XIE1INDIV\_ContactHistory ON INDIV\_ContactHistory ( IndivID ).

To create the tables for other audience levels, you may want to use the SQL statements used to create the Campaign default audience level tables and their related indices as templates. For example, you could use UA\_ContactHistory as a template for Acct\_ContactHistory (for an audience level Account). To see the available SQL statements, look in the /Campaign/ddl directory for the script that creates system tables for your database management system.

**Note:** You have the flexibility to map multiple system tables for a new audience level to the same underlying physical database table (containing sufficient audience fields to represent all necessary audience levels), or you can create separate database tables for each audience level. IBM consulting or your implementation partner can help you decide how to best implement contact and response history tables for your environment.

## Task 2: Create the new audience levels in Campaign

### Procedure

1. Select **Settings > Campaign Settings**.  
The Campaign Settings page appears.
2. On the Campaign Settings page, under **Data Source Operations**, click **Manage Audience Levels**.  
The Audience Levels window opens, displaying existing audience levels.
3. Click **Create New**.  
The Create New Audience Level window opens.
4. Enter a unique **Audience Level Name**, which should reflect the group of identifiers at that audience level.  
Audience level names have no specific character restrictions.
5. In the **Field List**, enter a name and select the type (numeric or text) for each field that will be used to uniquely identify each member of the audience level.

**Note:** Audience level field names have specific character restrictions.

You must specify exactly the same names as the field names in the database tables for this audience level. Fields can only be mapped in "Task 3: Map the IBM Campaign system tables to the database tables" if Campaign finds an exact match for the field names.

For example, if you are creating the new audience level "Household" and you specify one field for unique audience level identifier called "HouseholdID," you must make sure the ID field in your audience level-specific database tables matches this exactly; in other words, that it is also named "HouseholdID."

6. Click **OK**.

### Results

In the Audience Levels window, when you select the new audience level, you see the required tables listed as "Not Mapped." You perform the mapping in "Task 3: Map the IBM Campaign system tables to the database tables."

## Task 3: Map the IBM Campaign system tables to the database tables

### About this task

After creating the physical database tables for each new audience level and the audience levels in Campaign, you must map the IBM Campaign system tables to these database tables.

You can map user tables to your created audience levels without mapping the IBM Campaign system tables to database tables, but you will not be able to log contact and response history without mapping the Contact History, Detailed Contact History, and Response History tables.

IBM recommends that you map segment membership system tables to physical database tables only for audiences used in Campaign flowcharts or Contact Optimization sessions that contain strategic segments. Using strategic segments in Campaign and Contact Optimization is optional.

## Procedure

1. Select **Settings > Campaign Settings**.  
The Campaign Settings page appears.
2. On the Campaign Settings page, under **Data Source Operations**, click **Manage Audience Levels**.  
The Audience Levels window opens, displaying existing audience levels.
3. Select the audience level for which you are mapping database tables, and click **History Tables**.
4. On the Table Mappings window, select each IBM Campaign system table and click **Map Table**.
5. On the table mapping window, select the database table corresponding to the IBM Campaign system table for that audience level. The Source Table Fields list is populated with the fields from the database table you selected. The Required Fields list is populated with Selected Fields (from your source database table) and the corresponding Required Fields (from the IBM Campaign system table).

**Important:** Fields can only be mapped if Campaign finds an exact match for the field names.

6. Click **Next** to specify mapping for any custom fields in your database tables.
7. Click **Next** to specify display names for custom fields. This option is not available for all tables.
8. Click **Finish** to complete the mapping. Repeat this procedure for each required IBM Campaign system table for the audience level.

**Note:** You can also perform this task from the Manage Table Mappings link on the Campaign Settings page.

## Task 4: Map the user tables containing relevant data to the appropriate audience level(s)

### About this task

When you map a user table, you must specify one primary audience level. You can also specify one or more alternate audience levels.

For each audience level, map to the user table containing the identifier for the entity at that audience level.

## Task 5: Save the mapped tables in a table catalog

### About this task

(Optional). Save your mapped tables in a table catalog so that you can reload the catalog without remapping individual tables.

## Removing an audience level

**Important:** Do not remove an audience level that has been used within Campaign, as this will result in significant system problems, as described below.

When you remove an audience level, the system tables are removed, but the underlying database tables remain.

Therefore, if you remove an audience level, any processes and flowcharts depending on that audience level (that is, that attempt to write to the audience level tables) will generate errors.

**Important:** Before removing an audience level, IBM recommends backing up the entire Campaign system so that you can recover the current system state if you encounter problems following the removal.

It is possible to restore a deleted audience level by creating a "new" audience level of the same name, with tables containing the same required fields, and remapping the audience level tables.

## To remove an audience level

### Procedure

1. Select **Settings > Campaign Settings**.  
The Campaign Settings page appears.
2. Under **Data Source Operations**, click **Manage Audience Levels**.  
The Audience Levels window opens, displaying previously defined audience levels.
3. Select the audience level to remove.
4. Click **Remove**.  
You are prompted to confirm the removal.
5. Click **OK**.

---

## About global suppressions and global suppression segments

**Note:** Specifying and managing global suppression segments requires the "Manage Global Suppressions" permission in Campaign.

Use the global suppression feature to specify a list of IDs (in a single audience level) that are automatically excluded from all cells in flowcharts in Campaign.

You do this by creating this list of unique IDs as a strategic segment, then by specifying that segment as a global suppression segment for a particular audience level. Only one global suppression segment can be configured for each audience level.

If a global suppression segment has been configured for an audience level, all top-level Select, Extract, or Audience processes associated with that audience level automatically exclude the IDs in the global suppression segment from their output results, unless the global suppression is explicitly disabled for a specific flowchart. By default, flowcharts have global suppression enabled so that no action needs to be taken for any configured global suppression to be applied.

For details about disabling global suppressions, see the *Campaign User's Guide*.

An exception to the default of global suppression being enabled is the flowchart containing the CreateSeg process that created the global strategic segment itself. In this case, the global suppression is always disabled (only for the audience level for which the global suppression segment is created).

## Switching audiences with global suppressions

If you are switching from Audience 1 to Audience 2 in a flowchart, and have one global suppression defined for each of these audience levels, the global suppression segment for Audience 1 is applied to the input table, and the global suppression segment for Audience 2 is applied to the output table.

## About creating global suppression segments

You create global suppression segments by performing the following tasks:

- "To create the global suppression segment in a flowchart" on page 76
- "To specify the segment as a global suppression segment" on page 76

## To create the global suppression segment in a flowchart

### About this task

**Important:** The best practice for creating or updating global suppression segments is to do this when no flowcharts at the same audience level are running (and thus potentially using the segment(s)). The consistency of suppression lists cannot be guaranteed if global suppression segments are created or updated while flowcharts are using them.

### Procedure

1. Create a strategic segment in a flowchart in the usual way, naming it in such a way that you can identify it easily for selection from a list. For details about creating strategic segments, see the *Campaign User's Guide*.
2. In the CreateSeg process configuration dialog, on the Define Segments tab, click **Edit...**
3. In the Edit Segment window, in the **Temp Table Data Source** field, select one or more data sources. You should specify all data sources where the global strategic segment is commonly used. If the strategic segment is not persisted in a data source, then the suppression is done on the Campaign server using the binary file. If the CreateSeg process is unable to create the strategic segment or write the segment to any of the specified data sources, it will be unconfigured or fail when run. Changes to the temp table data sources are made at the time you save the process configuration, not when the flowchart is saved or run.
4. Click **OK**.  
On the Define Segments tab, you see that the data source you selected is displayed in the Temp Table DS column for the current segment.

## To specify the segment as a global suppression segment

### Procedure

1. After creating the segment that you want to use as a global suppression segment, in Campaign, select **Settings > Campaign Settings**.  
The Campaign Settings page appears.
2. On the Campaign Settings page, click **Manage Audience Levels**.
3. In the Audience Levels window, select the audience level for which you are specifying a global suppression segment.
4. Click **Global Suppressions...**  
In the Global Suppression Segment window, the drop-down list displays the list of segments matching the current audience level.
5. Select the segment to use as the global suppression segment for the current audience level, then click **OK**.
6. Click **Close**.

### Results

The selected strategic segment is specified as the global suppression segment for the audience level.

On the Marketing Platform Configuration page, the global suppression segment, when defined, is displayed in audience level properties in the following path:

`partitions > partition[n] > audienceLevels > audienceLevelN > globalSuppressionSegmentID`.

## Updating global suppression segments

You update global suppression segments in the same way as you would update strategic segments. For details about editing strategic segments, see the *Campaign User's Guide*.

**Important:** The best practice for creating or updating global suppression segments is to do this when no flowcharts at the same audience level are running (and thus potentially using the segment(s)). The consistency of suppression lists cannot be guaranteed if global suppression segments are created or updated while flowcharts are using them.

## Deleting global suppression segments

You delete global suppression segments in the same way as you would delete strategic segments. For details about deleting strategic segments, see the *Campaign User's Guide*.

When the flowchart that created the global suppression segment is deleted, the segment is also deleted.

## Logging for global suppressions

The following information relating to global suppressions is included in the flowchart log:

- The global suppressions segment name (and path) for processes in which it is applied
- The number of IDs before suppression
- The number of IDs after suppression



---

## Chapter 7. Contact history administration

Contact history is stored in the IBM Campaign system database in separate tables by audience level. Therefore, you need to set up audience levels before you begin working with contact history.

Before you begin working with contact history, you should read all audience level administration topics and set up the required audience levels.

In addition, you can find basic concepts about contact history, and information about setting up flowcharts to record contact history, in the *Campaign User's Guide*.

---

### Contact history concepts

Contact history is maintained in the base contact history and detailed contact history tables in the Campaign system database. Contact history is maintained separately for each audience level. Offer history and treatment history are used together with contact history to form a complete historical record of offers that are sent.

The following topics provide conceptual information about contact history:

- “What is contact history?”
- “What is detailed contact history?” on page 80
- “What is contact status?” on page 80
- “About updating contact status” on page 80
- “How does contact history relate to audience levels?” on page 80
- “How does contact history relate to database and system tables?” on page 81
- “What is offer history?” on page 81
- “What is treatment history?” on page 81

### What is contact history?

Contact history is the historical record of your direct marketing efforts or communications, including detailed information about who was contacted, when, with what message or offer, and on what channel.

Contact history typically includes both targets contacted through campaigns, as well as your hold-out controls who do not receive a communication, but are measured for comparison purposes against the target group.

In Campaign, contact history includes the record of the exact version offer given to each ID, including the values of personalized offer attributes, providing a complete historical view of your marketing communications.

For example, a campaign may produce a list of targeted customers, output through a Call List or Mail List process. That list of customers is written to the contact history table for the example Customer audience level, `UA_ContactHistory`, in the Campaign system database.

Contact history is recorded and stored in the Campaign system database. There is a separate entry for a base contact history system table for each audience level you create. The base contact history stores the audience membership within each target and control cell used in your marketing campaigns, when all audience entities within the same cell receive exactly the same offer(s). Data from the base contact history table is used in conjunction with the `UA_Treatment` system table to resolve exactly who received which offers.

**Note:** If users turn off contact history logging in the Call List or Mail List process, contact history made in that process is not written to the database.

Contact history is written to the database for production runs only, not test runs.

## What is detailed contact history?

Detailed contact history is populated only when data-driven offer personalization is used (where individuals in the same cell receive different offer versions: that is, offers with different values for personalized offer attributes). These details are written to the detailed contact history table (for example, UA\_DtlContactHist) for each audience level.

There is a separate entry for a detailed contact history system table for each audience level you create. The detailed contact history stores the exact treatment(s) each audience entity received.

Detailed contact history records one row per audience ID-offer version pair. For example, if an individual receives three different offer versions, three rows are written to detailed contact history for that individual, and the three treatments will appear in the UA\_Treatment table.

**Note:** If users turn off contact history logging in the Call List or Mail List process, detailed contact history made in that process is not written to the database.

Detailed contact history is written to the database for production runs only, not test runs.

## What is contact status?

Contact status is the indicator of the type of contact made.

Campaign users specify the contact status to use when configuring a Call List or Mail List process.

**Note:** Control cells automatically receive the contact status with a value of 2 in the Defaults column. By default, the Name of that row is Contact.

Campaign is delivered with a set of default contact status codes. As an administrator, you can add additional status codes.

## About updating contact status

You use the Track process to update contact statuses, as well as other tracked fields in the contact history.

For example, a Mail List process may record customer contacts in the UA\_ContactHistory table. The contacts would have temporary contact status with a value in the CountsAsContact field of 0. The campaign manager then sends this list of contacts to a mail house. The mail house performs post-processing on the list, eliminating addresses that are no longer valid, and returns a list of customers who were actually contacted. A different flowchart then selects the customers from the returned list and uses the Track process to update the contact status to one with a CountsAsContact field of 1.

## How does contact history relate to audience levels?

Campaign can record and maintain a separate contact history and detailed contact history for each audience level you have defined.

Each audience level should have its own related contact history and detailed contact history tables in the Campaign system database.

## How does contact history relate to database and system tables?

Contact history tables, which must exist in the Campaign system database, store historical contacts for each audience level.

The Customer audience level is delivered as an example, and the history of contacts targeting customers can be stored in the UA\_ContactHistory in the Campaign system database. Detailed history for the Customer audience level can be stored in the UA\_DtlContactHist table.

If you create an additional audience level, you must create the contact history and detailed contact history tables and related indexes for it in the Campaign system database. You can use the tables for the example Customer audience level as templates.

After you create the tables in the Campaign system database for a new audience level, you must map the new tables for the audience level's contact history and detailed contact history.

## What is offer history?

Offer history is the historical record of offers made through campaigns. It is part of the overall historical record of contacts made through your campaigns.

Offer history is stored across multiple tables in the Campaign system table database:

- UA\_OfferHistory table
- UA\_OfferHistAttrib table (for parameterized offer attributes),
- UA\_OfferAttribute table (for static offer attributes)

For example, a typical flowchart results in a list of targeted customers, output through a Call List or Mail List process. A record of the offer(s) made in that flowchart are written to the UA\_OfferHistory table offer history.

**Note:** If users turn off contact history logging in the Call List or Mail List process, offer history made in that process is not written to the database.

Offer history is written to the database for production runs only, not test runs.

Offer history is not stored in separate tables by audience level; all offer history is stored across the same set of system tables.

## What is treatment history?

Treatment history is the record of treatments generated through campaigns, including both target and control treatments. A treatment is a unique combination of a cell, an offer, and time (a specific flowchart run). If you run the same flowchart multiple times, a new treatment is generated each time.

Treatment history is stored in the UA\_Treatment table in the Campaign system table database, and is used together with contact history to form a complete historical record of offers sent to IDs in cells, and the specific details of each sent offer's attributes.

Cell membership is recorded in the UA\_ContactHistory table for the appropriate audience level and the treatment(s) given to each cell are recorded in the UA\_Treatment table. This is a highly compressed and efficient way to store complete historical information. For example, if all 10,000 people in a cell receive the same three offers, rather than writing  $3 * 10,000 = 30,000$  records to contact history, 10,000 rows are written to contact history recording the individuals within the cell, and 3 rows are written to the UA\_Treatment table representing the treatments.

**Note:** If users turn off contact history logging in the Call List or Mail List process, the treatment history made in that process is not written to the database.

Offer history is written to the database for production runs only, not test runs.

Treatment history is not stored in separate tables by audience level; all treatment history is stored in the UA\_Treatment table.

---

## Working with contact history

This section contains the following information:

- “Creating contact history tables for new audience levels”
- “Mapping contact history tables to system tables”
- “To add a contact status code”
- “Writing to contact history” on page 83
- “Updating contact history” on page 84
- “Clearing contact history” on page 84

### Creating contact history tables for new audience levels

When you create a new audience level, you may need to create a table in the Campaign system table database to store contact history and detailed contact history for targets and controls in that audience level.

When you create these tables, you must create indexes on them. For example, if you create the INDIV\_ContactHistory table for a new Individual audience level, you could create an index as follows:

```
CREATE INDEX XIE1INDIV_ContactHistory ON INDIV_ContactHistory (IndivID)
```

### Mapping contact history tables to system tables

When you create a new audience level, you must map the contact history and detailed contact history system tables for the new audience level.

### To add a contact status code

You can add your own contact status codes to supplement the contact statuses that are delivered with Campaign. Define new contact status codes in the UA\_ContactStatus table in the Campaign system database. A contact status indicates the type of contact made (for example, Delivered, Undelivered, Control).

#### Before you begin

Before you add a contact status, see *Default contact status codes* to determine whether the existing status codes meet your needs.

#### About this task

Campaign users specify a contact status when they configure a Call List or Mail List process. They configure a Track process to update contact statuses. Use the following procedure to add contact statuses if the ones supplied with Campaign do not meet your needs.

#### Procedure

1. Log in to the database management system that contains the Campaign system table database.
2. Open the UA\_ContactStatus table.
3. Add rows for new contact statuses. For each new status:
  - a. Enter a unique ContactStatusID.

**Note:** The ContactStatusID can be any unique positive integer within the internalIdLowerLimit and internalIdUpperLimit configuration parameter values that are defined on the Configuration page in Marketing Platform.

- b. Enter a Name.
  - c. Optionally, enter a Description.
  - d. Enter a unique ContactStatusCode. You can use the values A-Z and 0-9.
  - e. In the CountsAsContact column, enter 1 if the status represents a successful contact, or 0 if it does not.
- Note:** This column is used by Contact Optimization to manage contact fatigue. It also can be useful for queries against the contact history table to suppress individuals who received a specific number of contacts within some time period.
- f. In the Defaults column, enter 0 if that status is not to be the default, or 1 if it is. Enter 2 for the default status for control cells. Ensure that only one row has the value of 1 and one row has the value of 2 in this column.
4. Save the table changes.

## What to do next

If necessary, see the documentation for your database management system for detailed instructions on modifying data in tables.

## Deleting contact status codes

You can delete contact status codes that you do not intend to use. However, you should not delete a contact status that is in use.

## About this task

A contact status indicates the type of contact that was made, such as Delivered, Undelivered, or Control. Campaign users specify a contact status when they configure a Call List or Mail List process. They configure a Track process to update contact statuses. Use the following procedure to delete a contact status.

## Procedure

1. Log in to the database management system that contains the Campaign system table database.
2. Open the UA\_ContactStatus table.
3. Delete the contact status row for any status that is not in use.
4. Save the table changes.

## What to do next

If necessary, see the documentation for your database management system for detailed instructions on modifying data in tables.

## Writing to contact history

To record contact history, users configure one or more contact processes, such as a Call List or Mail List, then run a flowchart in production (not test) mode. Contact history is written to the tables related to the audience levels that are used in the flowchart.

**Note:** The settings discussed in this topic do not affect eMessage and Interact. Those products use their own ETL processes to extract, transform, and load data into the Campaign contact and response history tables.

The ability to write to contact history depends on the contact history logging options, which administrators can use to either allow or prohibit logging. These global configuration settings affect the contact processes as well as the Track process:

- The **logToHistoryDefault** configuration setting determines whether the **Log to contact history tables** option is checked or cleared by default in a contact or Track process box. If **logToHistoryDefault** is enabled, **Log to contact history tables** is checked by default, meaning contact history updates are allowed.
- The **overrideLogToHistory** configuration setting controls whether users with the appropriate permissions can change the **Log to contact history tables** setting when they configure a contact or Track process.

To make all flowchart production runs always write to contact history, enable **logToHistoryDefault** and disable **overrideLogToHistory**.

When contact history is logged, offer and treatment history are written as well.

**Note:** If a process is configured to log contact history, but the process runs on a cell with no selected targets, history records are not written.

For more information, see the *Campaign User's Guide*.

## Updating contact history

To update contact history that has already been recorded, users configure the Track process and run it in production mode. Updating contact history is necessary, for example, to update contact status or add additionally tracked fields.

Consider the case where an updated contact list is received from a mail house with a list of targets who could not be contacted. In this case, you would use the updated list as the input to a Track process. When the flowchart that contains the Track process runs in production mode, contact history is updated for the tables related to the audience-levels that are used.

The configuration settings **logToHistoryDefault** and **overrideLogToHistory** determine whether contact history can be updated.

Depending on the configuration settings, users may be able to check or clear the **Log to contact history and tracking tables** option when they configure the Track process.

## Clearing contact history

Users can clear the contact history generated by a contact process while configuring it. They are also prompted to select run history options when re-running processes or branches that have existing contact history, as these types of runs do not increment flowchart Run IDs.

Users can clear all contact history generated by that particular process, a particular run instance (identified by run date and time), or all contacts made within a specified contact date range. The appropriate records are then permanently deleted from the contact history table for the audience level. The next time the flowchart is run, the contact history is replaced rather than appended in the contact history table.

For more information, see the *Campaign User's Guide*.

---

## Default contact status codes

Campaign is delivered with the following contact statuses, defined in the UA\_ContactStatus table.

*Table 31. Default contact status codes*

| Contact-StatusID | Name          | Description | Contact-StatusCode | Counts-AsContact | Defaults |
|------------------|---------------|-------------|--------------------|------------------|----------|
| 1                | Campaign Send | <NULL>      | CSD                | 1                | 0        |
| 2                | Delivered     | <NULL>      | DLV                | 1                | 1        |
| 3                | Undelivered   | <NULL>      | UNDLV              | 0                | 0        |
| 4                | Control       | <NULL>      | CTRL               | 0                | 2        |



---

## Chapter 8. Response history administration

Before you begin working with response history, you should read the audience level administration topics and set up required audience levels.

Response history is stored in the Campaign system database in separate tables by audience level. Therefore, you must set up audience levels before you work with response history.

For basic concepts about contact and response history and information about setting up flowcharts to use the Response process, see the *Campaign User's Guide*.

---

### Reponse history and response types

*Response history* is the historical record of responses to campaigns, either by targeted respondents or by hold-outs (members of control groups who perform the desired action despite not having been contacted). *Response types* are the specific actions that you are tracking in a campaign.

For more information about response history and instructions on how to design flowcharts to record responses, see the *Campaign User's Guide*.

#### What are response types?

Response types are the actions that you are tracking, such as click-through, inquiry, purchase, activation, use, and so on. Each response type is represented by a unique response code. Response types and codes are defined globally in the UA\_UsrResponseType table, and are available for all offers, although not all response types are relevant for all offers. For example, you would not expect to see a click-through response type for a direct mail offer.

Campaign is delivered with a set of default response types. As an administrator, you can add more response types.

Adding response types is explained in the *Campaign Administrator's Guide*. For information about using and tracking response types, see the *Campaign User's Guide*.

#### How does response history relate to audience levels?

Campaign records and maintains a separate response history for each audience level that is defined. Each audience level has its own related response history table in the Campaign system database, as well as a related IBM Campaign system table.

#### How does response history relate to database tables?

Response history tables, which must exist in the Campaign system database, store historical responses for each audience level.

The Customer audience level is delivered by default, and the history of responses from customers could be stored in the UA\_ResponseHistory in the Campaign system database.

If you create an additional audience level, you must create the response history table for it in the Campaign system database.

After you create the table in the Campaign system database for a new audience level, you must map the new table to the IBM Campaign system table for the audience level's response history, which is

automatically created when you create the audience level.

## Foreign key constraints in response history tables

Each response history table that you create for a new audience level must have a foreign key constraint on the UA\_Treatment table's TreatmentInstID field. For details on how to set up this constraint, see the DDL file that creates the system tables.

---

## Action tables

An action table is an optional database table or file containing response data that is collected after offers are presented to customers.

An action table is audience level-specific. Typically, you create one action table for each audience level in Campaign.

The action table can then serve as the source data of the input cell for the Response process in a campaign flowchart. Campaign reads from the action table, and if a match is found between the relevant attributes and/or response codes, Campaign populates the response history tables.

Using an action table is a best practice to ensure that sufficient information about target responses is recorded.

**Important:** Administrators must ensure that any action table that is used for response tracking is locked during response processing. Administrators must also clear rows after each Response process run to ensure that responses are not credited multiple times. For example, you can use Campaign to run SQL after the Response process to purge the action table.

### What does an action table contain?

An action table includes data such as customer identification, response codes, and attributes of interest. Depending on how responses are tracked in your organization, the responses could be directly related to transactional data, such as purchases or contracts and subscriptions.

Each row of the action table represents a single event, which must minimally contain the audience IDs, the response type, and the response date. An action table typically includes one or more response codes (campaign, cell, offer, or treatment codes) and one or more standard or custom offer attributes for inferred response tracking (for example, the purchased product or service). Any field that is populated in an event is used to match against possible treatments that have that offer attribute. Any fields that are NULL are ignored.

The best practice is to use an action table that combines all responders and response types.

### Where are action tables located?

The decision where to put action tables must be made on a case-by-case basis and is usually done as part of your initial implementation.

When action tables are located in the user data mart, you can easily populate the table from other data mart tables, make joins, and perform similar database operations. However, you must ensure that you have permission to purge the action tables after each Response process run.

If your response logic is fairly simple (for example, if the action table is already populated with ETL routines and you only need to read the data from the table), then you may choose to locate the action table with the Campaign system tables.

The Campaign system tables include a sample action table for the Customer audience level, called `UA_ActionCustomer`, which administrators can customize as needed. The sample table contains several columns which you can use in Response tracking, such as the `CustomerId`, `Response` and `Tracking` codes.

## Sample action table (`UA_ActionCustomer`)

The Campaign system tables include a sample action table for the Customer audience level, called `UA_ActionCustomer`. The fields in this table are intended as examples of fields that may be useful for generating response history. Administrators can customize the table as needed. Typically, each audience level in Campaign has its own action table, which is used for response tracking.

*Table 32. Sample `UA_ActionCustomer` table*

| Column Name                   | Data Type             | Length | Allow Nulls |
|-------------------------------|-----------------------|--------|-------------|
| <code>CustomerID</code>       | <code>bigint</code>   | 8      | No          |
| <code>ActionDateTime</code>   | <code>datetime</code> | 8      | No          |
| <code>ResponseChannel</code>  | <code>varchar</code>  | 16     | Yes         |
| <code>CampaignCode</code>     | <code>varchar</code>  | 32     | No          |
| <code>OfferCode</code>        | <code>varchar</code>  | 64     | No          |
| <code>CellCode</code>         | <code>varchar</code>  | 64     | No          |
| <code>TreatmentCode</code>    | <code>varchar</code>  | 64     | No          |
| <code>ProductID</code>        | <code>bigint</code>   | 8      | No          |
| <code>ResponseTypeCode</code> | <code>varchar</code>  | 64     | Yes         |

---

## Creating response history tables for new audience levels

When you create a new audience level, you must create a table in the Campaign system database to store response history for targets in that audience level.

When you create this table, you should also create an index on it to improve performance. For example, if you create the `INDIV_ResponseHistory` table for a new Individual audience level, you could create an index as follows:

```
INDEX XIE1INDIV_ResponseHistory ON INDIV_ResponseHistory (IndivID)
```

After you create the response history table for a new audience level, you must map it to the IBM Campaign system table for the audience level response history.

---

## Setting the number of days after an offer expires to record responses

The response history tables can record whether responses were received before or after the expiration date of the specific offer version. This functionality depends on the configuration property `allowResponseNDaysAfterExpiration`.

### Before you begin

To perform this task, you must have appropriate permissions to use Marketing Platform. For information, see the *Marketing Platform Administrator's Guide*.

### Procedure

- Choose `Settings > Configuration > Campaign > partitions > partition[n] > server > flowchartConfig > AllowResponseNDaysAfterExpiration`.
- Set the value to the desired number of days. The default value is 90 days.

## **Adding response types**

Response types are defined in the UA\_UsrResponseType table in the Campaign system database.

### **About this task**

Campaign includes a set of default response types. If the default response types are not sufficient, administrators can define additional response types . For more information, see “Default response types.”

### **Procedure**

1. Log in to the database management system that contains the Campaign system database.  
See the documentation for your database management system for detailed instructions on modifying data in tables.
2. Open the UA\_UsrResponseType table.
3. Add one row for each response type that you want to add:
  - a. Enter a unique ResponseTypeID.
  - b. Enter a Name.
  - c. Optionally, enter a Description.
  - d. Enter a unique ResponseTypeCode.
  - e. In the CountsAsResponse column, enter 1 if the type represents a successful response, 0 if it does not count as a response, or 2 if it represents a reject.  
The CountsAsResponse values are mutually exclusive for each response type. In other words, the same response type cannot be counted both as a response and a reject.
  - f. In the IsDefault column, enter 1 for the response type that you want to be the default. Ensure that only one row has the value 1 in this column. All other rows must have the value 0.
4. Save the table changes.
5. Remap the UA\_UsrResponseType system table.

### **What to do next**

**Note:** If eMessage offer integration is enabled and the response type originates in eMessage: To support ETL of eMessage response types, the response types must be defined in the eMessage UACE\_ResponseType table as well as the Campaign UA\_UsrResponseType table. Then the response types must be mapped in the UA\_RespTypeMapping table.

## **Default response types**

New installations of Campaign include the following response types, which are defined in the UA\_UsrResponseType table. Upgrades include all of the response types except 9, 10, 11, which must be added manually if you plan to use eMessage offer integration.

The ResponseTypeID and ResponseStatusCode must be unique. Do not change the supplied values for the default response types.

For IsDefault, only one row can be set to 1. All other rows must be 0.

The CountsAsResponse values are mutually exclusive for each response type. In other words, the same response type cannot be counted both as a response and a reject. Valid values are:

- 0 - does not count as a response
- 1 - counts as a positive response
- 2 - counts as a negative response

*Table 33. Default response types*

| Response-TypeID | Name               | Description | Response-StatusCode | Counts-AsResponse | IsDefault |
|-----------------|--------------------|-------------|---------------------|-------------------|-----------|
| 1               | Explore            | <NULL>      | EXP                 | 0                 | 0         |
| 2               | Consider           | <NULL>      | CON                 | 0                 | 0         |
| 3               | Commit             | <NULL>      | CMT                 | 1                 | 0         |
| 4               | Fulfill            | <NULL>      | FFL                 | 0                 | 0         |
| 5               | Use                | <NULL>      | USE                 | 0                 | 0         |
| 6               | Unsubscribe        | <NULL>      | USB                 | 0                 | 0         |
| 7               | Unknown            | <NULL>      | UKN                 | 1                 | 1         |
| 8               | Reject             | <NULL>      | RJT                 | 2                 | 0         |
| 9               | Link Click*        | <NULL>      | LCL                 | 1                 | 0         |
| 10              | Landing Page*      | <NULL>      | LPA                 | 1                 | 0         |
| 11              | SMS Reply Message* | <NULL>      | SRE                 | 1                 | 0         |

\*Response Types 9, 10, and 11 are intended for eMessage offer integration. For new installations, these response types are added by default. Upgrades must add these response types manually if eMessage offer integration will be used, then map them in UA\_RespTypeMapping. Note that Landing Page and SMS Reply Message are not populated by the ETL process at this time.

---

## Logging response history

To log response history, users configure the Response process. Then, when the flowchart is run, response history is written to the table(s) related to the audience-level(s) used in the flowchart.

For more information, see the *IBM Campaign User's Guide*.



---

## Chapter 9. Operational monitoring

The Operational Monitoring page lists the status of all active flowcharts and provides controls to suspend, resume, or stop flowchart runs.

Operational monitoring tracks Campaign flowcharts that are run from both the GUI (manual and scheduled runs) and the `unica_svradm` command-line utility. It does not keep track of session flowchart runs.

To view the Operational Monitoring page, you must have the Access monitoring page or Perform monitoring tasks security permission.

Only users with the Perform monitoring tasks permission are allowed to suspend, resume, or stop flowchart runs. This permission allows users to control all displayed flowcharts, regardless of the normal access rights the user has for each individual flowchart. Do not give this permission to users unless you intend to give them the right to suspend, resume, and stop any running flowchart.

---

## To configure operational monitoring

### About this task

**Note:** To complete this task, you must have appropriate permissions to use Marketing Platform. For information, see the *Marketing Platform Administrator's Guide*.

You must configure operational monitoring appropriately for your environment, including setting parameters for how long monitoring information is stored and displayed for historical flowchart runs.

On the Configuration page, set the properties in the Campaign > monitoring category as required. For information on the properties, see the context help or the *Marketing Platform Administrator's Guide*.

---

## To access the All Monitored Runs page

### About this task

**Note:** You must have appropriate permissions to access the Monitoring page. For more information, see the *Marketing Platform Administrator's Guide*.

Select Campaign > Monitoring. The All Monitored Runs page appears.

---

## Viewing the All Monitored Runs page

On the All Monitored Runs page, Campaign groups active flowcharts by the campaigns that they belong to.

The status for each flowchart is indicated two ways: in the **Status** column, and by the colored status indicator. The action buttons that are available for each flowchart depend on the flowchart's status.

For information about the colors and valid actions corresponding to each status, refer to the table in "Flowchart states and actions" on page 96.

**Note:** The action buttons are only available to you if you have the Perform monitoring tasks security permission.

---

## To sort the list of flowcharts on the All Monitored Runs page

By default, flowcharts are sorted in ascending order by campaign name. You can also sort the list of flowcharts by the **Status**, **Run By**, **Start Time**, or **End Time** column.

### About this task

To sort the list of flowcharts, click the column name by which you want to sort.

The direction of the arrow to the right indicates if the column is sorted in ascending or descending order:

- An up arrow indicates the column is sorted in ascending order.
- An down arrow indicates the column is sorted in descending order.

To reverse the sorting order, click the column name again.

**Note:** If you leave the All Monitored Runs page and return to it, the flowcharts are listed in the default sort order (ascending by campaign name).

## To view associated campaigns or flowcharts

From the All Monitored Runs page, you can open a flowchart or campaign summary. Blue underlining indicates that campaign or flowchart names are hypertext links.

### About this task

To view a campaign summary, click the name of the campaign, which appears to the left in the Campaign and Flowchart(s) column.

To view a flowchart in **Read Only** mode, click the name of the flowchart, which appears to the right of the campaign name, in italics.

## To refresh the All Monitored Runs page display

The Refresh feature allows you to update the contents of the All Monitored Runs page, to ensure that you are viewing current operational details.

### About this task

To refresh the All Monitored Runs page, click **Refresh** at the top right. The page refreshes with current data.

---

## Working with flowcharts through the All Monitored Runs page

**Note:** You must have permissions to work with flowcharts from the All Monitored Runs page.

If you have the **Perform monitoring tasks** security permission, you can perform the following actions on flowcharts on the All Monitored Runs page. The actions that you can perform on a flowchart depend on its current status.

**Note:** You can also Pause, Continue or Stop a flowchart from the Run menu on a flowchart page. The Pause and Continue actions are only available from the flowchart Run menu. For more details, see the *Campaign User's Guide*.

## To stop a running flowchart

You can perform the Stop action only on a running flowchart.

## Procedure

1. On the All Monitored Runs page, locate the flowchart that you want to stop. You see its status and the available action buttons.



2. Click the Stop button next to the flowchart status.

The flowchart stops. Its status on the All Monitored Runs page changes to **Stopped** and the status indicator color changes to red.

## To suspend a running flowchart

You can perform the Suspend action only on a running flowchart.

### About this task

When you Suspend a flowchart, the run process ends, and system resources are released. A placeholder remains so that you can resume running the flowchart at the point at which you suspended it. This is different from pausing a flowchart (from the flowchart Run menu). When you pause a flowchart, the process remains, and does not release system resources (such as memory).

## Procedure

1. On the All Monitored Runs page, locate the flowchart that you want to suspend. You see its status and the available action buttons.



2. Click the Suspend button next to the flowchart status.

The suspend process starts. The flowchart's status on the All Monitored Runs page changes to **Suspending** and the color of the status indicator changes to yellow. In **Suspending** status, you cannot perform any actions on a flowchart.

**Note:** It may take a while to successfully suspend a running flowchart, because it must wait until running process boxes reach a state where they can be safely saved and resumed.

When the suspend process completes, the flowchart's status changes to **Suspended**; the color of the status indicator remains yellow.

## To resume a suspended flowchart

You can resume a suspended flowchart. This restarts the flowchart and continues running it at the point at which you suspended it.

## Procedure

1. On the All Monitored Runs page, locate the suspended flowchart that you want to resume. You see its status and the available action buttons.



2. Click the Resume button next to the flowchart status.

The flowchart resumes running. Its status on the All Monitored Runs page changes to **Running** and the color of the status indicator changes to green.

## Operational monitoring references

This section contains the following reference information:

- “Flowchart states and actions” on page 96
- “Properties related to operational monitoring” on page 97

## Flowchart states and actions

This section describes the valid flowchart states and the actions that are available for each status, as shown on the All Monitored Runs page.

The flowchart status reflects the status of the last run.

**Note:** If a user runs a flowchart and one branch succeeds, but another process in that flowchart but not in that branch has failed, the flowchart status is **Failed**.

*Table 34. Flowchart states and actions*

| Status (Status Indicator Color) | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Valid Actions                                                        |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Running<br>(Green)              | The flowchart is running.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"><li>Suspend</li><li>Stop</li></ul> |
| Paused<br>(Yellow)              | <p>The flowchart was paused during running from the flowchart Run menu. (You cannot pause a flowchart from the Monitoring page.)</p> <p>When a flowchart is paused, the process remains intact but stops processing, guaranteeing that no work is lost when the flowchart run is continued. Note that with the Pause action, system resources are not released (CPU utilization stops, but memory is not freed).</p> <p>You can continue running a paused flowchart from the flowchart Run menu.</p> <p>For details about pausing and continuing a flowchart run, see the <i>Campaign User's Guide</i>.</p>                                                             | None from the Monitoring page (Run>Continue from the flowchart)      |
| Suspending<br>(Yellow)          | The flowchart "Suspend" action has been initiated from the Monitoring page and the flowchart is transitioning to this status.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | None                                                                 |
| Suspended<br>(Yellow)           | <p>The flowchart Suspend action has completed and the flowchart is in a suspended state. The process is shut down and system resources have been released; a placeholder remains to enable restarting the flowchart run at the point at which it was suspended.</p> <p>You can resume running a suspended flowchart using the Resume button on the Monitoring page.</p> <p><b>Note:</b> Running process boxes that can be rerun from the beginning, resulting in the same net behavior, are immediately stopped when the Suspend command is issued, and any partially completed work is lost. These process boxes will be re-run when the flowchart run is resumed.</p> | <ul style="list-style-type: none"><li>Resume</li></ul>               |
| Succeeded<br>(Light blue)       | The flowchart run completed successfully, without any errors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | None                                                                 |
| Stopped<br>(Red)                | The flowchart run was stopped either by a user from the flowchart Run menu or due to an error (that is, one or more process boxes in the flowchart encountered an error). For details about stopping a flowchart from the flowchart Run menu, see the <i>Campaign User's Guide</i> .                                                                                                                                                                                                                                                                                                                                                                                    | None                                                                 |

*Table 34. Flowchart states and actions (continued)*

| Status (Status Indicator Color) | Description                                                                                                           | Valid Actions |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------|
| Failed<br>(Red)                 | The run failed due an unhandled error or a server error (that is., the flowchart server process exited unexpectedly). | None          |

## Properties related to operational monitoring

Use the properties in the Campaign > monitoring category on the Marketing Platform Configuration page to modify the behavior of operational monitoring. For information about the properties, see the context help or the *IBM Marketing Platform Administrator's Guide*.

- cacheCleanupInterval
- cacheRunCompleteTime
- monitorEnabled
- serverURL
- monitorEnabledForInteract
- protocol
- port

## All Monitored Runs page icons

The All Monitored Runs page uses the following icons



The icons, left to right, are described in the following table.

*Table 35. Icons used on the All Monitored Runs page*

| Icon Name       | Description                                                                                                                      |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------|
| Print this Item | Select one or more monitored runs by clicking the check box next to each item, then click this icon to print the selected items. |
| Refresh         | Click this icon to refresh the list of monitored runs on the page.                                                               |



---

## Chapter 10. Dimension hierarchy administration

A dimension hierarchy is a data construct that groups data into bins based on value ranges. Dimension hierarchies are the basis for a variety of reports.

**Note:** When dimension hierarchies are used to create cubes, use the Cube process to create dynamic data cubes from a flowchart in the Sessions area of the application.

---

### What is a dimension hierarchy?

A dimension hierarchy is a data construct used to group data into bins based on value ranges. A dimension hierarchy can contain multiple levels, each of which has its own set of bins. The bins in each lower level must roll up neatly into bins in higher levels.

For example, the Age dimension hierarchy could have two levels, Lowest level and Rollups. Customers are grouped in bins at each level:

**Lowest level:** (21-25), (26-30), (31-35), (36-45), (45-59), (60+)

**Rollups:** Young (21-35), Middle (36-59), Older (60+)

**Note:** You cannot split a lower level bin (for example, bin 26-30 above) and divide individuals aged 26-27 into "young" and 28-30 into "middle", when rolling up to a higher level. Any single bin in a lower level must fall completely within a higher level bin. If you wanted to actually define "young" as those aged 21-27, you would need to create separate bins (for example, 26-27 and 28-30) in the lower level so they could roll up into "young" and "middle," respectively.

Other commonly specified dimension hierarchies are time, geography, product, department, and distribution channel. However, you can create any kind of dimension hierarchy that relates to your business or campaign.

---

### Why use dimension hierarchies?

As the building blocks of cubes, dimension hierarchies are the basis for a variety of reports that can be used for data exploration, quick counts, or as a basis for targeting campaigns.

Cubes can pre-aggregate counts or simple calculations (sum, min, max, mean, standard deviation) of numeric fields (for example, total sales across all products at increasing aggregation levels, cross-tabular analysis of expenses versus sales by geography, and so forth).

Dimension hierarchies are also available as a means of selecting directly from strategic segments (without requiring any cubes to be built or to work from a cross-tab report).

Campaign supports:

- Dimensions that are comprised of an unlimited number of levels and elements
- Data points built as input to customer analytic reporting and visual selection
- Rollups into unlimited number of categories to support drill-down capability

---

### About dimension hierarchies and cubes

You use dimension hierarchies to create dynamic data cubes, precalculated two- or three-dimensional aggregations of customer data built on a strategic segment.

Cubes are used for data exploration or visual selection, as you have the ability to drill through the data and use the resulting set of customers as a new cell in a flowchart.

For details about cubes, see the *IBM Campaign User's Guide*.

---

## About dimension hierarchies and database tables

When you create a dimension hierarchy in Campaign, you map it to a table in a database or a flat file.

The table must contain columns for:

- The dimension name
- Each level in the dimension hierarchy
- The raw SQL or IBM EMM expression that defines the audience entities in the bin
- The data source

For example, the Age dimension hierarchy has three levels. The first level is All ages, followed by the two levels shown in the two levels of the following list:

- Under 30
  - Under 20
  - 20 to 25
  - 26 to 30
- 30 to 50
  - 30 to 40
  - 41 to 50
- Over 50
  - 51 to 60
  - Over 60

This dimension hierarchy is based on the following database table:

*Table 36. Dimension hierarchy database table*

| Dimension-Name | Dim1Name | Dim2Name      | Dim3Name          | Expression            | Datasource    |
|----------------|----------|---------------|-------------------|-----------------------|---------------|
| MemberAge      | All Ages | Under 30      | < 20 Years Old    | age < 20              | Your datamart |
| MemberAge      | All Ages | Under 30      | 20 - 25 Years Old | age between 20 and 25 | Your datamart |
| MemberAge      | All Ages | Under 30      | 26 - 30 Years Old | age between 26 and 30 | Your datamart |
| MemberAge      | All Ages | 30 - 50 Years | 30 - 40 Years Old | age between 31 and 40 | Your datamart |
| MemberAge      | All Ages | 30 - 50 Years | 41 - 50 Years Old | age between 41 and 50 | Your datamart |
| MemberAge      | All Ages | Over 50       | 51 - 60 Years Old | age between 51 and 60 | Your datamart |
| MemberAge      | All Ages | Over 50       | Over 60           | age > 60              | Your datamart |

## Dimension hierarchy design guidelines

You should consider the following things when designing dimension hierarchies.

- How dimensions relate to each other (for example, Age/Geography/ Timespan).
- Level of detail for each dimension and cube.
- Dimensions are not limited to a single cube; they can be used in many cubes.
- Dimensions must roll up cleanly across boundaries, so elements must be mutually exclusive and not overlap.

## Managing dimension hierarchies

A dimension hierarchy is a data construct that groups data into bins based on value ranges. Dimension hierarchies are the basis for a variety of reports. Administrators can create and edit dimension hierarchies.

### Creating dimension hierarchies

After you define a dimension hierarchy in an external table or flat file, you can create dimension hierarchies in IBM Campaign.

#### Before you begin

Before you can create a dimension hierarchy in IBM Campaign, you or an IBM consulting team must create the dimension hierarchy definition in a database table in your data mart or in a delimited or fixed-width flat file.

This is an operation external to Campaign.

The lowest level of the dimension hierarchy must use either raw SQL or a pure IBM EMM expression (no custom macros, user variables, or derived fields) to define the individual audience ID membership for each bin.

#### Procedure

Follow these steps to create a dimension hierarchy in IBM Campaign.

1. Use one of these methods to open the Dimension Hierarchies window:

- When editing a flowchart, open the **Admin** menu  and select **Dimension Hierarchies**.
- From the Campaign Settings page, click **Manage Dimension Hierarchies**.

2. In the Dimension Hierarchies window, click **New Dimension**.

3. Enter the details for the new dimension hierarchy:

- The **Dimension Name**
- A **Description**
- The **Number of Levels** in the dimension hierarchy. This should correspond to the hierarchical levels in the table to which you are mapping this dimension hierarchy.
- If you will use this dimension hierarchy as the basis for a cube, ensure that **Elements are Mutually Exclusive** is checked (by default, this option is checked). Otherwise, you will receive an error when you use this dimension hierarchy to create a cube because the elements cannot overlap in a cube.

If you are creating a dimension hierarchy purely for use in selecting from a strategic segment, then it is permissible to disable this option and create overlapping definitions. It is recommended, however, that you create non-overlapping bins so that dimension hierarchies you create can be freely used both for building cubes as well as with strategic segments.

4. Click **Map Table**.

The Edit Table Definition window opens.

5. To map your dimension hierarchy table to either a table in the database or a flat file containing the dimension hierarchy definition, follow the instructions in “To map a base record table to an existing database table” on page 32.
- After you finish mapping your dimension hierarchy, you return to the Edit Dimension window, which now includes details for the new dimension hierarchy.
6. Click **OK**.
- You return to the Dimensions window.
7. (Optional but recommended) You can store a dimension hierarchy for future use in a table catalog by clicking **Save**. If you store a dimension hierarchy you can retrieve it later for another use or share it with other users rather than recreating it.

## Loading stored dimension hierarchies

Dimension hierarchies are stored in table catalogs with any other mapped tables in the flowchart.

### Procedure

1. Use one of these methods to open the Dimension Hierarchies window:
  - When editing a flowchart, open the **Admin** menu  and select **Dimension hierarchies**.
  - From the Campaign Settings page, click **Manage dimension hierarchies**.
2. Click **Load**.
3. Select the table catalog containing the dimension hierarchies that you want to load.
4. Click **Load catalog**.

## Editing dimension hierarchies

You can change a dimension hierarchy name, description, levels, and table mapping.

### Procedure

1. Use one of these methods to open the Dimension Hierarchies window:
  - When editing a flowchart, open the **Admin** menu  and select **Dimension hierarchies**.
  - From the Campaign Settings page, click **Manage dimension hierarchies**.
2. You may need to load the dimension hierarchy that you want to edit.
3. Select the dimension hierarchy that you want to edit.
4. Click **Edit**.
5. Modify the following details:
  - The **Dimension name**
  - A **Description**
  - The **Number of levels** in the dimension hierarchy. This should correspond to the hierarchical levels in the database table to which you are mapping this dimension hierarchy.
  - If you are using this dimension hierarchy as the basis for a cube, ensure that **Elements are mutually exclusive** is checked (by default, this option is checked). Otherwise, you will receive an error when you use this dimension hierarchy to create a cube because the elements cannot overlap in a cube.
6. To modify the table mapping, click **Map table**.  
The Edit Table Definition window opens.
7. Follow the instructions in “To map a base record table to an existing database table” on page 32.
8. After you map the dimension, you return to the Edit Dimension window, which now includes details for the new dimension hierarchy.
9. Click **OK**.

- You return to the Dimensions window.
10. (Optional but recommended) You can store your changes to any dimension hierarchies for future use in a table catalog by clicking **Save**.

## Updating dimension hierarchies

If the underlying data changes, you must manually update dimension hierarchies.

### About this task

IBM Campaign does not support automatic updates of dimension hierarchies. If the underlying data changes, you must manually update your dimensions.

**Note:** Cubes are comprised of dimension hierarchies which are based on strategic segments, so you must update cubes whenever you update strategic segments.

### Procedure

1. Use one of these methods to open the Dimension Hierarchies window:
  - When editing a flowchart, open the Admin menu  and select **Dimension hierarchies**.
  - From the Campaign Settings page, click **Manage dimension hierarchies**.
2. You may need to load the dimension hierarchy that you want to edit.
3. Select the table catalog containing the dimension hierarchies that you want to update.
4. Click **Update**.

## Removing dimension hierarchies

Removing a dimension hierarchy makes it no longer available to strategic segments. Any cubes based on the dimension hierarchy will become unconfigured if they use a deleted dimension hierarchy.

### About this task

If you delete a dimension hierarchy from a table catalog, it does not affect any existing flowcharts because those flowcharts contain a copy of the dimension hierarchy definition.

### Procedure

1. Use one of these methods to open the Dimension Hierarchies window:
  - When editing a flowchart, open the Admin menu  and select **Dimension Hierarchies**.
  - From the Campaign Settings page, click **Manage dimension hierarchies**.
2. You may need to load the dimension hierarchy that you want to update.
3. Select the dimension hierarchies you want to remove.
4. Click **Remove**.

You are prompted to confirm the removal.



---

## Chapter 11. Trigger administration

IBM Campaign allows you to define inbound and outbound triggers that can be used in all flowcharts in a partition.

**Note:** For performance advantages, use the IBM EMM Scheduler to send triggers to Campaign. To learn more about the Scheduler, see the *IBM Marketing Platform Administrator's Guide*.

---

### What is an inbound trigger?

An inbound trigger is a message that is broadcast to one or more campaigns. You can configure a flowchart to "listen" for a particular trigger to start the execution of one or more processes.

Third-party systems typically send the trigger based on the occurrence of some external event.

### Why use an inbound trigger?

Following are examples of events that might cause an inbound trigger to start a process in Campaign:

- A database update triggers the recomputation of all strategic segments (for example, high, medium, and low value customer classifications based on the most recent purchase activity).
- A predictive model updating its scores in the database triggers an acquisition campaign, which is waiting for the latest scores, to run.
- A third-party scheduling tool is used to schedule and trigger the execution of flowcharts.
- The run completion of Optimization session triggers the execution of the participating campaigns to retrieve and process their optimized results.

### Inbound triggers and the Schedule process

When configured to do so, the Schedule process listens for inbound triggers and executes when one is broadcast.

### What is broadcasting?

Broadcasting is the process of notifying all flowcharts in Campaign, specific campaigns, or specific flowcharts that an inbound trigger has executed. Schedule processes configured to listen for that inbound trigger then execute.

To send an inbound trigger to a campaign or flowchart, you must broadcast the triggers to Campaign using the trigger utility, `CAMPAIGN_HOME/bin/unica_actrg.exe`.

---

### What is an outbound trigger?

An outbound trigger is the execution of a command, batch file, or script that takes place after a flowchart or process is run. You can define triggers to perform virtually any action, such as opening an application, sending an email, or running a program.

Campaign can execute an outbound trigger when a Schedule, Call List, or Mail List process executes. For example, when a Call List process completes, an outbound trigger can send an automatic email informing a manager that a list of contacts is ready.

**Note:** Triggers execute on completion of test runs as well as of production runs.

Campaign can also automatically execute an outbound trigger when a flowchart runs. You can configure different triggers for when the flowchart completes successfully, or fails.

An outbound trigger can be synchronous or asynchronous.

## Synchronous outbound triggers

When Campaign runs an outbound trigger synchronously, the process that called it waits for the executed command to complete and return with a success or failure status.

In other words, the flowchart does not continue running until the results of the trigger are returned. If the trigger fails, as indicated by a non-zero return value, the process box does not continue processing and indicates an error (with a red X) and an appropriate error message.

Synchronous execution is useful when the flowchart is waiting for an external process to complete its work before continuing. For example, a synchronous outbound trigger could run third-party predictive model scores in real-time, and the flowchart would wait until it completed before selecting from the updated model scores.

To make an outbound trigger synchronous, put a question mark (?) after the trigger name when you specify the trigger in the process configuration. For example:

```
EmailUpdate ?
```

## Asynchronous outbound triggers

When an asynchronous outbound trigger executes, the flowchart processing continues immediately; the process that called the trigger does not wait for it to succeed or fail.

To make an outbound trigger asynchronous, you do not have to add a termination character. However, to ensure that it is explicitly understood that the trigger is asynchronous, you can put an ampersand (&) after the trigger name when you specify the trigger in the process configuration. For example:

```
EmailUpdate &
```

## Why use an outbound trigger?

Outbound triggers may be useful in a variety of cases where you want to execute an action related to, but external to, a campaign.

Some typical examples of useful outbound triggers include:

- Sending an email notification upon completion of a campaign flowchart;
- Sending an email notification or performing some other task if a flowchart fails;
- Running a third-party modeling tool, such as SAS, to generate real-time results inline with the flowchart logic;
- Running a Unix shell script to send an output file by FTP after the file has been created;
- Launching a customer database update;
- Launching or triggering another flowchart.

## Return values for outbound triggers

Programs executed by an outbound trigger should return 0 on success, and a non-zero value on failure.

## How are triggers defined?

You define triggers when editing a flowchart. A trigger that you define in one flowchart is available to all flowcharts in the same partition.

The executable file for a trigger must be stored in the `CAMPAIGN_HOME/partitions/partition_name` directory. You can create a subdirectory, `triggers`, in this location, or use other subfolders as desired.

## Creating and managing triggers

You can create inbound and outbound triggers and organize them in folders.

### Creating triggers

You can define inbound and outbound triggers that can be used in all flowcharts in a partition.

#### Before you begin

You must have permissions to create triggers.

#### Procedure

1. When editing a flowchart, open the **Options** menu  and select **Stored triggers**.  
The Stored Trigger Definitions window opens.
2. Click **New Item**.  
The data fields for the new trigger appear on the right of the window.
3. Optionally, select a folder to save the trigger to in the **Save under** list.  
**Note:** The folder location governs which users can access the trigger, based on the folder's security policy.
4. Enter a name for the trigger in the **Name** field.
  - You cannot use spaces in the string, but you can use underscores (\_).
  - This name must be unique within the folder where you save it.
5. If you are creating a trigger in the top-level folder, select a security policy, or keep the default.
6. Optionally, enter a description of the trigger in the **Note** field.  
You can provide a free-form text description of the trigger for documentation purposes. You also may want to keep a modification history of who modified the trigger, when, and what changes were made.
7. In the **Command** field, enter the path relative to the current partition root and file-name of the executable file on the IBM Campaign server. You can click **Browse** to select an executable file from within the current partition.  
If you are creating an outbound trigger, to make it synchronous, terminate the command with a question mark (?).  
To make the trigger asynchronous, do not terminate the command with a special character, or use an ampersand (&).
8. Click **Save and Close**

### Editing or moving triggers

You can change the name and descriptive note for a trigger or move it to another folder. If you change a trigger name, any processes referring to that trigger will become unconfigured and will be unable to run. You must edit each process to refer to the new trigger name.

## Before you begin

You must have permissions to edit or move triggers.

## Procedure

1. When editing a flowchart, open the **Options** menu  and select **Stored triggers**.  
The Stored Trigger Definitions window opens, displaying all triggers defined in the current IBM Campaign partition.
  2. Locate and select the trigger to edit in the **Items list**.
  3. Click **Edit/Move**.  
The data fields for the trigger appear on the right of the window.
  4. Optionally, select a different folder in the **Save under** list.
- Note:** The folder location governs which users can access the trigger, based on the folder's security policy.
5. Optionally, change the trigger name in the **Name** field.
    - You cannot use spaces in the string, but you can use underscores (\_).
    - This name must be unique within the folder where you save it.
  6. If you are modifying a trigger in the top-level folder, or moving a trigger to the top-level folder, select a security policy, or keep the default.
  7. Optionally, modify the description of the trigger in the **Note** field.
  8. Optionally, in the **Command** field, modify the path relative to the current partition root and file-name of the executable file on the Campaign server. You can click **Browse** to select an executable file from within the current partition.  
If you are creating an outbound trigger, to make it synchronous, terminate the command with a question mark (?).  
To make the trigger asynchronous, do not terminate the command with a special character, or use an ampersand (&).
  9. Click **Save** and **Close**.

## What to do next

If you renamed a trigger, edit each process to refer to the new trigger name.

## Deleting triggers

If you delete a trigger, any processes that refer to that trigger will become unconfigured and unable to run. You must edit each process to remove the reference to the deleted trigger.

## Before you begin

**Note:** You must have permissions to delete triggers.

## Procedure

1. When editing a flowchart, open the **Options** menu  and select **Stored triggers**.
2. Locate and select a trigger in the **Items list**. The list shows all triggers that are defined in the current partition.
3. Click **Remove**.
4. Click **OK** to confirm the deletion.
5. Click **Close**.

## What to do next

Edit each process to remove the reference to the deleted trigger.

## Organizing triggers in folders

You can use folders to organize triggers.

### Before you begin

You must have permissions to create folders for triggers.

### Procedure

1. Open a flowchart for editing.
2. Open the Options menu  and select **Stored triggers**.
3. Click **New folder**.
4. Name the folder and enter a descriptive note.
5. In the **Create under** list, select the folder in which to create the new folder, or select **None** to create a top-level folder.
6. If you are creating a top-level folder, select a security policy.  
A sub-folder automatically inherits its security policy from its parent folder.
7. Click **Save**.

## Moving trigger folders

You can move trigger folders. You must have permissions to move trigger folders.

### Procedure

1. When you edit a flowchart, open the Options menu  and select **Stored triggers**.
2. Select a folder in the left pane.
3. Click **Edit/Move**.
4. In the **Create under** list, select the folder under which you want to move the selected folder, or select **None** to make the folder a top-level folder.
5. If you are moving the folder to the top level, select a security policy.  
A subfolder automatically inherits its security policy from its parent folder.
6. Click **Save**.

## Editing trigger folders

You can change the name and descriptive note for a trigger folder. You must have permissions to edit trigger folders.

### Procedure

1. When you edit a flowchart, open the Options menu  and select **Stored triggers**.
2. Select a folder in the left pane.
3. Click **Edit/Move**.
4. Change the **Name** and **Note** for the folder.
5. Click **Save**.

## Deleting trigger folders

You can delete trigger folders.

## Before you begin

You must have permissions to delete trigger folders.

### Procedure

1. When editing a flowchart, open the **Options** menu  and select **Stored triggers**.
2. Select a folder in the left pane.
3. Click **Remove**.  
You are prompted to confirm the deletion.
4. Click **OK**.

---

## Setting up outbound triggers

You must have permissions to use triggers in a flowchart.

### Setting up a process to execute an outbound trigger

You can have outbound triggers execute when one of the following processes runs:

- Schedule
- Call List
- Mail List

In the **Schedule** process, you specify the trigger(s) to execute in the **Schedule** tab.

In the Call List and Mail List processes, you specify the trigger(s) to execute in the **Fulfillment** tab.

For information on configuring these processes, see the *Campaign User's Guide*.

### Setting up a flowchart to execute an outbound trigger on success

You can set up a flowchart to execute selected triggers when the flowchart runs successfully, on both production and test runs.

### Procedure

1. When you edit a flowchart, click the **Admin** menu  and select **Advanced settings**.  
The Advanced Settings window opens.
2. Select the trigger to execute in the **Send trigger(s) on flowchart success**.  
To use multiple triggers, enter the name of each trigger, separated by a comma and a space.
3. Click **OK**.

### Setting up a flowchart to execute an outbound trigger on failure

You can set up a flowchart to execute selected triggers when the flowchart encounters an error when running, on both production and test runs.

### Procedure

1. When you edit a flowchart, click the **Admin** icon  and select **Advanced settings**.  
The Advanced Settings window opens.
2. Select the trigger to execute in the **Send trigger(s) on flowchart run error**.  
To use multiple triggers, enter the name of each trigger, separated by a comma and a space.
3. Click **OK**.

## Setting up inbound triggers

This section contains the following:

- “To set up inbound triggers”
- “Configuring the Schedule process to run with an inbound trigger”
- “To broadcast a trigger to all flowcharts of a campaign”
- “To broadcast a trigger to a flowchart” on page 112
- “To broadcast a trigger to all campaigns” on page 112

**Note:** You must have permissions to use triggers in a flowchart.

### To set up inbound triggers

Use this procedure to set up inbound triggers.

#### Procedure

1. Create the triggers within a flowchart, as described in “Creating triggers” on page 107.
2. Configure the Schedule process in any flowcharts you want to run when receiving the inbound trigger, as described in “Configuring the Schedule process to run with an inbound trigger.”
3. Use the Campaign Trigger Utility `unica_actrg` (in the folder `Campaign_home/bin`) to broadcast triggers, as described in:
  - “To broadcast a trigger to all flowcharts of a campaign”
  - “To broadcast a trigger to a flowchart” on page 112
  - “To broadcast a trigger to all campaigns” on page 112

### Configuring the Schedule process to run with an inbound trigger

To use an inbound trigger to run a flowchart, that flowchart must start with a Schedule process that is configured as described here.

- In the **Schedule to run** list, select **Custom run**.
- Check **Run on trigger(s)**.
- In the **Run on trigger(s)** field, enter the names of triggers that when broadcast will run the flowchart. Separate multiple triggers with a comma and a space.

The Schedule process may also be configured to execute based on other conditions. Configuring the trigger condition will additionally execute the subsequent processes when the specified triggers are received.

**Important:** For a flowchart to run upon receipt of an inbound trigger, it must have a Schedule process configured as described above, and it must be running. Running the flowchart puts the flowchart into a “waiting,” or “listening”, state so that the flowchart is ready to execute when the trigger is received. A flowchart that is not running when the trigger is broadcast will not execute.

For more information about configuring the Schedule process, see the *Campaign User’s Guide*.

### To broadcast a trigger to all flowcharts of a campaign

#### About this task

Run the Campaign Trigger Utility with the following syntax:

`unica_actrg campaign_code trigger_name`

For example:

```
unica_actrg C003 web_hit
```

If a flowchart in the specified campaign starts with a Schedule process configured to run when receiving a broadcast based on the `web_hit` inbound trigger, that flowchart runs when the broadcast trigger is received.

## To broadcast a trigger to a flowchart

### About this task

Run the Campaign Trigger Utility with the following syntax:

```
unica_actrg -n flowchart_name trigger_name
```

For example:

```
unica_actrg -n account_inquiry_flowchart web_hit
```

The trigger is broadcast only to all running flowcharts with the specified name. If the flowchart of the specified name starts with a Schedule process configured to run when receiving a broadcast based on the `web_hit` inbound trigger, that flowchart runs when the broadcast trigger is received.

## To broadcast a trigger to all campaigns

### About this task

Run the Campaign Trigger Utility with the following syntax:

```
unica_actrg * trigger_name
```

For example:

```
unica_actrg * web_hit
```

The trigger is broadcast to all flowcharts in all campaigns. If any flowchart starts with a Schedule process configured to run when receiving a broadcast based on the `web_hit` inbound trigger, that flowchart runs when the broadcast trigger is received.

**Note:** On UNIX servers, the asterisk must either be escaped (\\*) or enclosed in double quotation marks ("\*").

---

## Setting up the trigger utility on a remote Windows machine

### About this task

You can configure a Windows machine for sending triggers to a Campaign installation on UNIX. Follow these steps to set up the `unica_actrg` utility and required files on a remote Windows machine:

### Procedure

1. Obtain the required files.

You can copy the files from another Campaign installation on Windows, or install Campaign to obtain the files.

For a list of required files, see “`unica_actrg` utility: required files” on page 113. For information on installing Campaign, see the installation documentation.

If you run the installer to obtain the trigger utility files and you want to remove the unnecessary files, copy the files required for the trigger utility to another directory, then uninstall Campaign. For information on uninstalling Campaign, see the *IBM Campaign Installation Guide*.

2. Open a command prompt on the remote Windows machine.
3. If it is not already set, set the `CAMPAIGN_HOME` environment variable on the remote Windows machine.  
For example:  

```
set CAMPAIGN_HOME=C:\Unica\Campaign
```

## What to do next

When you run `unica_actrg.exe`, specify the port and server name of the machine where the Campaign installation is located.

## **unica\_actrg utility: required files**

The following files are required for executing the Campaign trigger utility (`unica_actrg`) on a remote Windows machine:

*Table 37. Required files for unica\_actrg utility*

| Directory                               | File name                                                                                                                                                                                             |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>&lt;CAMPAIGN_HOME&gt;\bin</code>  | <code>iconv.dll</code><br><code>intl.dll</code><br><code>libleay32.dll</code><br><code>ssleay32.dll</code><br><code>tls4d.dll</code><br><code>unica_actrg.exe</code><br><code>xerces-c_1_4.dll</code> |
| <code>&lt;CAMPAIGN_HOME&gt;\conf</code> | <code>config.xml</code>                                                                                                                                                                               |

---

## Reference information for trigger administration

References in this section include:

- “Tokens supported by triggers”
- “Campaign trigger utility options” on page 114
- “Campaign trigger utility syntax” on page 114

## Tokens supported by triggers

Tokens can be used in the command line of an outbound trigger to pass specific information from the running flowchart.

The following table lists the tokens supported by triggers and the processes where specific tokens are available.

*Table 38. Tokens supported by triggers*

| Token                       | Description                                              | Where Used                                |
|-----------------------------|----------------------------------------------------------|-------------------------------------------|
| <code>&lt;AMUSER&gt;</code> | The IBM EMM user name of the user running the flowchart. | Processes that support outbound triggers. |

Table 38. Tokens supported by triggers (continued)

| Token               | Description                                                                                                                                                                                                                                                   | Where Used                                                               |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <CAMPCODE>          | The campaign code associated with the current campaign.                                                                                                                                                                                                       | Processes that support triggers, trigger on failure, trigger on success. |
| <CONTACTLIST>       | Contact list specified in a contact process.<br><br>If the Contact List is written to a file, the appropriate full path name and file name replace the trigger token.<br><br>If the Contact List is written to a database table, the token is simply removed. | Call list and Mail list processes.                                       |
| <CONTACTLOG>        | The log of the particular contact process.<br><br>When the Log is written to a file, the appropriate full path name and file name replace the trigger token.                                                                                                  | Call list and Mail list processes.                                       |
| <FLOWCHARTFILENAME> | Full path name of a flowchart's .ses file                                                                                                                                                                                                                     | Processes that support outbound triggers.                                |
| <IXUSER>            | The user name of the Distributed Marketing user.                                                                                                                                                                                                              | Processes that support triggers, trigger on failure, trigger on success. |
| <OUTPUTTEMPTABLE>   | A token for use in raw SQL in pre- and post-processing under the Advanced window to create a temp table. For example:Create <OUTPUTTEMPTABLE> as SELECT CustIDs from CustomerTable WHERE ...                                                                  | Select process.                                                          |
| <OWNER>             | The Marketing Platform security user name of the user who created the flowchart.                                                                                                                                                                              | Processes that support triggers, trigger on failure, trigger on success. |
| <PROCESSNAME>       | The name of the current process box.                                                                                                                                                                                                                          | Processes that support triggers.                                         |
| <PROCESSID>         | The ID of the current process box.                                                                                                                                                                                                                            | Processes that support triggers.                                         |
| <SESSIONID>         | The ID of the current flowchart.                                                                                                                                                                                                                              | Processes that support triggers, trigger on failure, trigger on success. |
| <SESSIONNAME>       | The name of the current flowchart.                                                                                                                                                                                                                            | Processes that support triggers, trigger on failure, trigger on success. |
| <UserVar.>          | Any user variable value. The user variable must be defined in current flowchart.                                                                                                                                                                              | Processes that support triggers, trigger on failure, trigger on success. |

## Campaign trigger utility syntax

```
[-p <port>] [-s <server_name>] [-v] [<campaign_code> | -n "<flowchart_name>"] "<trigger1>"<trigger2>"...
```

## Campaign trigger utility options

The unica\_actrg utility supports the following options.

Table 39. Campaign trigger utility options

| Parameter        | Use                                               |
|------------------|---------------------------------------------------|
| -p <port>        | The port that you want to use to run the utility. |
| -s <server_name> | The name of the Campaign server.                  |

Table 39. Campaign trigger utility options (continued)

| Parameter                        | Use                                                                                                                                                                                                                                |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -v                               | Reports the version of the Campaign Trigger Utility.                                                                                                                                                                               |
| <campaign_code>                  | The identifier of the campaign that contains all the flowcharts that you want to run. This parameter cannot be used with the -n "<flowchart_name>" parameter.                                                                      |
| -n "<flowchart_name>"            | The name of the flowchart that you want to run. Because flowchart names are not necessarily unique, all flowcharts with this name receive the broadcast trigger. This parameter cannot be used with the <campaign_code> parameter. |
| "<trigger1>"<br>"<trigger2>" ... | The name of the trigger you want to use. You must specify at least one trigger. You can optionally specify multiple triggers, separated by spaces.                                                                                 |



---

## Chapter 12. Logging administration

The IBM Campaign application generates log files to record information. By default, most log files are located in *Campaign\_home\logs*. Partition-specific log files are located in *Campaign\_home\partitions\partition\_name\logs*.

---

### The Campaign web application log

The Campaign web log file contains events generated by the Campaign web application.

The log is in a file called *campaignweb.log*, located in the *Campaign\_home/logs* directory by default.

Depending on the system's logging settings, the *Campaign\_home/log* directory may contain multiple historical Campaign web application logs, each ending with an extension number, for example *campaignweb.log.1*, *campaignweb.log.2*, and so on.

You can configure Campaign web application logging properties in the *campaign\_log4j.properties* file, located in *Campaign\_home/conf* directory by default.

### To configure Campaign web application logging

#### Procedure

1. Locate the file specified by the *applications>Campaign>logging>* property. By default, the file is *Campaign\_home/conf/campaign\_log4j.properties*.
2. Use the comments within this file to change the web application logging settings.
3. Save the file and restart the web application.

### To change the file name and location of the Campaign web application log

#### About this task

**Note:** To complete this task, you must have appropriate permissions to use Marketing Platform. For information, see the *Marketing Platform Administrator's Guide*.

On the Configuration page, modify the value of the *log4jConfig* property in the *Campaign > logging* category to specify location and name for the file used to define the properties of the Campaign web application log.

---

### The Campaign and eMessage ETL log file

The *ETL.log* file records events generated by the ETL process that coordinates eMessage offer integration with Campaign. The default file location is *Campaign\_home/logs/ETL.log*.

The Campaign ETL process extracts, transforms, and loads offer response data from the eMessage tracking tables into the Campaign contact and response history tables. The ETL log file records the success, failure, and other statuses of events related to envelopes, treatments, and responses.

To adjust ETL logging behavior, modify the logging properties in the *campaign\_log4j.properties* file. This is the same properties file that is used to configure the Campaign web application log file. The location of the properties file is specified by **Settings > Configuration > Campaign > Logging**. The default location is *Campaign\_home/conf*.

When the ETL log file size grows beyond 10MB, the ETL log file is rotated in the same way as the Campaign web application log file. A number is appended to each successive log file, such as ETL.log.1, ETL.log.2, and so on. To adjust this behavior, modify the log4j properties file.

---

## The log4j logging utility

The Campaign web application uses the Apache log4j utility for logging configuration, debugging, and error information.

### To configure logging in log4j

#### About this task

To configure logging in log4j for IBM Campaign, you set property values in the `campaign_log4j.properties` file located in the `conf` directory under your Campaign installation. For example, to change the location of the log file, open the `campaign_log4j.properties` file and change the value of the `log4j.appenders.FILE.File` property to the fully qualified path where you want the log file to be written.

For information about changing log4j property settings, see the following sources:

- The comments in the `campaign_log4j.properties` file.
- The log4j documentation on the Apache web site:  
<http://logging.apache.org/log4j/1.2/manual.html>

**Note:** After you change values in the `campaign_log4j.properties` file, you must restart the IBM Campaign web application.

### To change the location of the `campaign_log4j.properties` file

#### About this task

On the Configuration page, change the value of the `log4jConfig` property in the Campaign > logging category to the desired location.

---

## The Campaign Listener log

The Campaign Listener log file contains events generated by the Campaign Listener.

The log is in the file `unica_aclsnr.log`, located in the `Campaign_home/logs` directory.

Depending on the system's logging settings, the `Campaign_home/logs` directory may contain multiple historical Campaign Listener logs, each ending with an extension number, for example `unica_aclsnr.log.1`, `unica_aclsnr.log.2`, and so on.

The number of logs retained and the maximum size of each log depend on the value of the `Applications>Campaign>unicaACListener>logMaxBackupIndex` and the `Applications>Campaign>unicaACListener>logMaxFileSize` properties, respectively.

### To configure Campaign Listener logging

#### About this task

**Note:** To complete this task, you must have appropriate permissions to use Marketing Platform. For information, see the *Marketing Platform Administrator's Guide*.

On the Configuration page, set the following properties in the Campaign > unicaACListener category as needed. For information on the properties, see the context help or the *Marketing Platform Administrator's Guide*.

- enableWindowsEventLogging
- loggingLevels
- logMaxBackupIndex
- logMaxFileSize
- windowsEventLoggingLevels

## To view the Campaign Listener log file

### Procedure

1. Select **Settings > Campaign Settings**.

The Campaign Settings page opens, presenting links for various administration tasks.

2. Click **View System Log**.

The current Campaign Listener log opens in a new browser window. Events that occur after you open the log file are not listed.

---

## The Campaign Server Manager log

The Campaign Server Manager log file (`unica_svradm.log`) is generated if an error occurs when running the `unica_svradm` utility. This log file is located in the `Campaign_home/logs` directory.

---

## The Campaign session utility log

The Campaign session utility log file (`unica_acsesutil.log`) is generated if an error occurs when running the `unica_acsesutil` utility. This log file is located in the `Campaign_home/partitions/partition_name/logs` directory.

---

## Flowchart logs

Each campaign flowchart generates flowchart-specific logging information when it is run.

The log is in a file called `campaign_name_campaign_code_flowchart_name.log`. By default, this log file is located in the `Campaign_home/partitions/partition_name/logs` directory. However, when you are editing a flowchart you can customize the log location by clicking the Options menu and selecting Change Log Path. Note that you cannot select Change Log Path unless `AllowCustomLogPath` is enabled in the Campaign properties.

## To configure flowchart logging

Set the logging configuration properties to configure logging for all flowcharts in a partition.

### About this task

To complete this task, you must have **Administer Configuration** page permission in IBM Marketing Platform.

### Procedure

1. Choose **Settings > Configuration**.
2. Set the properties under `Campaign|partitions|partition[n]|server|logging`:
  - `allowCustomLogPath`
  - `enableLogging`

- enableWindowsEventLogging
- keepFlowchartLogOpen
- logFileBufferSize
- loggingCategories
- loggingLevels
- logMaxBackupIndex
- logMaxFileSize
- logProcessId
- windowsEventLoggingCategories
- windowsEventLoggingLevels

## Results

All flowcharts in the partition will now use the specified properties for logging.

**Note:** A user who has permission to **Override Flowchart Log Options** can override the logging options when editing a flowchart by selecting **Logging Options** from the **Options** menu. The selected options apply only to the flowchart that is being edited. The selected options do not persist beyond the current session.

## Enabling or disabling flowchart logging

You can turn logging on or off for flowchart processes.

### Procedure

1. When you edit a flowchart, click the **Options** icon  .
2. In the **Options** menu, examine the **Enable Logging** command.
  - When this command shows a check mark, logging is enabled.
  - When there is no check mark, logging is disabled.
3. Select **Enable Logging** to toggle the current setting.

## To modify flowchart logging levels

### Procedure

1. When editing a flowchart, select **Options > Logging Options**.  
The **Logging Options** window opens.
2. Check the message types to log. In increasing order of verbosity, the four levels of logging are:
  - **Error** - Flowchart errors.
  - **Warning** - Flowchart warnings.
  - **Information** - Informational messages.
  - **Debug** - Verbose debugging information.
 Log files can grow quickly when informational or debugging messages are logged, so you may want to clear these options unless debugging.
3. Check the message categories to log.
4. Check **Include the Process ID in Log Entries** to have the process ID included for each entry.
5. Click **OK** to save the settings.

## Customizing the flowchart log file location

By default, each flowchart log file is stored in the `Campaign_home/partitions/partition_name/logs` directory. However, when you edit a flowchart, you can specify a different location for that flowchart's log.

### Before you begin

Before you can customize the log file location, the `AllowCustomLogPath` configuration property for the Campaign server must be enabled in the `Campaign > partitions > partition[n] > server > logging` category. See the *IBM Campaign Administrator's Guide* for details on setting configuration properties.

### Procedure

1. When you edit a flowchart, select **Options > Change Log Path**.  
The Select log path window opens.  
If the **Change Log Path** option is not enabled, be sure that the server's `AllowCustomLogPath` configuration property is enabled, then edit the flowchart to try again.
2. Use the **Directory** list to locate the directory in which you want to store the flowchart log files.  
Double-click any directory name to see the directories it contains.
3. Optionally, you can create a new directory on the Campaign server by clicking the **New Folder** icon  above the **Directory** list.
4. After you select the directory in the list, click **Open** to accept your choice. The Select log path window closes automatically.

### Results

The flowchart's log files are now stored in the directory that you specified.

## To view flowchart log files

### About this task

When editing a flowchart, select **Options > View Logs**.

The flowchart log file opens in a new browser window.

## To clear a flowchart log file

### About this task

When editing a flowchart, select **Options >Clear Logs**.

The content of the log file is deleted.

---

## The sessions log

When a user views a flowchart, before editing it, session information for that flowchart is logged in the `ac_sess.log` file, located in the `Campaign_home/partitions/partition_name/logs` directory.

The `ac_sess.log` file records information about server connections when flowcharts are opened.

---

## The web connections log

When a user logs into Campaign, information is logged in the ac\_web.log file, located in the *Campaign\_home/partitions/partition\_name/logs* directory.

The ac\_web.log file records information about the user's connections to the Campaign system database.

---

## The cleanup utility log

The cleanup utility log file (unica\_acclean.log) is generated if an error occurs when running the unica\_acclean utility. This log file is located in the *Campaign\_home/partitions/partition\_name/logs* directory.

---

## Windows event logs

When Campaign is installed on a Windows computer, you have the option to log Campaign listener and flowchart events to the Windows event log. Whether the Windows event log is used is determined by the following configuration properties.

- Applications > Campaign > unicaACListener > enableWindows-EventLogging, for the Campaign listener.
- Applications > Campaign > partitions >*partition\_name*> server > logging > enableWindowsEventLogging, for flowcharts in that partition.

## To configure Windows event logging for the Campaign listener

### About this task

**Note:** To complete this task, you must have appropriate permissions to use Marketing Platform. For information, see the *Marketing Platform Administrator's Guide*.

On the Configuration page, set the enableWindowsEventLogging and windowsEventLoggingLevels properties in the applications>Campaign>unicaACListener category as needed. For information on the properties, see the context help or the *Marketing Platform Administrator's Guide*.

## To configure Windows event logging for flowcharts

### About this task

**Note:** To complete this task, you must have appropriate permissions to use Marketing Platform. For information, see the *Marketing Platform Administrator's Guide*.

On the Configuration page, modify the following properties in the Campaign > partitions > partition[n] > server > logging category as needed:

- enableWindowsEventLogging
- windowsEventLoggingCategories
- windowsEventLoggingLevels

For information on the properties, see the context help or the *Marketing Platform Administrator's Guide*.

---

## Chapter 13. Unique code administration

Each campaign, offer, treatment, and cell in Campaign has an identifying code that is generated by code generators, and conforms to a specified format.

IBM Campaign administrators can:

- Set configuration parameters to control how each type of code is generated, and valid formats for codes.
- Create and set up a custom code generator if the default generators do not meet your needs.

---

### About campaign codes

A campaign code is the globally unique identifier for a campaign. Each campaign must have a code, and no two campaign codes in the same Campaign partition can be the same.

**Note:** Note that although campaign codes must be unique within each partition, campaign names do not need to be unique.

When users create a campaign, the **Campaign code** field is automatically populated with a unique value from the code generator.

Users can click **Regenerate code** to have the code generator supply a new identifier, or they can enter a code manually. If users manually enter a code, it must be unique and in the specified format.

---

### About offer codes

An offer code is the globally unique identifier for an offer. Each offer in Campaign must have a code, and no two offer codes in the same Campaign partition should be the same.

An offer code can have one to five parts, which you specify when creating the offer template.

When users create an offer, the Offer Code field(s) are automatically populated with a unique value from the code generator.

Users can click **Regenerate code** to have the code generator supply a new identifier, or they can enter a code manually. To override offer codes, users must have the appropriate permission.

**Important:** Automatically generated offer codes are guaranteed to be globally unique only if no user ever overrides any offer code.

---

### About cell codes

A cell code is an identifier for each cell in a flowchart or in the target cell spreadsheet.

In the flowchart processes that create new output cells (for example, Select, Merge, Segment, Sample, Audience and Extract processes), cell code(s) for the output of the process are configured in the **General** tab.

By default, the cell code is generated automatically; users can manually override the generated cell code by clearing the **Auto Generate** checkbox and entering a code in the valid format.

Whether cell codes must be unique within a flowchart depends on the setting of the `AllowDuplicateCellCodes` configuration parameter (described in [Code generation references](#)). If the value of `AllowDuplicateCellCodes` is FALSE, cell codes must be unique within a flowchart; the same cell code can still exist in different flowcharts and campaigns. If the value of `AllowDuplicateCellCodes` is TRUE, cell codes within a single flowchart do not have to be unique.

If duplicate cell codes are not allowed and a user enters a cell code that is already used elsewhere in the same flowchart, no error is immediately generated. However, users can validate flowcharts and detect duplicate cell codes using the flowchart validation tool if duplicate cell codes are not allowed. For information on flowchart validation, see the section on [Validating Flowcharts](#) in the *Campaign User's Guide*.

**Important:** Automatically generated cell codes are guaranteed to be unique only if no user ever overrides any cell code. For more information about working with cells, see the *Campaign User's Guide*.

## About treatment codes

The unique combination of a cell and an offer used at a particular point in time is referred to in Campaign as a treatment. Each treatment is uniquely identified with a treatment code.

For more information about treatments, see the *Campaign User's Guide*.

Separate treatments, and treatment codes, are generated each time a flowchart is run. If users run a flowchart on January 1, and again on January 15, two separate treatments are created. This allows you to track responses to offers in the most granular way possible.

**Note:** Once treatment codes are generated, they cannot be overridden.

## Code formats

The default and valid format for each type of generated code uses a series of characters to represent the character types.

The following table lists the characters you can use to control code formats.

*Table 40. Control code formats*

| Characters                                 | Treated As                                                                                                                                                                |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A-Z, any symbol,                           | A constant value in the generated code                                                                                                                                    |
| b, d-m, o-w, y, z (or, b-z except c, n, x) |                                                                                                                                                                           |
| a                                          | Any uppercase letter A-Z                                                                                                                                                  |
| c or x                                     | Any uppercase letter A-Z, or any number, 0-9                                                                                                                              |
| x                                          | Any uppercase letter A-Z, any number 0-9. However, users can replace the generated character with any ASCII character.                                                    |
|                                            | To specify variable length codes, the code format must end with one or more "x" characters, and the <code>allowVariableLengthCodes</code> property must be set to "TRUE." |
| n                                          | Any number 0-9                                                                                                                                                            |

## Example

Table 41. Example of control code format

| Format definition | Example of generated code                                                                                                 |
|-------------------|---------------------------------------------------------------------------------------------------------------------------|
| CAMP_aaannn       | CAMP_DWP839<br>(CAMP_ followed by three randomly generated capital letters, then three randomly generated numeric digits) |

## Default code formats

The following table shows the default formats for campaign, cell, offer and treatment codes that are generated by the IBM Campaign built-in code generators.

Table 42. Default code formats

| Code type | Default Value | Where Defined                                                         |
|-----------|---------------|-----------------------------------------------------------------------|
| Campaign  | Cnnnnnnnnn    | campCodeFormat parameter on the Marketing Platform Configuration page |
| Cell      | Annnnnnnnn    | cellCodeFormat parameter on the Marketing Platform Configuration page |
| Offer     | nnnnnnnnnn    | In each offer template defined in Campaign                            |
| Treatment | nnnnnnnnnn    | In each offer template defined in Campaign                            |

## Code format requirements

Unique campaign, cell, treatment, and offer codes must be 32 characters or less. This applies to codes generated by both default and custom code generators as well as any manually entered codes.

In offer codes, you cannot use the space character.

## About changing the default code formats

You can override the default formats for the codes generated by the Campaign built-in code generators.

Before modifying the default code formats, be aware of code format restrictions in Campaign.

### To change the campaign code format

#### About this task

**Note:** To complete this task, you must have appropriate permissions to use Marketing Platform. For information, see the *Marketing Platform Administrator's Guide*.

When you change campaign code format, the new format applies to all new campaigns. Existing campaigns can continue to use their current codes in the previous format. However, if a user edits the campaign code, the new code must adhere to the current campaign code format.

On the Configuration page, set the campCodeFormat property in the Campaign > partitions > partition[n] > server > systemCodes category as required. Follow the formatting guidelines as described in "Code formats" on page 124.

### To change the cell code format

#### About this task

**Note:** To complete this task, you must have appropriate permissions to use Marketing Platform. For information, see the *Marketing Platform Administrator's Guide*.

**Important:** Do not change the cell code format after users have created flowcharts. Doing so will invalidate existing flowcharts.

On the Configuration page, set the `cellCodeFormat` property in the `Campaign > partitions > partition[n] > server > systemCodes` category as required. Follow the formatting guidelines as described in “Code formats” on page 124.

## To change the offer or treatment code format in an existing offer template

### About this task

You define the offer and treatment code formats for each offer template you create. You set the offer or treatment code formats at the time that you create each offer template. You can also change the offer and treatment code formats for existing offer templates by editing the template, but only if the template has not yet been used to create offers.

**Note:** You can change the offer and treatment code formats in existing offer templates only if the template has not yet been used to create offers.

### Procedure

1. Log in to Campaign and click **Settings > Campaign Settings**.
2. On the Campaign Settings page, click **Offer Template Definitions**.
3. Click the link for the offer template whose offer or treatment code format you want to change.
4. On offer template definition page, modify the Offer Code Format or Treatment Code Format as required, following the formatting requirements in Code format requirements.

**Important:** You cannot use the space character in an offer code format.

5. Click **Finish**.

---

## About code configuration properties

All properties for configuring campaign and cell codes, code generators, and certain attributes of offer codes in Campaign are set on the Marketing Platform Configuration page.

Offer code formats are defined in offer templates rather than configured using parameters.

---

## About code generators

Code generators are the programs used to automatically generate campaign, cell, offer, and treatment codes of the required format in Campaign.

In addition to its built-in code generators, Campaign supports custom code generators that you develop.

## Default code generators in Campaign

Campaign provides code generators that automatically generate campaign, cell, offer, and treatment codes matching the default specified format for each type of code.

The following table shows the name of each type of code's built-in code generator and its location:

*Table 43. Default code generators*

| Code Type | Default Generator | Location                   |
|-----------|-------------------|----------------------------|
| Campaign  | uaccampcodegen    | <install_dir>/Campaign/bin |
| Cell      | uaccampcodegen    | <install_dir>/Campaign/bin |
| Offer     | uacoffercodegen   | <install_dir>/Campaign/bin |

*Table 43. Default code generators (continued)*

| Code Type | Default Generator | Location                   |
|-----------|-------------------|----------------------------|
| Treatment | uaccampcodegen    | <install_dir>/Campaign/bin |

Replace <install\_dir> with the actual directory in which Campaign is installed.

If the code generators built-in to Campaign do not meet your company's needs, you can develop and use custom code generators.

## About custom code generators

If the Campaign default code generators do not meet your needs, you can develop and use your own code generators.

A custom code generator is any program you develop to output unique campaign, offer, or cell codes (or all three). You can develop a custom code generator in any programming language that can be compiled into an executable file for the operating system on which the Campaign web application is deployed.

**Important:** If the Campaign web and analytical servers are deployed on separate machines, make sure you deploy the code generators on all machines.

The most common reason for creating a custom code generator is to generate codes that are useful for your company's business needs. For example, your custom code generator could be set up to create campaign codes containing the campaign owner's initials and the current date.

## Requirements for custom code generators

Custom code generators must meet the following requirements:

- The executable name must be a single word with no spaces;
- The unique codes generated must match the specified code format, which is passed as an input to the custom code generator;
- The custom code generators must output the unique codes, or an error, to the standard output stream (stdout);
- Custom campaign and cell code generators must be placed in the /Campaign/bin directory. Custom offer code generators can be placed in a location of your choice which you then must specify in the offer code generator configuration properties on the Marketing Platform Configuration page.

## About configuring Campaign to use custom code generators

You specify campaign and cell code formats and generators using a property on the Marketing Platform Configuration page.

**Note:** To complete this task, you must have the appropriate permissions in IBM EMM. For information, see the *Marketing Platform Administrator's Guide*.

You specify the offer and treatment code generators for each offer template you create. Each offer created based on a template then uses the program(s) you specify to generate unique offer and treatment codes.

### To specify the campaign code generator

#### About this task

**Note:** To complete this task, you must have appropriate permissions to use Marketing Platform. For information, see the *Marketing Platform Administrator's Guide*.

On the configuration page, set the value of the campCodeGenProgFile property in the Campaign > partitions > partition[n] > server > systemCodes category to the executable name of the custom campaign code generator.

## To specify the cell code generator

### About this task

**Note:** To complete this task, you must have appropriate permissions to use Marketing Platform. For information, see the *Marketing Platform Administrator's Guide*.

On the Configuration page, set the value of the cellCodeGenProgFile property in the Campaign > partitions > partition[n] > server > systemCodes category to the executable name of the custom campaign code generator.

## To specify the offer code generator

### Procedure

1. Log in to Campaign and click **Settings > Campaign Settings**.
2. On the Campaign Settings page, click **Offer Template Definitions**.
3. Click the link for the offer template whose offer code generator you want to specify.
4. On **Step 1** of the new offer template definition page, enter the executable name of the custom offer code generator as the value of the **Offer Code Generator** field.
5. Click **Finish**.

## To specify the treatment code generator

### Procedure

1. Log in to Campaign and click **Settings > Campaign Settings**.
2. On the Campaign Settings page, click **Offer Template Definitions**.
3. Click the link for the offer template whose offer code generator you want to specify.
4. On the **Step 1** offer template definition page, enter the executable name of the custom treatment code generator as the value of the **Treatment Code Generator** field. If you leave this field empty, the default treatment code generator is used.
5. Click **Finish**.

---

## About creating custom code generators

You can create custom code generators in any language that can be compiled into an executable file for the operating system on which you are running Campaign.

## About outputting unique codes

The custom code generator must output unique codes, of no more than 32 characters, to the standard output stream (stdout).

**Important:** When Campaign saves offer and cell codes, it does not check their uniqueness. You must ensure that any custom code generators you use can generate globally unique codes (assuming no users override generated codes).

The output line must:

- Start with 1,
- Followed by one or more blank spaces,
- Followed by the unique code, within double quotation marks.

## **Example**

The following example shows the correct code output format:

```
1 "unique_code"
```

## **About outputting errors**

The custom code generator must output an error to the standard output stream (stdout) when it is not able to properly generate a unique code of the proper format.

The output line for the error must:

- Start with 0,
- Followed by one or more blank spaces,
- Followed by the error message, within double quotation marks.

## **Example**

The following example shows the correct code output format:

```
0 "error_message"
```

**Note:** The error message generated by the custom code generator is displayed to the user and written to the log.

## **About placing the custom code generators**

You must place the application that generates campaign or cell codes in the bin directory of your Campaign installation.

You can place custom offer code generators in a location of your choice, then specify the location using IBM EMM.

## **To specify the location of the custom offer code generator**

On the Configuration page, change the value of the offerCodeGeneratorConfigString property in the Campaign | partitions | partition\_N | offerCodeGenerator category to the location of the custom offer code generator executable. The location is relative to the Campaign web application home.

## **About this task**

**Note:** To complete this task, you must have appropriate permissions to use Marketing Platform. For information, see the *Marketing Platform Administrator's Guide*.

---

## **Code generation references**

This section contains the following reference topics:

- “Properties related to code generation” on page 130
- “Parameters for the default campaign and cell code generators” on page 130
- “Parameters for the default offer code generator” on page 130
- “Parameters for custom code generators” on page 131

## Properties related to code generation

Use the following properties to customize code formats and generators. To access and modify these properties, use the Marketing Platform Configuration page. For information about these properties, see the context help or the *Marketing Platform Administrator's Guide*.

Table 44. Properties to customize code formats and generators

| Property                       | Path                                                          |
|--------------------------------|---------------------------------------------------------------|
| allowVariableLengthCodes       | Campaign> partitions> partition[n] > server>systemCodes>      |
| campCodeFormat                 | Campaign> partitions> partition[n] > server>systemCodes>      |
| campCodeGenProgFile            | Campaign> partitions> partition[n] > server>systemCodes>      |
| cellCodeFormat                 | Campaign> partitions> partition[n] > server>systemCodes>      |
| cellCodeGenProgFile            | Campaign> partitions> partition[n] > server>systemCodes>      |
| displayOfferCodes              | Campaign> partitions> partition[n] > server>systemCodes>      |
| offerCodeDelimiter             | Campaign> partitions> partition[n] > server>systemCodes>      |
| allowDuplicateCellcodes        | Campaign> partitions> partition[n] > server> flowchartConfig> |
| defaultGenerator               | Campaign> partitions> partition[n] > offerCodeGenerator>      |
| offerCodeGeneratorClass        | Campaign> partitions> partition[n] > offerCodeGenerator>      |
| offerCodeGeneratorClasspath    | Campaign> partitions> partition[n] > offerCodeGenerator>      |
| offerCodeGeneratorConfigString | Campaign> partitions> partition[n] > offerCodeGenerator>      |

## Parameters for the default campaign and cell code generators

The following parameters are supported by the uaccampcodegen program, located in the `<Campaign_home>/bin` directory (where `<Campaign_home>` is the Campaign installation directory, such as `C:\Unica\Campaign\bin`, or `/Unica/Campaign/bin`).

Table 45. Parameters for default campaign and cell code generators

| Parameter | Use                                                                               |
|-----------|-----------------------------------------------------------------------------------|
| -c        | Passes in the cell name.                                                          |
| -d        | Passes in the day. Can accept one or two integers, not to exceed the value of 31. |
| -f        | Passes in the code format, used to override the default format.                   |
| -i        | Passes in an additional integer to be used to generate a unique code.             |
| -m        | Passes in the month. Can accept one or two integers, from 1 - 12.                 |
| -n        | Passes in the campaign name.                                                      |
| -o        | Passes in the campaign owner.                                                     |
| -s        | Passes in an additional string to be used to generate a unique code.              |
| -u        | Passes in the campaign ID, to use instead of the system generated ID.             |
| -v        | Prints the first argument to the standard out stream (STOUT).                     |
| -y        | Passes in the year. Accepts four integers.                                        |

## Parameters for the default offer code generator

The following parameters are supported by the uacoffercodegen program, located in the `<Campaign_home>/bin` directory (where `<Campaign_home>` is the Campaign installation directory).

*Table 46. Parameters for default offer code generator*

| Parameter | Use                                                                               |
|-----------|-----------------------------------------------------------------------------------|
| -a        | Passes in the number of offer code parts, from 1 - 5.                             |
| -d        | Passes in the day. Can accept one or two integers, not to exceed the value of 31. |
| -f        | Passes in the code format, used to override the default format.                   |
| -i        | Passes in an additional integer to be used to generate a unique code.             |
| -m        | Passes in the month. Can accept one or two integers, from 1 - 12.                 |
| -n        | Passes in the campaign name.                                                      |
| -s        | Passes in an additional string to be used to generate a unique code.              |
| -u        | Passes in the campaign ID, to use instead of the system generated ID.             |
| -v        | Prints the first argument to the standard out stream (STOUT).                     |
| -y        | Passes in the year. Accepts four integers.                                        |

## **Example**

```
uacoffercodegen -f "nnnnnnnnn nnnnnnnnn nnnnnnnnn nnnnnnnnn nnnnnnnnn"
-a 5 -u 3 -y 2008 -m 1 -d 14
```

## **Parameters for custom code generators**

Campaign supports custom parameters as input to any custom code generator you configure for use in Campaign.

No validation is performed for these parameters; however, the following restrictions apply:

- You cannot reuse the flags for the default Campaign code generators as flags for parameters in the custom code generators.
- Do not use spaces in custom code generator executable names.
- Do not use double quotation marks around parameters or around the executable name.
- Spaces are read as separators between the code generator executable name, and between parameters. The first space is interpreted as marking the end of the executable name; subsequent spaces are interpreted as separating multiple parameters.
- The code generator fields for the Configuration Manager and the offer template interface are limited to 200 characters.



---

## Chapter 14. Advanced settings administration

You use advanced settings to manage certain settings and server optimization features in IBM Campaign.

### Accessing the Advanced settings for a flowchart

When a flowchart is open for editing, administrators can use the **Admin** menu to make changes for a specific flowchart.

#### About this task

##### Procedure

1. Open a flowchart in Edit mode.
2. Open the **Admin** menu  and select **Advanced Settings**.  
The Advanced Settings window opens.  
The Advanced Settings window has three tabs:
  - **General**: Adjust in-database optimization, global suppression, and many other settings for this flowchart.
  - **Server Optimization**: Control the use of virtual memory and temporary tables for this flowchart.
  - **Test Run Settings**: Specify whether to write test run results to the database for this flowchart.

### About the General settings

The General tab settings allow you to specify:

- Whether results from runs of this flowchart are saved;
- Whether flowchart processing is done "in database" or on the Campaign server;
- Whether global suppression is disabled for this flowchart;
- The Y2K (Year 2000) threshold;
- Whether Campaign automatically saves this flowchart;
- Whether Campaign uses checkpoints during runs of this flowchart;
- The maximum number of data errors Campaign allows;
- The triggers to send if a run of this flowchart results in an error;
- The triggers to send if a run of this flowchart completes successfully.

### Save flowchart run results

The **Save Flowchart Run Results** option under **Admin > Advanced Settings** lets you save the run results for an individual flowchart. Use this option to override the global configuration setting `Campaign|partitions|partition[n]|server|flowchartRun|saveRunResults`.

When you open a flowchart for editing, you can select **Save Flowchart Run Results** to specify that all output cells from flowchart runs are saved when the run is finished. The next time you open the flowchart, you will be able to profile the results of any process that has finished running, or start a process or branch run from the middle of a flowchart. If you do not save results, each time you want to view results of a flowchart run you will have to re-run the entire flowchart from the beginning.

For flowcharts that create artifacts that you want to save, you must select **Save Flowchart Run Results**. For example, if you have flowcharts that include CreateSeg processes, you must save run results. If you do not save run results, the strategic segments will not persist.

By default, this option is selected.

## Set in-database optimization

Using in-database optimization can improve flowchart performance. When in-database optimization is on, processing is done on the database server and output is stored in temporary tables on the database server whenever possible.

### About this task

You can apply in-database optimization in two ways: globally and for individual flowcharts. The best practice is to turn off the global configuration setting and set the option at the flowchart level.

### Procedure

1. To adjust the option globally, at the partition level:
  - a. Choose **Settings > Configuration**.
  - b. Choose **Campaign > partitions > partition[n] > server > optimization**.
  - c. Set **useInDbOptimization** to TRUE (on) or FALSE (off).
2. To override the option for an individual flowchart:
  - a. Open a flowchart in **Edit** mode.
  - b. Open the **Admin** menu  and select **Advanced Settings**.
  - c. Select or clear **Use In-DB Optimization during Flowchart Run**.



When you save and run the flowchart, in-database processing will be used whenever possible, if you are using in-database optimization.

**Note:** In-database processing cannot be done if you specify any limitations on the output cell size or if temporary tables are disabled for a process.

### Details about in-database optimization

In-database optimization avoids copying IDs from the database to the IBM Campaign server for processing whenever possible. This option can improve flowchart performance.

In-database optimization determines:

- Whether operations are done on the database server or the local IBM Campaign server; and
- Where the results of operations are stored.

When in-database optimization is on:

- Processing tasks such as sorting, joining, and merging data are done on the database server whenever possible.
- Output cells of processes are stored in temporary tables on the database server.

In-database optimization affects CPU consumption:

- When in-database optimization is on, more CPU is consumed on the database server.

- When in-database optimization is off, more CPU is consumed on the IBM Campaign server.

You can apply in-database optimization globally and override the global setting for individual flowcharts. The best practice is to turn off the global configuration property (**Use in-DB optimization**) and set the option at the flowchart level (**Advanced Settings > Admin > Use in-DB optimization during flowchart run** ).

**Important:** In-database processing cannot be done if you specify any limitations on the output cell size or if temporary tables are disabled for a process.

### Limitations of in-database optimization

- In-database optimization is not supported for all databases.
- Depending on the logic that is required, some functions are still performed on the IBM Campaign server, even with in-database processing turned on. Some examples are given below:
  - The query uses tables from different data sources.  
For example, if a Select process queries different data sources, IBM Campaign automatically stores the ID lists for those cases on the application server.
  - The query contains non-SQL macros or derived fields.  
For example, to calculate a derived field, IBM Campaign evaluates the derived field formula to see whether any part of the calculation can be performed with SQL. If simple SQL statements can be used, the calculation is done in-database. If not, temporary tables are created on the IBM Campaign server to handle the calculations and persist the results from process to process within a flowchart.

### Processing raw SQL in macros

Custom macros that consist of raw SQL statements can be processed in-database, within the following guidelines:

- All raw SQL custom macros must begin with `select` and contain exactly one `from` in the rest of the text.
- For databases that only support `insert into <TempTable>` syntax, you must map at least one base table to the same data source at the same audience level as the raw SQL custom macro. If the fields that are selected by the raw SQL custom macro are too large for the fields of the temp table, a runtime error occurs.
- If you use a raw SQL query in a Select process that has an input cell, you must use the `<TempTable>` token to obtain the correct list of audience IDs. Also use the `<OutputTempTable>` token to prevent audience IDs from being retrieved from the database back to the IBM Campaign server.
- If you use raw SQL with in-database optimization, you must code the raw SQL to join with the temp table from the upstream process. Otherwise, the results are not scoped by the results from the upstream process.

### Disable global suppression for this flowchart

Global suppression involves specifying a list of IDs (in a single audience level) that are automatically excluded from all cells in flowcharts in Campaign.

If you have appropriate permissions, you can disable global suppression for this flowchart.

**Note:** If you do not have the appropriate permissions, you cannot change the setting and must run the flowchart with the existing setting. By default, new flowcharts are created with this setting cleared, and global suppressions applied.

## **Y2K threshold**

The **Y2K Threshold** value determines how Campaign interprets years that are represented with only two digits.

**Note:** We highly recommend that you store dates in the database with 4-digit years to prevent confusion.

Valid values are 0 to 100; any values higher than 100 are set to 100. The default setting for Y2K Threshold is 20.

Campaign uses the Threshold value to calculate a range of years whose lower limit is the threshold value + 1900 and whose higher limit is 99 years above that.

For example, if you set the Y2K Threshold to 50, the range of years is from  $1900+50 = 1950$ , to 99 years above that, that is, 2049.

So, if you enter a two-digit year greater than or equal to your threshold (in this case, 50), the date is interpreted to be in the 1900s. If you enter a two-digit year less than your threshold, it is interpreted to be in the 2000s.

If you set the Y2K Threshold to the maximum value of 100, the range of years will be  $1900+100 = 2000$ , to 2099. In this case, all two-digit years are interpreted to be in the 2000s.

You can change this threshold as needed.

## **Auto-save**

You can set the auto-save feature to automatically save your work periodically (for example, every 5 minutes) for recovery purposes. If the Campaign server terminates while you are editing a flowchart, if you had Auto-Save enabled, when you re-open the flowchart, you will see the last auto-saved version.

**Note:** You must have previously saved the current flowchart (provided a file name) for this feature to work.

Campaign stores auto-save files in a temporary directory so that the original flowchart files are not changed. Therefore, in non-recovery situations (for example, if you manually exit flowchart Edit mode without saving your flowchart) auto-saved versions are not retrieved. In this situation, when you re-open a flowchart that you manually left without saving, you will see the last manually saved version.

Auto-save never saves flowcharts that are in a paused state, even if Auto-save occurs while a selected process is running.

The default setting for Auto-Save is **Never**.

## **Checkpoint**

The Checkpoint feature provides the ability to capture a "snapshot" of a running flowchart for recovery purposes. A checkpoint "save" has the same effect as if you selected **File > Save**, and allows you to recover a flowchart in the state of the most recent checkpoint save, in the event the server stops or goes down.

When you set a frequency interval for checkpoint, it controls a timer on the server for a running flowchart. Checkpoint saves are made at the specified intervals.

Checkpoint is active during a flowchart run and when you run a branch in the **Flowchart**. When the running flowchart saves, Campaign saves it in Paused mode. When you open the flowchart, you must either stop or resume the flowchart. When you resume, the currently executing processes run again from the beginning.

The default setting for Checkpoint is **Never**.

## Maximum data errors allowed

When Campaign exports data to a file or a mapped table (for example, in a Snapshot or Optimize process), it occasionally encounters an error in format (for example, data does not fit into the table). The **Maximum Data Errors Allowed** option allows Campaign to continue working on the file (if less than N number of errors occur) instead of failing on the first error.

The default is zero (0) errors.

**Note:** Set this value higher if you are debugging a problem with an export and want to write the errors to a log file.

## Send trigger on flowchart run errors

This option allows you to select one or more triggers from a list of outbound triggers that run when a campaign encounters errors during a flowchart run (indicated by a red X). You most commonly use this option to trigger an email to alert an administrator of the problem. Trigger on Failure runs for each process run that fails.

## Send trigger on flowchart success

This option allows you to select one or more triggers from a list of outbound triggers that run when a session succeeds. You most commonly use this option to trigger an email to alert an administrator of the successful run. Trigger on Success runs only if the entire flowchart run completes successfully.

---

## About the Server Optimization settings

The **Server Optimization** tab allows you to specify the Campaign **Virtual Memory Usage Limit** and override use of temporary tables for the current flowchart.

## Campaign Virtual Memory Usage

The **Campaign Virtual Memory Usage** option under **Admin > Advanced Settings** allows you to specify the maximum amount of system virtual memory (MB) to use when running a specific flowchart.

You can increase the value to improve performance or decrease the value to limit the resources used by a single flowchart. The maximum value is 4095 MB. If you enter a larger value, Campaign automatically limits it to 4095 MB. The default value that appears is determined by the configuration setting **Campaign | partitions | partition[n] | server | optimization | maxVirtualMemory**.

## Disallow use of temporary tables for this flowchart

The **Disallow Use of Temp Tables for This Flowchart** checkbox allows you to specify that temporary tables should not be used for the current flowchart.

This option overrides the `allow_temp_tables` property in the central configuration repository provided by IBM EMM for the user database. This setting does not affect the system data source.

---

## About the Test Run Settings

The **Test Run Settings** tab allows you to specify whether to write test run results to your database.

Select the **Enable Output** checkbox to specify that you want to output the results of your test runs to your database.

In general, Campaign does not write test run results to your database; however, you might want to verify that results are being recorded properly. To do this, limit your cell size and then select the **Enable Output** checkbox, so that you are using a limited amount of data to test your flowchart run and its output.

---

## **Chapter 15. IBM Campaign integration with other IBM products**

IBM Campaign optionally integrates with a number of other IBM EMM products.

For more information, see the documentation included with these applications:

- **IBM Contact Optimization:** Optimize contacts from a customer-centric perspective while considering business rules and constraints.
- **IBM Digital Analytics and IBM Digital Analytics for On Premises:** Use web analytics segments in IBM Campaign flowcharts.
- **IBM Distributed Marketing:** Support distributed, custom execution of centrally managed campaigns.
- **IBM eMessage:** Construct targeted, measurable email marketing campaigns.
- **IBM Interact:** Retrieve personalized offers and customer profile information in real-time to enrich the interactive experience.
- **IBM Interaction History and IBM Attribution Modeler:** Deliver unique insights into cross-channel communications and customer activity by combining data from various sources (online as well as offline) into a single repository.
- **IBM Marketing Operations:** Integrate the marketing resource management features of Marketing Operations with the campaign development features of Campaign.
- **IBM SPSS Modeler Advantage Enterprise Marketing Management Edition:** Provide an automated predictive modeling solution for database marketers.

IBM Marketing Platform provides security as well as a common access point and user interface for Campaign and other IBM EMM applications.

IBM Cognos provides the framework for the IBM Report Packs that are provided for various IBM EMM products.

**Related tasks:**

["Setting up Marketing Operations assets for use in Campaign offers"](#)

["Integrating IBM Digital Analytics and Campaign" on page 143](#)

["Configuring eMessage offer integration with IBM Campaign" on page 141](#)

---

### **Setting up Marketing Operations assets for use in Campaign offers**

This topic explains what administrators must do to allow Campaign users to relate a digital asset from Marketing Operations to a Campaign offer.

#### **About this task**

An asset is an electronic file that is designed for use in a marketing program. Examples include logos, brand images, marketing research documents, reference materials, corporate collateral, or document templates. To add an asset to a Campaign offer, you use the **CreativeURL** attribute. The **CreativeURL** attribute is a standard offer attribute that is installed with Campaign. A "Creative URL" is a pointer to a file in a Marketing Operations asset library.

*Table 47. Setting up Marketing Operations assets for use in Campaign offers*

| Task                                                                              | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | For documentation                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Create a library to hold digital assets.                                          | <p>This task is typically done by a Marketing Operations administrator.</p> <p>In IBM Marketing Operations, select <b>Settings &gt; Marketing operations settings</b>, click <b>Asset library definitions</b>, and add a library.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <i>IBM Marketing Operations Administrator's Guide</i>                                                                                                                                                                                                                                                          |
| Add assets to the library.                                                        | <p>This task is typically done by Marketing Operations users.</p> <p>In IBM Marketing Operations, select <b>Operations &gt; Assets</b>. Open a library, go to a folder, and click the <b>Add asset</b> icon. Specify the asset name, description, and other information, and use <b>Upload</b> to select and upload files into the library.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <i>IBM Marketing Operations User's Guide</i>                                                                                                                                                                                                                                                                   |
| Create an offer template that includes the <b>CreativeURL</b> attribute.          | <p>This task is typically done by a Campaign administrator.</p> <p>Offer attributes are the fields that define an offer. <b>Creative URL</b> is a standard attribute supplied with Campaign. Adding the <b>Creative URL</b> attribute to a template makes the attribute available to any offers based on that template.</p> <p>For example, in a system that does not integrate Marketing Operations with Campaign, you select <b>Settings &gt; Campaign Settings</b>, and click <b>Offer template definitions</b>. Click <b>Add</b>, then follow the prompts:</p> <ol style="list-style-type: none"> <li>1. In Step 1 of 3, define the template.</li> <li>2. In Step 2 of 3, move <b>Creative URL</b> into the Selected Attributes list.</li> <li>3. In Step 3 of 3, click <b>Browse library</b> in the <b>Creative URL</b> field. Go to a folder in an asset library and select an asset to use in this offer. Or, if you want to create an asset, click the name of a library, then click <b>Add asset</b> and provide the required information. In the <b>File</b> field, click <b>Upload</b>, then browse to a file. You can upload a File, a Preview File, and a Thumbnail. Follow the prompts to complete the action.</li> <li>4. Save the offer template.</li> </ol> <p>The URL to the asset is now included in the <b>Creative URL</b> field.</p> | <p>For systems that do not integrate Marketing Operations and Campaign, see the <i>Campaign Administrator's Guide</i>: "Creating offer templates" on page 58.</p> <p>For systems that integrate Marketing Operations and Campaign, see the <i>IBM Marketing Operations and Campaign Integration Guide</i>.</p> |
| Use Campaign to create an offer that includes an asset from Marketing Operations. | Campaign users can now create offers based on a template that includes the <b>Creative URL</b> attribute. When defining the offer, users can go to the asset library and select or create an asset.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <i>Campaign User's Guide</i>                                                                                                                                                                                                                                                                                   |

#### Related concepts:

"Introduction to using Marketing Operations assets in Campaign offers" on page 63

"Guidelines for using Marketing Operations assets in Campaign offers" on page 64

Chapter 15, "IBM Campaign integration with other IBM products," on page 139

# Configuring eMessage offer integration with IBM Campaign

You can configure Campaign to support eMessage offer integration, so offer communications can be tracked over the email channel. Campaign reports can then provide detailed response tracking for eMessage.

## Before you begin

Before you configure eMessage offer integration, you must install and prepare the locally installed eMessage components, as explained in the IBM Campaign installation and upgrade guides. You must also connect to the hosted email resources, as explained in the *IBM eMessage Startup and Administrator's Guide*.

## About this task

The following table lists the tasks that Campaign administrators must complete to configure eMessage offer integration.

*Table 48. Configuring eMessage offer integration*

| Task                                                                          | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | For more information                                                                                |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 1. Configure the contact and response history ETL process for this partition. | Campaign uses its own ETL process to extract, transform, and load offer response data from the eMessage tracking tables into the Campaign contact and response history tables. The ETL process coordinates information across the necessary tables.<br><br>To configure the ETL process: <ol style="list-style-type: none"><li>In IBM Campaign, select <b>Settings &gt; Configuration</b>.</li><li>Adjust the properties for the following parameter:<br/><code>Campaign   partitions   partition[n]   eMessage   contactAndResponseHistTracking</code></li></ol> | See "Campaign   partitions   partition[n]   eMessage   contactAndResponseHistTracking" on page 203. |
| 2. Optionally, adjust the ETL logging properties.                             | ETL logging is enabled by default. The default file location is <code>Campaign_home/logs/ETL.log</code> . To adjust logging behavior, modify the <code>campaign_log4j.properties</code> file, whose default location is <code>Campaign_home/conf</code> .                                                                                                                                                                                                                                                                                                         | See "The Campaign and eMessage ETL log file" on page 117.                                           |
| 3. Upgrades only: Adjust Campaign response tracking and mapping tables.       | New installations can skip this step because the tables were updated during the installation process.<br><br>Upgrade customers who want to use eMessage offer integration must add the Link Click, Landing Page, and SMS Reply Message response types to the <code>UA_UsrResponseType</code> table, then update the <code>UA_RespTypeMapping</code> table to map the response types to eMessage.*<br><br>The <code>UA_RespTypeMapping</code> table is required to coordinate transfer of data across the necessary Campaign and eMessage tables.                  | See "Adjusting Campaign response tables for eMessage offer integration" on page 142.                |

Table 48. Configuring eMessage offer integration (continued)

| Task                                                | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | For more information                                                  |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| 4. Optionally, adjust Campaign performance reports. | <p>The Campaign Detailed Offer Response Breakout report includes Link Click, Landing Page, and SMS Reply Message email responses by default, so no adjustments are necessary for this report.*</p> <p>The other performance reports show the sum of all contacts or responders over all channels that were used, but they do not specifically break out the information by channel. You can customize these reports to include channel information, if desired.</p> <p>Changes affect both the object-specific reports on the campaign or offer <b>Analysis</b> tab and the reports on the <b>Analytics</b> menu.</p> | See the <i>IBM EMM Reports Installation and Configuration Guide</i> . |

\*Only the Link Click response type is currently used for eMessage offer integration. The Landing Page and SMS Reply Message columns are not populated by the ETL process at this time.

**Related concepts:**

Chapter 15, “IBM Campaign integration with other IBM products,” on page 139

**Related tasks:**

“Adjusting Campaign response tables for eMessage offer integration”

## Adjusting Campaign response tables for eMessage offer integration

If you are using eMessage offer integration, you must confirm that the Campaign response tracking and mapping tables are set up properly.

### About this task

**Note:** New installations can skip this task because the tables were updated during the installation process. Upgrade customers who want to use eMessage offer integration must perform the following steps.

To support ETL of response types between Campaign and eMessage, response types must be defined in both the UACE\_ResponseTypeId table (for eMessage) and the UA\_UsrResponseType table (for Campaign). Then the response types must be mapped in the UA\_RespTypeMapping table. The UA\_RespTypeMapping table maps the **CampaignRespTypeID** in UA\_UsrResponseType to the **EMessageRespTypeID** in UACE\_ResponseTypeId.

### Procedure

1. Add the Link Click, Landing Page, and SMS Reply Message response types to the UA\_UsrResponseType table using the values shown below:
  - insert into ua\_usrresponsetype (ResponseTypeId, Name, Description, ResponseTypeCode, CountsAsResponse, isDefault) values (9, 'Link Click', NULL, 'LCL', 1, 0)
  - insert into ua\_usrresponsetype (ResponseTypeId, Name, Description, ResponseTypeCode, CountsAsResponse, isDefault) values (10, 'Landing Page', NULL, 'LPA', 1, 0)
  - insert into ua\_usrresponsetype (ResponseTypeId, Name, Description, ResponseTypeCode, CountsAsResponse, isDefault) values (11, 'SMS Reply Message', NULL, 'SRE', 1, 0)
 For more information, see “Default response types” on page 90.
2. Update the UA\_RespTypeMapping table to include Link Click (9,1,3), Landing Page (10,14,3) and SMS Reply Message (11,18,3), as shown below:

- insert into ua\_resptypemapping (campaignresptypeid, emessageresptypeid, applicationtype) values (9,1,3)
- insert into ua\_resptypemapping (campaignresptypeid, emessageresptypeid, applicationtype) values (10,14,3)
- insert into ua\_resptypemapping (campaignresptypeid, emessageresptypeid, applicationtype) values (11,18,3)

The ApplicationType of 3 indicates eMessage and must not be changed.

**Note:** Only the Link Click response type is currently used for eMessage offer integration. Landing Page and SMS Reply Message are not populated by the ETL process at this time.

## What to do next

Additional information about eMessage offer integration is provided in the *eMessage User's Guide* and the *Campaign User's Guide*.

### Related tasks:

"Configuring eMessage offer integration with IBM Campaign" on page 141

## Integrating IBM Digital Analytics and Campaign

When Digital Analytics is integrated with Campaign, online segments defined in Digital Analytics can be used in campaigns.

### About this task

**Note:** This topic pertains specifically to IBM Digital Analytics, not IBM Digital Analytics for On Premises.

The integration between Digital Analytics and Campaign relies on several components:

- An integration service that provides access to Digital Analytics APIs and acts as the integration point between the two products.
- A translation table that tells Campaign which Digital Analytics keys correspond to which Campaign Audience IDs.
- A Marketing Platform user account configured with the necessary credentials for Campaign to access the integration service.
- Configuration settings that inform Campaign about the integration service, translation table, and credentials.

The following table explains how to configure the necessary components.

*Table 49. Integrating Digital Analytics and Campaign*

| Task                                                                     | Details                                                                                                                           | For documentation                                   |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Optionally, configure SSO so users can easily navigate between products. | Single sign-on (SSO) lets users access Digital Analytics from within the IBM EMM user interface without being prompted to log in. | <i>IBM Marketing Platform Administrator's Guide</i> |

*Table 49. Integrating Digital Analytics and Campaign (continued)*

| Task                                                                                        | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | For documentation                                                |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Configure a translation table to translate Digital Analytics keys to Campaign Audience IDs. | <p>This task is typically performed by IT or other technical personnel.</p> <p>The translation table consists of at least two columns, one for the Digital Analytics registrationid (online key) and one or more for each Campaign Audience ID (offline key). The translation table must be configured on the user data source from which Campaign selections take place.</p> <p>Note the table name, because you need to specify it in the Campaign configuration settings.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | “About the translation table” on page 146                        |
| Configure the segment integration                                                           | <p>For each Campaign partition where you want to enable integration, choose <b>Settings &gt; Configuration &gt; Campaign &gt; partitions &gt; partition[n] &gt; Coremetrics</b> and configure these settings:</p> <ul style="list-style-type: none"> <li>• <b>ServiceURL</b>: Identifies the integration service (<a href="https://export.coremetrics.com/eb/segmentapi/1.0/api.do">https://export.coremetrics.com/eb/segmentapi/1.0/api.do</a>).</li> <li>• <b>CoremetricsKey</b>: Identifies the value used in the translation table (registrationid).</li> <li>• <b>ClientID</b>: The unique Digital Analytics ID assigned to your company.</li> <li>• <b>TranslationTableName</b>: The name of the translation table.</li> <li>• <b>ASMUserForCredentials</b>: The Marketing Platform account allowed to access the integration service. The default is <code>asm_admin</code>.</li> <li>• <b>ASMDatasourceForCredentials</b>: The data source assigned to the Marketing Platform account identified in the <b>ASMUserForCredentials</b> setting. The default is <code>UC_CM_ACCESS</code>.</li> </ul> | “Campaign > partitions > partition[n] > Coremetrics” on page 289 |
| Assign credentials to a Marketing Platform account                                          | <p>Choose <b>Settings &gt; Users</b>, select the user that is defined in the <b>ASMUserForCredentials</b> configuration setting, click the <b>Edit Data Sources</b> link, and add a new data source:</p> <ul style="list-style-type: none"> <li>• The Data Source name must exactly match the <b>ASMDatasourceForCredentials</b> defined in the configuration settings (for example, <code>UC_CM_ACCESS</code>).</li> <li>• The Data Source Login and Password are the credentials associated with your Digital Analytics Client ID.</li> </ul> <p>This “data source” is the mechanism that Marketing Platform uses to store the credentials that provide access to the integration service.</p>                                                                                                                                                                                                                                                                                                                                                                                                           | <i>IBM Marketing Platform Administrator’s Guide</i>              |

Table 49. Integrating Digital Analytics and Campaign (continued)

| Task                                                                           | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | For documentation                                                      |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Map the translation table.                                                     | <p>Mapping a table is how you make Digital Analytics data accessible to Campaign.</p> <p>Choose <b>Settings &gt; Campaign Settings &gt; Manage Table Mappings</b>, then follow the prompts to specify the data source corresponding to the user database where the user tables reside (<i>not</i> the "data source" you defined for ASMDatasourceForCredentials).</p> <p>Select the translation table, the table fields, and audience levels.</p> <p>Store the table mapping in the default catalog (default.cat) if you want it to be available for use in all flowcharts.</p>                                                                                                               | "Mapping the translation table" on page 148                            |
| Specify which Campaign users can use Digital Analytics segments in flowcharts. | <p>Choose <b>Settings &gt; User Roles &amp; Permissions &gt; Campaign &gt; Partition[n] &gt; Global Policy</b>. Click <b>Add Roles and Assign Permissions</b>, then <b>Save and Edit Permissions</b>. Under <b>Campaigns</b>, adjust access for <b>Access Coremetrics Segments</b>.</p> <p>By default, access is "Granted" for the Folder Owner, Owner, and Admin roles, and "Not Granted" for the Execute, Design, and Review roles.</p> <p><b>Note:</b> When determining access, SSO is not considered. If you are using single sign-on and you want Campaign users to be able to access Digital Analytics segments, you still have to provide segment access by setting Global Policy.</p> | "Implementing security policies" on page 11                            |
| Turn on the integration for individual Campaign partitions.                    | Choose <b>Settings &gt; Configuration &gt; Campaign   partitions   partition[n]   server   internal   UC_CM_integration</b> . When this option is set to Yes, the Select process box provides the option to use <b>Digital Analytics Segments</b> as Input.                                                                                                                                                                                                                                                                                                                                                                                                                                   | "Campaign   partitions   partition[n]   server   internal" on page 284 |
| Configure permissions in your Digital Analytics product(s).                    | If the Campaign-related permissions are not set, <b>Digital Analytics Segments</b> are not available as input in a Select process box in a Campaign flowchart.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The Digital Analytics product documentation.                           |
| Define segments in Digital Analytics and make them available to Campaign.      | <p>Use one of the following products to export segments to Campaign:</p> <ul style="list-style-type: none"> <li>• Digital Analytics</li> <li>• Explore</li> <li>• Export</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | The Digital Analytics product documentation.                           |

*Table 49. Integrating Digital Analytics and Campaign (continued)*

| Task                                                                         | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | For documentation                |
|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Now Campaign users can start using Digital Analytics segments in flowcharts. | <p>Add a Select process box to a flowchart and choose <b>Digital Analytics Segments</b> as the <b>Input</b>. Select a <b>Client ID</b> and a segment, specify a date range, then run the flowchart.</p> <p>When the Select process runs:</p> <ul style="list-style-type: none"> <li>• It pulls data from Digital Analytics via the integration service. The segment data is simply a list of registration IDs.</li> <li>• Using the mapped translation table, the registration IDs are converted to Campaign Audience IDs.</li> <li>• The Audience IDs are then available for use in downstream processes.</li> </ul> | <i>IBM Campaign User's Guide</i> |

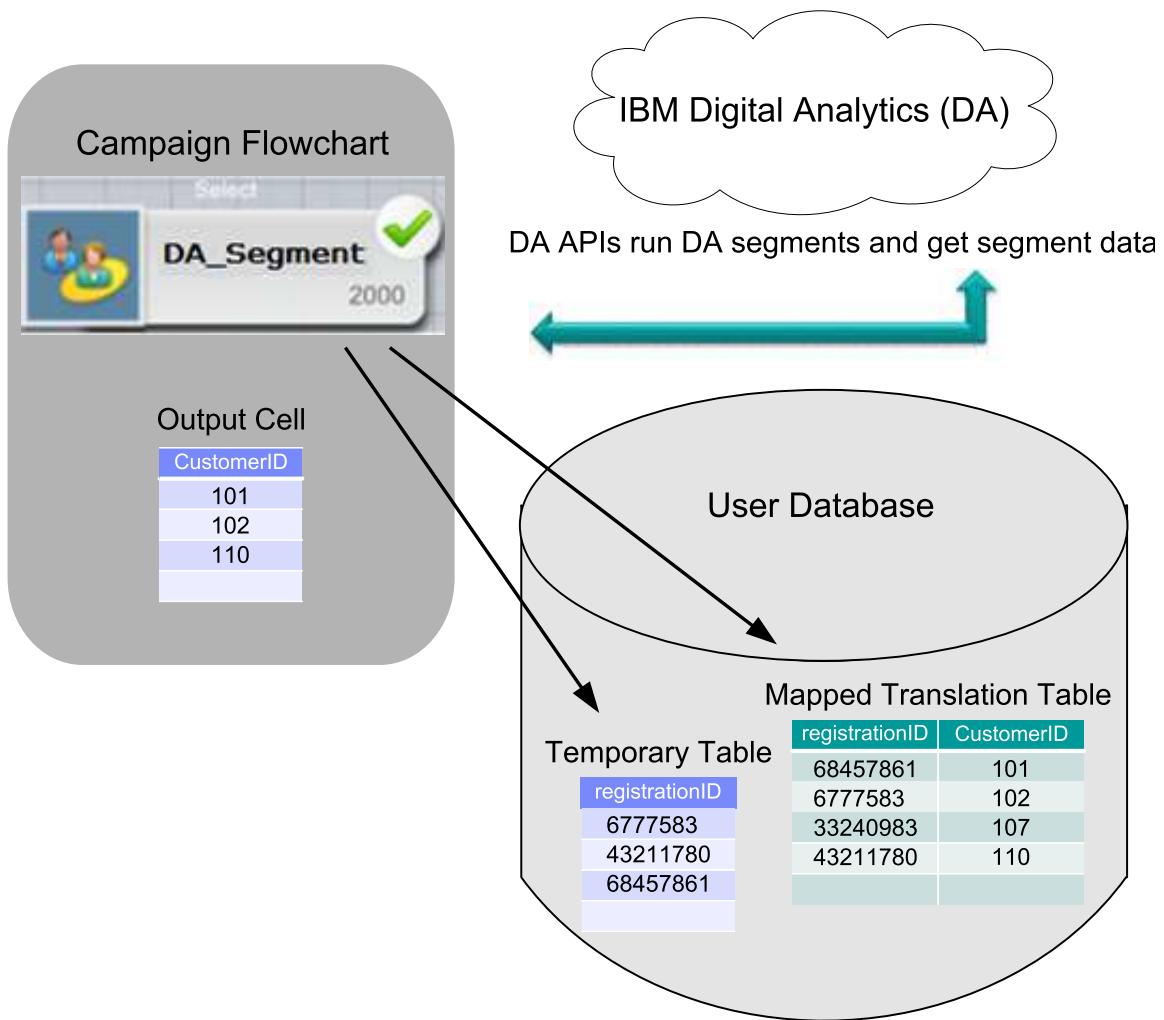
**Related concepts:**

Chapter 15, “IBM Campaign integration with other IBM products,” on page 139

## About the translation table

A translation table is typically configured by IT or other technical personnel when the Digital Analytics-Campaign integration is initially configured.

The translation table tells Campaign which Digital Analytics IDs correspond to which Campaign Audience IDs. A translation table is required when running a flowchart that includes Digital Analytics segments as input. Without the table, Campaign does not know how to translate IDs from one product to the other.



A translation table must adhere to the following guidelines:

- The translation table must be configured on the user data source from which Campaign selections take place. This data source must allow table creation permission so Campaign can create a temporary table for the list of IDs that meet the segment definition.
- A translation table consists of at least two columns, one for the Digital Analytics key and one or more for the corresponding Campaign Audience ID.
- For this release, the Digital Analytics key must be the exact value: registrationid.
- The data type of the registrationid in the translation table must be the same data type defined for the registrationID in Digital Analytics. For example, they must both be VARCHAR.
- The Campaign Audience ID is defined by the customer when the integration is configured. For example, it might be CustomerID.
- If your primary Campaign audience consists of multiple physical keys (compound keys), the translation table must contain the same number of columns for that audience. For example, if your primary audience consists of the keys CustomerID and AccountID, then the translation table must have three columns: 1) The Digital Analytics key 2) CustomerID 3) AccountID. This requirement pertains only if you are mapping for a compound audience.

**Note:** For performance and storage reasons, the best practice is to use single-key audiences.

- You must ensure that the translation table name and the Digital Analytics key (registrationid) defined in the table are specified in the Campaign configuration settings. The values used in the

translation table must exactly match the values defined in the configuration settings. See “Campaign | partitions | partition[n] | Coremetrics” on page 289.

- The method for populating a translation table depends on each customer's specific requirements and configuration. A common logic needs to be determined that allows for identifying which Digital Analytics registration ID matches which Campaign Audience ID. Your implementation partner can assist you in this process.
- The translation table must be mapped in Campaign. See “Mapping the translation table.”
- When a flowchart runs, Campaign detects if there is a mismatch between the number of Digital Analytics keys and Campaign Audience IDs in the mapped translation table. This situation can occur, for example, if the ETL routines are still running). In this case, Campaign writes a message to the flowchart log file asking you to verify that the mapped translation table contains updated records. To resolve this situation, (re)match the online and offline keys according to your corporate policy and repopulate the translation table with up-to-date data. The user must rerun the flowchart after the mapped translation table is updated.

## Mapping the translation table

Mapping the translation table is how you make Digital Analytics segment data accessible in Campaign. The table mapping identifies the data source, the translation table name and location, the table fields, audience levels, and data for Campaign to use.

### Before you begin

Before mapping the table, you must configure the translation table, configure integration settings, and assign credentials to a Marketing Platform account. For instructions, see “Integrating IBM Digital Analytics and Campaign” on page 143.

### About this task

This task is typically performed by IT or other technical personnel when the Digital Analytics-Campaign integration is initially configured. However, tables can be mapped or remapped by any user with appropriate permissions, at any time.

### Procedure

1. Confirm that Campaign is configured properly to access the necessary user tables: See “Testing user table access” on page 24.
2. Map the translation table by following the instructions and guidelines in “User table administration tasks” on page 27.  
To summarize: You map a new base record table to make data accessible to processes in flowcharts. You can map (create) a new base record table when editing a flowchart (using **Admin > Tables**) or by selecting **Settings > Campaign Settings > Manage Table Mappings**.
3. Save the mapping information in a table catalog for reuse. This way, the table mapping needs to be done only once, and Campaign users who want to include Digital Analytics segments can load the saved catalog to get the mapping information directly. If you want the information to be available for use in all flowcharts, store it in the default catalog (default.cat). See “Table catalog administrative tasks” on page 43.
4. Whenever there is a change to the physical table (for example, if columns are added or deleted), you must remap the table. If you do not remap the table, flowcharts using Digital Analytics segments will return an error at run time indicating that the table schema has changed.

**Important:** When you map or remap a table, the **IBM Campaign Table Name** assigned in the Table Definition wizard must exactly match the **TranslationTableName** defined in the Campaign configuration settings (see “Campaign | partitions | partition[n] | Coremetrics” on page 289). If you do not edit the table name when using the Table Definition wizard, the names will match.

---

## Chapter 16. IBM Campaign utilities

IBM Campaign provides administrative utilities to manage the listener and server manager and to perform other important activities.

### Campaign Listener (unica\_aclsxr)

The Campaign listener (unica\_aclsxr) is a utility that allows clients to connect to the Campaign web application. The Campaign listener must be running, in addition to the web application server in which Campaign is deployed and running, before users who log in to the IBM EMM can work with any Campaign features.

The listener automatically spawns a separate unica\_acsvr process for each login and each active flowchart. For example, if one user logs in and then opens a flowchart, the listener spawns two instances of unica\_acsvr.exe.

You can start and stop the listener manually or automatically.

To have the Campaign server start automatically with the system on which Campaign is running:

- If Campaign is installed on a Windows server, set up the listener as a service. See “Installing the Campaign server as a Windows service” on page 151 for details.
- If Campaign is installed on a UNIX server, set up the listener as part of the init process. See your UNIX distribution's documentation for information about setting up the init process.

### Campaign listener requirements

The Campaign listener requires that Marketing Platform be running.

The listener connects to Marketing Platform using the value of the configurationServerBaseUrl property in the config.xml file, located in the conf directory of your Campaign installation. Typically, this value is `http://hostname:7001/Unica`. If Marketing Platform is not running, the Campaign listener will fail to start.

As the listener is dependent on Marketing Platform to start successfully, you should ensure that your web application server is running and the Marketing Platform web application is deployed before starting the listener.

### Campaign listener syntax

The unica\_aclsxr utility has the following syntax:

```
unica_aclsxr [-i] {[-n] | [-r]}[-u] [-v]
```

### Campaign listener options

The unica\_aclsxr utility supports the following options:

*Table 50. Campaign listener options*

| Option | Description                                                                                          |
|--------|------------------------------------------------------------------------------------------------------|
| -i     | This option installs the listener utility as a service (Windows only).                               |
| -n     | This option is the opposite of -r. It prevents the listener from checking the unica_aclsxr.udb file. |

*Table 50. Campaign listener options (continued)*

| Option           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -r (the default) | This option starts a recovery run by forcing the listener to find and register any running flowcharts. Use this parameter if for some reason the listener goes down and you have flowcharts (that is, acsvr processes) still running. The listener stores flowchart information in a text file (unica_acsnr.udb). When you use the -r option, the listener checks the file for running flowcharts and re-establishes the connections.<br><br>Even if the running flowchart processes (flowchart and branch production runs only) went down with the listener, the listener reloads those flowcharts and resumes running them from the last saved checkpoints. |
| -u               | This option uninstalls the listener utility as a service (Windows only).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| -v               | This option displays the current version of the listener.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## Starting and stopping the listener

If you have set up the listener as a service (on Windows) or as part of the init process (on UNIX) then the listener is automatically started when you start the server. You can also start and stop the listener manually, as described in this section.

### To start the Campaign listener on a Windows system

#### About this task

To start the Campaign listener on a supported Windows system:

#### Procedure

1. Make sure that the web application server on which Campaign is deployed is up and running.
2. Start the Campaign listener by running the cmpServer.bat script located in the bin directory under your Campaign installation.

#### Results

When the unica\_acsnr.exe process appears on the Windows Task Manager Processes tab, the server has started successfully.

### To stop the Campaign listener on a Windows system

#### About this task

To stop the Campaign listener on a supported Windows system:

#### Procedure

1. Go to the Campaign bin directory and run the following command: svrstop -p 4664  
If you are prompted for the CAMPAIGN\_HOME environment variable, set it as shown in this example, then run the svrstop command again:  

```
set CAMPAIGN_HOME=C:\<installation_path>\Campaign
```
2. At the Login prompt, enter the user name of a Campaign user.
3. At the Password prompt, enter the password for the Campaign user you have entered.

#### Results

The Campaign listener process closes. When the listener is not running, users who connect to IBM EMM cannot open any Campaign features.

## **Installing the Campaign server as a Windows service**

You can install the Campaign server as a Windows service so that it starts automatically whenever you start Windows. The Campaign server computes and processes data.

### **About this task**

Complete the following steps to install the Campaign server as a Windows service:

### **Procedure**

1. Add the bin directory under the Campaign installation directory to the user PATH environment variable. If the PATH environment variable does not exist for the user, create it.  
Make sure that you add this path to the user PATH variable, not the system PATH variable.  
If the Campaign bin directory exists in the system PATH environment variable, remove it. You do not need it in the system PATH environment variable to install the Campaign server as a service.
2. If you are upgrading from a previous version of Campaign that had the server installed as a service, stop the service.
3. Open a command window and change directories to the bin directory under your Campaign installation.
4. Run the following command to create the Campaign server service: `unica_aclsnr -i`  
The service is created.

**Note:** Make sure CAMPAIGN\_HOME has been created as a system environment variable before starting the Campaign server service.

5. Open the Unica Campaign Listener Service properties dialog box. Click **Log On** tab.
6. Select **This account**.
7. Enter the user name (system user) and password, and start the services.

## **To start the listener on UNIX systems**

### **About this task**

Enter the following command at the system prompt:

```
rc.unica_ac start
```

## **To stop the listener on UNIX systems**

### **About this task**

Enter the following command at the system prompt:

```
rc.unica_ac stop
```

## **Campaign listener log**

The listener process creates a log file called `unica_aclsnr.log`.

---

## **Campaign Listener Shutdown utility (svrstop)**

Use the Campaign listener shutdown utility (svrstop) to perform the following tasks:

- Shut down the Campaign listener
- Shut down the Contact Optimization listener

Note that the best practice is to start up and shut down the Contact Optimization listener using the ACOServer script, which uses the svrstop utility. See the *IBM Contact Optimization Installation Guide* for details.

**Note:** The Listener Shutdown utility can be used as a standalone command to stop the specified listener, or in a script if you also include the necessary authentication arguments.

## Campaign `svrstop` utility reference

Use the `svrstop` utility to stop the Campaign listener or the Contact Optimization listener, running on your local server or a server elsewhere on your network, for which you have the proper credentials.

The `svrstop` utility is installed automatically on every Campaign server in the `<install_dir>/Campaign/bin` directory, where `<install_dir>` is the parent IBM directory in which Campaign is installed.

The `svrstop` utility uses the following syntax:

```
svrstop [-g] [-p <port> [-S]] [-s <serverName>] [-y <user>] [-z <password>] [-v] [-P <product>]
```

Each argument is described in the following table:

*Table 51. svrstop syntax arguments*

| Argument                           | Description                                                                                                                                                                                                                                              |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>-g</code>                    | Pings the specified server to determine whether the listener is active.                                                                                                                                                                                  |
| <code>-p &lt;port&gt;</code>       | The port on which the listener is running. Set <code>&lt;port&gt;</code> to 4664 to shut down the Campaign listener. Set <code>&lt;port&gt;</code> to 2882 to shut down the Optimize listener.                                                           |
| <code>-S</code>                    | Specifies that the listener specified by the <code>-p</code> or <code>-P</code> argument is using SSL.                                                                                                                                                   |
| <code>-s &lt;serverName&gt;</code> | The host name of the server on which the listener is running, such as <code>optimizeServer</code> or <code>campaignServer.example.com</code> . If you omit this argument, the utility attempts to shut down the specified listener on your local server. |
| <code>-y &lt;user&gt;</code>       | The IBM EMM user with Campaign administrator privileges to shut down the specified listener. If you omit this value, you will be prompted for a user when you run the utility.                                                                           |
| <code>-z &lt;password&gt;</code>   | The password for the IBM EMM user you specified with the <code>-y</code> argument. If you omit this value, you will be prompted for a password when you run the utility.                                                                                 |
| <code>-v</code>                    | Reports the version information for the <code>svrstop</code> utility and exits without further actions.                                                                                                                                                  |
| <code>-P &lt;product&gt;</code>    | The product whose listener you want to shut down. Set this to "Optimize" to shut down the Contact Optimization listener. Any other value for this argument, or omitting this argument, shuts down the Campaign listener.                                 |

```
svrstop -y asm_admin -z password -p 4664
```

## To use the `svrstop` utility to shut down the Campaign listener

From a command prompt on the Campaign server, you can run the `svrstop` utility to stop the Campaign listener running on that server. To stop the Campaign listener running on another server, use the `-s` argument, as in `-s servername.example.com`, and provide the required authentication.

### Procedure

1. Open a command prompt on the Campaign server.
2. Make sure that the `CAMPAIGN_HOME` environment variable is set to `<install_dir>/Campaign/bin`, where `<install_dir>` is the parent directory under which Campaign is installed.
3. Enter the following command:

```
svrstop -p 4664
```

The `-p` argument specifies the port on which the listener is accepting connections. Port 4664 is the port that Campaign uses internally to accept connections from the web client, so the `-p 4664` argument indicates you are stopping the Campaign listener.

- When prompted, provide the name and password of any IBM EMM user with privileges to stop the listener.

Optionally, you could include -y <username> and -z <password> as arguments with the `svrstop` command to prevent the user name and password prompts from appearing.

## Results

When you enter the required information, the Campaign listener is shut down.

## To use the `svrstop` utility to shut down the Contact Optimization listener

From a command prompt on the Campaign server, you can run the `svrstop` utility to stop the Contact Optimization listener running on that server. To stop the Contact Optimization listener running on another server, use the -s argument, as in -s `servername.example.com`, and provide the required authentication.

### Procedure

- Open a command prompt on the Campaign server.
- Make sure that the `CAMPAIGN_HOME` environment variable is set to `<install_dir>/Campaign/bin`, where `<install_dir>` is the parent directory under which Campaign is installed.
- Enter the following command:  
`svrstop -P "Optimize"`  
The -P argument specifies the product whose listener you want to shut down. Alternatively, you could enter -p 2882 to shut down the listener using the internal port number 2882, which would also indicate the Contact Optimization listener.
- When prompted, provide the name and password of anyIBM EMM user with privileges to stop the listener.  
Optionally, you could include -y <username> and -z <password> as arguments with the `svrstop` command to prevent the user name and password prompts from appearing.

## Results

When you enter the required information, the Contact Optimization listener is shut down.

---

## Campaign Server Manager (`unica_svradm`)

The Campaign Server Manager (`unica_svradm`) is a command-line server management utility that allows you to perform the following tasks:

- Connect to the Campaign listener
- View all currently open flowcharts and their states
- View and set environment variables
- Run flowcharts
- Suspend/resume flowcharts
- Stop flowcharts
- Kill runaway flowcharts

When you start the `unica_svradm` utility, it checks whether the listener is running.

If the listener is running, the connection automatically establishes and the names of the server and the port number are displayed.

# To run the Campaign Server Manager

## Before you begin

Before you can run the Campaign Server Manager:

- The listener must be running.
- The UNICA\_PLATFORM\_HOME and CAMPAIGN\_HOME environment variables must be set for the command window you are using.
- Your IBM EMM login must have the **Run Svradm cmdline** permission.

## Procedure

1. At a command prompt, enter:

```
unica_svradm -s listener_server -y Unica_Marketing_username -z Unica_Marketing_password
```

2. At the following prompt:

```
unica_svradm[server:port]>
```

issue the commands described in “Campaign Server Manager commands.”

## Campaign Server Manager commands

The Campaign Server Manager supports the commands described in the following section. To view the list of all available commands for `unica_svradm`, use the `Help` command.

**Note:** Commands that take a flowchart name as an argument will operate on all flowcharts in all campaigns and sessions that have the same name. Use relative flowchart paths for commands that take flowchart paths.

The Campaign Server Manager commands are not case-sensitive.

### Cap (Distributed Marketing)

`Cap`

The Cap command prevents additional Distributed Marketing flowcharts from starting, while allowing those currently running to complete. Unset with the `uncap` command.

### Changeowner

```
Changeowner -o <olduserid> -n <newuserid> -p <policyid>
```

The Changeowner command allows you to change the owner of a user's campaigns. You might use this command, for example, if you are deleting or disabling a user and want to re-assign ownership of that user's campaigns to a new user.

| Option                            | Description                                                  |
|-----------------------------------|--------------------------------------------------------------|
| <code>-o &lt;olduserid&gt;</code> | User ID of the current owner of the campaign.                |
| <code>-n &lt;newuserid&gt;</code> | User ID of the new owner you want to assign to the campaign. |
| <code>-p &lt;policyid&gt;</code>  | Policy ID of the security policy to apply to the campaign.   |

### Connect

```
Connect[-f] [-s server] [-p port] [-S]
```

The Connect command connects to the listener running on the *server* at *port* number. You can connect to only one server at a time. To connect to another server, use `-f` (forced) connection.

If a port is specified using the `-p` option, you may also include the `-S` option to indicate that an SSL connection should be established. If a port is specified using the `-p` option but `-S` is not included, then the connection will not use SSL.

## **Disconnect**

`Disconnect`

The `Disconnect` command disconnects from the server. This command is available only if you are connected to a server.

**Note:** To connect to another server, you can use the `-f` parameter, or disconnect first, and then connect to the new server.

## **Exit**

`Exit`

The `Exit` command logs you out of the Campaign Server Manager.

## **Help**

`Help`

The `Help` command displays the available commands.

## **Kill**

`Kill -p pid`

The `Kill` command issues a "kill-p" to the *pid* specified (the Windows NT equivalent is issued on Windows NT). This is intended for run-away processes.

## **Loglevel**

`Loglevel [high | low | medium | all]`

The `Loglevel` command sets the listener logging level for Campaign or, if you enter the command without any arguments, displays the current logging level. If you modify the logging level, the change takes effect immediately, so there is no need to restart the listener after entering this command.

## **Quit**

`Quit`

The `Quit` command logs you out of the Campaign Server Manager.

## **Resume**

`Resume {-s flowchart_name |-p pid | -a}`

The `Resume` command resumes the running of one or more flowcharts.

- Use `-s` to resume a single, specific flowchart by name
- Use `-p` to resume the specified process ID
- Use `-a` to resume all suspended flowcharts

## **Run**

`Run -p relative-path-from-partition-root -u Unica_Marketing_Platform_user_name [-h partition] [-c catalogFile] [-s] [-m]`

The `Run` command opens and runs a specific single flowchart file, where relative flowchart path and file name, partition, catalog file and user name are given.

You can use the following syntax:

```
[-S dataSource -U db_User -P db_Password]*
```

**Note:** On Unix platforms, flowcharts will be executed by the Unix account specified as the username's alternate login. On Windows NT, the flowchart is run as the administrator's user login.

## Options for the Run command

| Option | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -h     | Specifies the partition name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| -l     | Indicates an alternative location in which to store the process log file. This option should be followed by a path relative to the Campaign installation, as in \partition1\logs. Do not specify a file name with this option, because the file name is assigned automatically.<br><b>Note:</b> Using this option also requires that the AllowCustomLogPath configuration property in the Campaign > partitions > partition[n] > server > logging category is enabled. See the <i>Marketing Platform Administrator's Guide</i> for details on setting configuration properties. |
| -m     | Specifies that you are running multiple flowcharts. This option is not supported for batch flowcharts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| -p     | Specifies the relative path from the partition root                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| -P     | Specifies the data source password                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| -s     | Specifies a synchronous run                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| -S     | Specifies the data source                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| -u     | Specifies the IBM EMM user name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| -U     | Specifies the data source user name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| -v     | Specifies the user variable values for a flowchart directly in the command, using this syntax:<br>[-v "varname='[']value['']"]*                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| -x     | Specifies the user variable values for a flowchart in an XML file, using this syntax:<br>[-x xml-filename]                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Example of XML file for -x argument

This sample XML file sets the user variable named UVAcctType to the value Gold.

**Note:** Campaign sets the user variable's value exactly as written in this file. Do not enclose the value in quotation marks if the value should not contain quotation marks.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
 <UserVariables>
 <UserVar Name="UVAcctType">
 <Values>
 <Option>Gold</Option>
 </Values>
 </UserVar>
 </UserVariables>
```

## Save

```
Save {-s flowchart_name|-p pid|-a}
```

The Save command saves the current state of an active flowchart.

| Option | Description                                                                       |
|--------|-----------------------------------------------------------------------------------|
| -s     | Saves a single, specific flowchart by name defined by the <i>flowchart-name</i> . |
| -p     | Saves a flowchart defined by the pid.                                             |
| -a     | Saves all running flowcharts.                                                     |

## Set

Set [variable[=value]]

The Set command displays and sets environment variables. Omit the value to view the current value and provide it to set the specified variable.

## Shutdown

Shutdown [-f]

The Shutdown command shuts down the listener.

The system checks for any running flowchart. If running flowcharts are found, a warning message displays, asking for confirmation of shutdown.

To override and force shutdown, use -f .

## Status

Status [-d | -i] [-u] [-v | -c]]

The Status command displays information both about running and suspended flowcharts (with flowchart name, owner, and file location).

| Option | Description                                                                                                                                                                                                                                                                                                     |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| d      | Adds Server ID, Campaign Code, and Campaign ID to the displayed output.                                                                                                                                                                                                                                         |
| i      | Displays the process ID (PID) only                                                                                                                                                                                                                                                                              |
| u      | Use this option when the displayed data contains non-ASCII characters.                                                                                                                                                                                                                                          |
| v      | Verifies the existence of the unica_acsvr processes before displaying output, which prevents crashed processes from being displayed in the Status list.                                                                                                                                                         |
| c      | Verifies the existence of the unica_acsvr processes before displaying output, which prevents crashed processes from being displayed in the Status list. Option c also instructs the listener to clean up any temporary files in the partition temp directory that are associated with crashed server processes. |

The Status command identifies the processes as follows:

- c - connected (client is connected to the listener process -- may be running, may not)
- d - disconnected (client is closed but the flowchart is running in the background)
- o - orphaned (client is not connected to the flowchart and it is not running in the background -- this is a lost process that cannot be reconnected to the listener and should be killed so people can log into it)

**Note:** A value of <no writer> in the WRITER column refers to a server process that does not have a client in edit mode, which may happen when no client is connected, and for login sessions.

## Stop

Stop [-f] {-s flowchart\_name |-p pid | -a}

The Stop command checks for active clients, warns if any are present (this can be overridden with the **-f** force option), and stops the IBM server processes.

| Option    | Description                                                                     |
|-----------|---------------------------------------------------------------------------------|
| <b>-s</b> | Stops a single, specific flowchart by name defined by the <i>flowchart_name</i> |
| <b>-p</b> | Stops flowcharts by <i>pid</i> .                                                |
| <b>-a</b> | Stops all running flowcharts.                                                   |

To override and force stop, use **-f**.

## Suspend

`Suspend [-f] {-s flowchart_name | -p pid | -a}`

The Suspend command allows you to "quiesce" a running campaign and save the state for later restart with the matching command, Resume. All flowcharts currently running an output process complete data export activities and the flowchart is then saved as a paused flowchart. This causes the least amount of work to be lost and preserves data integrity of output files. If flowcharts must be stopped immediately, issue a Save command followed by Stop.

| Option    | Description                                                                                |
|-----------|--------------------------------------------------------------------------------------------|
| <b>-s</b> | Suspends a single, specific flowchart by name defined by the <i>&lt;flowchart_name&gt;</i> |
| <b>-p</b> | Suspends flowcharts specified by <i>pid</i>                                                |
| <b>-a</b> | Suspends all running flowcharts                                                            |

The system finishes running any currently running processes, and does not allow any subsequent processes to start. The flowchart is saved and written to the list of suspended flowcharts.

The **-f** parameter allows you to force a suspend. Once suspended, the flowchart is written to the listener as a suspended flowchart.

**Note:** If the flowchart is not running at the time of Suspend, it is saved, but not written to the listener and cannot be started with Resume.

## Uncap (Distributed Marketing)

`Uncap`

The Uncap command revokes the Cap (Distributed Marketing) command. See Cap (Distributed Marketing).

## Version

`Version`

The Version command displays the version of `unica_svradm` and the version of the listener process to which you are connected. You can use this command to help troubleshoot a version mismatch error.

## To kill a running flowchart

### About this task

You may need to kill a flowchart to immediately stop it. Because flowchart names can be the same in different campaigns and sessions, you should follow the instructions in this section.

## Procedure

- At the command prompt, enter the following command to obtain a list of running flowcharts on the server:

```
% unica_svradm status
```

Note that even if the flowchart names are the same, you can use the absolute path to uniquely identify a flowchart.

- Note the PID associated with the flowchart that you want to kill.
- To kill the flowchart, enter the following command at the command prompt, replacing *PID* with the PID of the flowchart that you want to kill:

```
unica_svradm kill -p PID
```

## Results

When a flowchart is killed, its buffer is not flushed to disk. Instead, the last checkpoint copy is saved.

---

## Campaign session utility (unica\_acsesutil)

Use the Campaign session utility (`unica_acsesutil`) to perform the following tasks:

- import and export campaigns, sessions, and flowcharts from one server to another;
- pass in a flowchart file or table catalog as input and generate a table catalog in either binary or XML format as output;
- update record counts and lists of distinct values for a session or a catalog.

**Note:** The `unica_acsesutil` utility only supports importing and exporting objects between servers with the same version of Campaign installed.

## Environment variables required for unica\_acsesutil

You must set some environment variables to run `unica_acsesutil`.

For all operating systems, you must set the following environment variables.

- `UNICA_PLATFORM_HOME`
- `CAMPAIGN_HOME`

On UNIX only, set the database-specific library path appropriate to your UNIX platform, as follows.

- `LIBPATH` for AIX®
- `SHLIB_PATH` for HP-UX
- `LD_LIBRARY_PATH` for Linux or Sun Solaris

## Campaign session utility use cases

Use the session utility (`unica_acsesutil`) to perform the following tasks:

- “Exporting and importing objects between servers”
- “Backing up sessions” on page 161
- “Updating record counts and lists of distinct values” on page 161
- “Manipulating table catalogs” on page 162
- “Documenting catalog contents” on page 162

## Exporting and importing objects between servers

**Note:** The `unica_acsesutil` utility only supports importing and exporting objects between servers with the same version of Campaign installed.

Use `unica_acsesutil` to export and import campaigns, sessions, and flowcharts from one server to another, with the following limitations:

- Exporting campaigns or sessions exports only the associated system tables and metadata. Associated flowcharts must be exported separately; you can export flowcharts only one at a time.
- Before you can import a flowchart to a target system, its flowchart (.ses) file, as well as its associated campaign or session, must already exist on the target system. Therefore you should export and import all campaigns and sessions before exporting and importing their associated flowcharts, and you must manually copy the flowchart (.ses) files to the target server.
- Using the `-s` parameter to specify a Campaign flowchart (.ses) file on which to operate is required regardless of the object type you are exporting or importing. When exporting or importing a campaign or session with multiple associated flowcharts, any of the associated .ses files can be used.
- When you attempt to import eMessage or Distributed Marketing flowcharts, `unica_acsesutil` checks to see that the relevant application is installed on the target system. If the required application is not installed on the target system, `unica_acsesutil` generates an error and the selected objects are not imported.

**About the exporting and importing process:** The process of moving objects between servers using `unica_acsesutil` is done in several stages, with some manual steps required:

1. Using the information in the flowchart (.ses) file specified with the `-s` option, the `unica_acsesutil` utility writes exported objects and information to an intermediate output file, specified by the `-e` option.
2. You manually move (copy) the output file to the target server.
3. On the target server, you import the `unica_acsesutil` output file using the `-i` option.

#### **About conflicts with existing data when importing:**

When `unica_acsesutil` imports data into the system tables (for example, session info, triggers, or custom macros), it checks whether each object already exists on the target system.

The check is done based on internal object ID. That is, for campaigns, if the internal campaign ID is not unique, `unica_acsesutil` asks if the campaign should be overwritten. If you choose to overwrite the campaign, `unica_acsesutil` removes all data associated with the existing campaign on the target server, and then imports the new campaign. Similarly, when importing offers, `unica_acsesutil` checks the internal Offer ID for uniqueness.

If an object with the same ID already exists, you have the option to skip that object in the import process or to replace the existing object.

**Note:** If you know that a conflicting object (such as a campaign, session, or offer) already exists on the target system prior to import, you should consider deleting the object before running the import, to avoid being prompted to resolve the conflict.

#### **To export a campaign, session, or flowchart:**

##### **About this task**

```
unica_acsesutil -s <sesFileName> -h <partitionName>
 -e <exportFileName> [-f { flowchart | campaign | session }]
 [-S <datasource> -U <DBusername> -P <DBpassword>]
```

#### **Example**

##### **Example 1: export campaign**

```
unica_acsesutil -s "campaigns/Campaign C000001_C000001.ses" -h partition1
 -e campaign.exp -f campaign
```

This example generates an output file named `campaign.exp` for exporting the campaign associated with Flowchart1, based on the "campaigns/Campaign C000001\_C000001.ses" file located on partition1.

#### **Example 2: export flowchart**

```
unica_acsesutil -s "campaigns/Campaign C000001_C000001_Flowchart1.ses"
-h partition1 -e flowchart.exp -f flowchart
```

This example generates an output file named `flowchart.exp` for exporting flowchart C000001\_Flowchart1, based on the "campaigns/Campaign C000001\_C000001\_Flowchart1.ses" file located on partition1.

#### **To import a campaign, session, or flowchart:**

##### **About this task**

**Note:** Before you can import a flowchart, its flowchart (.ses) file, as well as its associated campaign or session, must exist on the target system. Therefore, before importing a flowchart, you must: 1) manually copy the associated .ses file from the source system to the target system, and 2) import the associated campaign or session to the target system.

```
unica_acsesutil -s <sesFileName> -h <partitionName>
-i <importFileName> [-f { flowchart | campaign | session }]
[-b { abort | replace | skip }]
[-S <datasource> -U <DBusername> -P <DBpassword>]
```

#### **Example**

##### **Example 1: import campaign**

```
unica_acsesutil -s "campaigns/Campaign C000001_C000001.ses" -h partition1
-i campaign.exp -f campaign
```

This example uses the previously generated `campaign.exp` file and imports Campaign C000001 data to the system tables on the target system, as well as to the "campaigns/Campaign C000001\_C000001.ses" file located on partition1.

##### **Example 2: import flowchart**

```
unica_acsesutil -s "campaigns/Campaign C000001_C000001_Flowchart1.ses"
-h partition1 -i import.exp -f flowchart
```

This example uses the previously generated `flowchart.exp` file and imports the data associated with Campaign C000001\_Flowchart1 to the system tables on the target system, as well as to the "campaigns/Campaign C000001\_C000001\_Flowchart1.ses" file located on partition1.

#### **Backing up sessions**

Use the Campaign session utility (`unica_acsesutil`) to back up sessions.

You can write a script to export every file in the session directory and import the files to a backup system.

#### **Updating record counts and lists of distinct values**

Use the Campaign session utility (`unica_acsesutil`) to update record counts or lists of distinct values, as well as to schedule automatic re-computation of those counts.

Three parameters are available to indicate what type of counts to re-compute:

- `-n` -- recompute record counts only
- `-l` -- recompute list of distinct values only
- `-a` -- recompute record counts and list of distinct values for all tables

Use these options to recompute all record counts and/or list of values for a session (-s) or for a catalog (-t). You can combine these options with other options such as import (-i).

### To recompute counts for all mapped tables in a flowchart

```
unica_acsesutil -s sesFileName -i importFileName
[{-a T -n | -l }][-S Datasource -U DBUser -P DBPassword]
```

### To recompute counts for tables in a table catalog

```
unica_acsesutil -t catFileName
[{-a T -n | -l }][-S Datasource -U DBUser -P DBPassword]
```

**Note:** You must specify the parameters that define the database connection (-S, -U, -P) if the connection information is not stored in the flowchart.

## Manipulating table catalogs

You can use the Campaign session utility to manipulate table catalogs outside of Campaign.

A common use of XML table catalogs is to perform global search and replace of data source names, for example to convert a table catalog developed for use against a test database, so that it works against a production database. In this case, you can export the table catalog as XML, perform global search and replace as needed, then save the XML table catalog and load it for use.

### Step 1 - Convert to XML format

You use the Campaign session utility only for the first step of this process, which is to generate an XML format file that contains all the data from the requested catalog. If the catalog is already in an XML format, this step is not required.

Use the command:

```
unica_acsesutil -t catFileName -x [-o outputFileName] [-u] [-p]
[{-a T -n | -l }][-S dataSource -U DBUserName -P DBPassword]
```

### Step 2 - Edit as needed

You can now edit the XML file generated in step 1 as needed. To ensure that the file remains well formed, you should use an XML editor that checks the file syntax.

### Step 3 (optional) - Convert to binary format

If required, you can convert the XML catalog file back to a binary format catalog.

Use the command:

```
unica_acsesutil -t <catFileName> -x -o <outputFileName>
```

**Note:** Keeping catalogs in XML format risks exposing data access passwords. If you maintain catalogs in XML format, you should ensure that the file(s) are protected at the operating system level.

### Step 4 - Load the new catalog in a session

After conversion back into a binary format, you can now load the new catalog into a session.

## Documenting catalog contents

You can use two techniques to document catalog contents:

- Use an XML catalog file to generate a report
- Print table mappings using the Campaign session utility

## Using an XML catalog file

Use `unica_acsesutil` to generate an XML format file that contains all the data from the requested catalog.

Currently, there is not an IBM utility to convert an XML catalog file into a user-friendly report.

## Printing table mappings

Use `unica_acsesutil` to print out the table mapping information from a catalog.

Use the command:

```
unica_acsesutil -t catFileName -h partitionName -p
```

## Campaign session utility return values

The `unica_acsesutil` utility returns a value of 0 if it runs successfully. It returns a 1 if no files are found with the specified flowchart or catalog file name.

## Campaign session utility syntax

```
unica_acsesutil -s sesFileName -h partitionName
[-r | -c | -x [-o outputFileName]] [-u] [-v]
[{-e exportFileName [-f {flowchart | campaign | session}]}
| {-i importFileName [-t catFileName]}
[-b {abort | replace | skip}]]
[-p] [-a | -n | -1]
[-S dataSource -U DBUser -P DBPassword]*
[-y userName] [-z password]
[-j owner] [-K policy]
```

## Campaign session utility options

The `unica_acsesutil` utility supports the following options.

*Table 52. Campaign session utility options*

| Option | Syntax                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -a     | -a                          | Recomputes record counts and the list of distinct values for all tables.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| -b     | -b {abort   replace   skip} | Applies only for the import option (-i). Specifies that the import be done in batch mode.<br><br>Requires one of the following arguments to specify how to handle duplicate objects (if there is an ID conflict): <ul style="list-style-type: none"><li>• abort - If a duplicate object is detected, the import stops.</li><li>• replace - If a duplicate object is detected, replace it with the imported object.</li><li>• skip - If a duplicate object is detected, do not replace it and continue the import.</li></ul> |
| -c     | -c <outputFileName>         | Generates a table catalog in <code>outputFileName</code> in .cat format (Campaign internal format). This option is ignored with the -s option.                                                                                                                                                                                                                                                                                                                                                                              |
| -e     | -e <exportFileName>         | Exports the object type specified by the -f option to a file named <code>exportFileName</code> .<br><br>If the -f option is not used, by default a flowchart is set for export.                                                                                                                                                                                                                                                                                                                                             |

Table 52. Campaign session utility options (continued)

| Option | Syntax                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -f     | -f {flowchart   campaign   session} | Specifies the type of object to export. If this option is omitted, by default a flowchart is set for export.<br><br>If -f is used, requires one of the following arguments: flowchart, campaign, session.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| -h     | -h <partitionName>                  | Specifies the name of the partition in which the flowchart file (specified with -s) is located. This parameter is required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| -i     | -i <importFileName>                 | Specifies the name of the file being imported. This should be a file that was exported using the -e option in a previous export operation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| -j     | -j <owner>                          | Specifies the owner of the file being imported or exported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| -k     | -k <policy>                         | Specifies the security policy of the file being imported.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| -l     | -l                                  | Recomputes only the list of distinct values.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| -n     | -n                                  | Recomputes only record counts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| -o     | -o <outputFileName>                 | Specify the catalog with the name <i>outputFileName</i> . If unspecified, the default is <i>catFileName.xml</i> or <i>catFileName.cat</i> , depending on whether you use the -x or -c option. The output file name should specify a destination directory when using wildcards.                                                                                                                                                                                                                                                                                                                                                                                                           |
| -P     | -P <DBPassword>                     | Specifies the password for the database user account. Used with the -U and -S options.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| -p     | -p                                  | Print table mappings to the console.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| -r     | -r <outputFileName>                 | Generate a flowchart XML report in <i>outputFileName</i> . This parameter is ignored when you use the -t option (using a table catalog as input).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| -S     | -S <dataSource>                     | Specifies the name of the data source for the object being operated on. Use with the -U <database_user> and -P <database_password> options.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| -s     | -s <sesFileName>                    | Specifies a Campaign flowchart (.ses) file on which to operate. Specifying an .ses file is always required for exporting and importing, regardless of the object type (campaign, session, or flowchart). When exporting or importing a campaign or session with multiple associated flowcharts, any of the associated .ses files can be used.<br><br>The file name should include the path below the partition in which this flowchart file is located (defined using the -h option). For example, a valid value for -s is:<br><br>"campaign/Campaign C00001_C00001_Flowchart 1.ses"<br><br>The <sesFileName> can contain wildcard characters to operate on multiple matching flowcharts. |
| -t     | -t <catFileName>                    | Read a table catalog named <catFileName> as the input. The <catFileName> can contain wildcard characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| -U     | -U <DBUserName>                     | Specifies the user login for the data source specified by the -S option. Use with the -P option, which specifies the database password for this database user.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| -u     | -u                                  | Uses existing database authentication information when saving table catalogs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| -v     | -v                                  | Displays the version number and exits.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| -x     | -x <outputFileName>                 | Generates a table catalog file in an alternate XML format in <i>outputFileName</i> . If the input table catalog is a .cat file, it generates a corresponding .xml file, and vice versa.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

*Table 52. Campaign session utility options (continued)*

| Option | Syntax        | Description                                                             |
|--------|---------------|-------------------------------------------------------------------------|
| -y     | -y <userName> | Specifies the IBM EMM user name.                                        |
| -z     | -z <password> | Specifies the password for the IBM EMM user specified by the -y option. |

## Campaign cleanup utility (unica\_acclean)

Use the cleanup utility (unica\_acclean) to identify and clean up temporary files and database tables in the current partition. The cleanup utility can be used on both the Campaign system tables database and on user tables databases.

**Note:** When you run the unica\_acclean utility, you must stop all the flowcharts that are currently running or the flowcharts that are scheduled to run.

Users running this utility must have the "Perform Cleanup Operations" permission, granted by their Campaign administrator. If users attempt to run this utility without the appropriate privileges, the tool terminates after displaying an error.

**Note:** This tool does not operate across partitions. Each time it is run, unica\_acclean operates on tables and files only in the specified partition.

The following items can be identified and cleaned up by the utility:

- temporary files and tables associated with a specified object or object type, based on given criteria.
- orphaned temporary files and tables -- temporary files and tables that have been left behind after their associated object was deleted.

## Environment variables required for unica\_acclean

To run unica\_acclean, the following environment variables must be set:

- UNICA\_PLATFORM\_HOME
- CAMPAIGN\_HOME
- LANG

Setting CAMPAIGN\_PARTITION\_HOME is optional.

## Campaign cleanup utility use cases

Use the cleanup utility (unica\_acclean) to perform the following tasks:

- "Generating a list of orphaned files and tables"
- "Deleting the files and tables listed in a file" on page 166
- "Deleting all orphaned temp files and tables" on page 166
- "Generating a list of files and tables selectively by object type and criteria" on page 167
- "Deleting files and tables selectively by object type and criteria" on page 167

### Generating a list of orphaned files and tables

You can use the cleanup utility to identify and output a list of orphaned temp files and tables.

**Note:** IBM recommends as a best practice that you output a list of identified orphaned files and tables for verification before performing deletions using the cleanup utility, rather than running the utility to immediately delete files and tables. This can help prevent accidental deletes; there is no recovery after deletion.

**To output a list of orphaned files and tables:****About this task**

```
unica_acclean -o <list file name> -w orphan
```

For this usage, `-w orphan` is required, and you cannot specify any criteria.

Use the `-o` option to specify the file name. You can also specify the path where you want the file to be saved. If you do not include the path, the file is saved in the same directory as the `unica_acclean` utility.

**Example**

```
unica_acclean -o "OrphanList.txt" -w orphan
```

This example generates a list of orphaned files and tables and writes it to the file `OrphanList.txt`.

**Deleting the files and tables listed in a file**

You can use the cleanup utility to delete all temp files and temp tables listed in a file generated by the utility.

**To delete the files and tables listed in a file:****About this task**

```
unica_acclean -d -i "OrphanList.txt"
```

where `OrphanList.txt` is the file containing the list of files to be deleted, generated by the cleanup utility.

If a line is read from the list file that is not a temp file or a temp table, the cleanup tool skips that item and logs an error to the console and the log file indicating that the item will not be deleted.

**Deleting all orphaned temp files and tables**

You can use the cleanup utility to delete all temp files and tables that it identifies as being orphaned, from the system and user tables databases and the file system.

**To delete all orphaned temp files and tables from your system:****About this task**

```
unica_acclean -d -w orphan
```

**About orphaned files and tables**

The `unica_acclean` utility determines whether files and tables are orphaned in the following way:

**Tables**

The utility scans databases in the current partition to obtain the list of temporary tables. Tables are identified as "temporary" based on the "TempTablePrefix" properties specified for each data source on the Marketing Platform Configuration page.

Once the list of temporary tables is compiled, all flowchart files in the system are scanned to see if any of these temporary tables are used by a flowchart. Any temporary table not referenced by a flowchart is considered orphaned.

**Note:** The cleanup utility scans only those data sources defined in the Marketing Platform User Administration module for the user running the utility. Therefore, users running the cleanup utility should always make sure that they have authentication rights to the global or appropriate set of data sources for scanning.

## Files

The utility scans two locations to identify temporary files:

- the partition's temp directory (*<partition home>/<partition>/tmp*) to obtain the list of files identified as "temporary" files based on the *.t~#* extension.
- the *<partition home>/<partition>/[campaigns | sessions]* directory for files having a known Campaign temp file extension.

Once the list of temporary files is compiled, all flowchart files in the system are scanned to see if any of these temporary files are not used by any flowchart. Any temporary file not referenced by a flowchart is considered orphaned.

## Generating a list of files and tables selectively by object type and criteria

You can use the cleanup utility to generate a list of files and tables by object type and criteria.

**To generate a list of files and tables selectively by object type and criteria:**

**About this task**

```
unica_acclean -o <list file name> -w {flowchart | campaign | session | sessionfolder | campaignfolder} -s criteria [-r]
```

### Example

#### Example 1: list temp files and tables by campaign folder

```
unica_acclean -o "JanuaryCampaignsList.txt" -w campaignfolder -s "NAME='JanuaryCampaigns'" -r
```

This example generates a list of temporary files and tables associated with campaigns and flowcharts in the campaign folder named "JanuaryCampaigns" as well as all subfolders of "JanuaryCampaigns", and writes it to the file JanuaryCampaignsList.txt.

#### Example 2: list temp files and tables by flowchart LASTRUNENDDATE

```
unica_acclean -o "LastRun_Dec312006_List.txt" -w flowchart -s "LASTRUNENDDATE < '31-Dec-06'"
```

This example generates a list of all temp files and tables with LASTRUNENDDATE earlier than December 31, 2006, in all flowcharts, and writes it to the file LastRun\_Dec312006\_List.txt.

**Note:** Make sure that any date criteria are specified in the correct date format for your database.

## Deleting files and tables selectively by object type and criteria

You can use the cleanup utility to delete temporary files and tables by object type and criteria.

**To delete files and tables selectively by object type and criteria:**

**About this task**

```
unica_acclean -d -w {flowchart | campaign | session | sessionfolder | campaignfolder} -s <criteria> [-r]
```

## Examples

### Example 1: Delete temp files and tables by campaign folder

```
unica_acclean -d -w campaignfolder -s "NAME='JanuaryCampaigns'" -r
```

This example deletes temporary files and tables associated with campaigns and flowcharts in the campaign folder named "JanuaryCampaigns", as well as to all subfolders of "JanuaryCampaigns".

### Example 2: delete temp files and tables by flowchart LASTRUNENDDATE

```
unica_acclean -d -w flowchart -s "LASTRUNENDDATE < '31-Dec-06'"
```

This example deletes all temp files and tables with LASTRUNENDDATE earlier than December 31, 2006, in all flowcharts.

**Important:** Make sure that any date criteria are specified in the correct date format for your database.

## Campaign cleanup utility syntax

```
unica_acclean {-d|-o <list file name>}
-w {flowchart | campaign | session | sessionfolder | campaignfolder |
other} -s <criteria>
[-u <user name>] [-p <password>] [-n <partition name>]
[-l {low|medium|high|all}]
[-f <log file name>]
[-S <dataSource> -U <DB-user> -P <DB-password>]*
```

The cleanup utility is non-interactive unless user name or password are not specified. If user name is not specified, the tool prompts for user name and password. If password is not specified, the tool prompts for password.

## Campaign cleanup utility options

The unica\_acclean utility supports the following options.

*Table 53. Campaign cleanup utility options*

| Option | Syntax                                             | Description                                                                                                                                                                                                                                                 |
|--------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -d     | -d                                                 | Deletes temp tables and files. All flowchart files are scanned, and based on the result, temporary files and tables are determined.                                                                                                                         |
| -f     | -f <log file name>                                 | Specifies the name of the file where errors are logged, located in the <PARTITION_HOME>/logs directory. By default, this file is named unica_acclean.log. You can modify the log file name, but specifying a different location is not currently supported. |
| -h     | -h                                                 | Displays usage help. Any invalid command-line invocation also displays the help.                                                                                                                                                                            |
| -i     | -i <clean file name>                               | Specifies the file listing the items to be deleted. Best practice is to use the same file generated by the cleanup tool, using the -o option.                                                                                                               |
| -l     | -l {low   medium   high   all}][ -f <logFileName>] | Specifies logging level and the log file name. If no level is specified, medium is used by default.                                                                                                                                                         |
| -n     | -n <partition name>                                | Use this option to supply the name of the partition. If the partition name is not specified, the default of "partition 1" is used.                                                                                                                          |

Table 53. Campaign cleanup utility options (continued)

| Option | Syntax            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -o     | -o <listfilename> | Outputs the list of tables and files to the specified file, but does not delete them.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| -P     | -p                | Print table mappings to the console.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| -P     | -p <password>     | Must be used when the -u option is used. Use this option to supply the password for the user specified with the -u option.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| -r     | -r                | This option can be used only with the -w option for either campaignfolder or sessionfolder objects.<br><br>When a folder is specified for cleanup and the -r option is added, the unica_acclean tool performs the operation for all subdirectories of the specified folder. If only the -w option is used with a folder, unica_acclean performs the operation only on the top-level folder.                                                                                                                                                                                                                                                                                                                                                              |
| -S     | -S <dataSource>   | Specifies the name of the data source for the object being operated on. Use with the -U <database_user> and -P <database_password> options. These options allow you to override the credentials stored in Marketing Platform or provide authentication for data sources whose ASMSaveDBAuthentication is set to FALSE.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| -s     | -s <criteria>     | Used with the -w option, defines criteria for cleanup, specified as a SQL query. The SQL LIKE operator can be used to do a search based on wildcards.<br><br>Any data table column for the specified object can be used as criteria: <ul style="list-style-type: none"> <li>• When specifying a campaign folder or session folder as the object, criteria are based on columns in the UA_Folder table.</li> <li>• When specifying a campaign as the object, criteria are based on columns in the UA_Campaign table.</li> <li>• When specifying a flowchart as the object, criteria are based on columns in the UA_Flowchart table.</li> <li>• When specifying a session as the object, criteria are based on columns in the UA_Session table.</li> </ul> |
| -U     | -U <DBUserName>   | Specifies the user login for the data source specified by the -S option. Use with the -P option, which specifies the database password for this database user.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| -u     | -u <user name>    | Must be used when the -p option is used. Use this option to supply the IBM EMM user name of the user running the utility.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| -v     | -v                | Displays version and copyright information for the cleanup utility.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

Table 53. Campaign cleanup utility options (continued)

| Option | Syntax                                                                                                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -w     | <code>-w {flowchart   campaign   session   sessionfolder   campaignfolder   orphan} -s &lt;criteria&gt; [-r]</code> | <p>Searches for temp files and tables associated with the specified object type, based on the specified criteria, except when used with the orphan option.</p> <p>Only when used with orphan, searches for orphaned temp files and tables across the entire system.</p> <p>Requires -s &lt;criteria&gt; for all options except "orphan". For details, see -s.</p> <p>Optionally use the -r option to recursively search subfolders. For details, see -r.</p> |

## Campaign report generation utility (unica\_acgenrpt)

unica\_acgenrpt is a command-line report generation utility that exports a flowchart cell report from a specified flowchart. The report is generated from the flowchart's .ses file. Use the unica\_acgenrpt utility to generate and export the following types of cell reports:

- Cell List
- Cell Variable Profile
- Cell Variable Crosstab
- Cell Content

For more information about these reports, see the *IBM Campaign User's Guide*.

The default file name of the exported file is unique and based on the flowchart name. It is saved in the directory you specify. If the file already exists, it is overwritten. The default file format is tab-delimited.

**Note:** The exported file contains the current data from the flowchart's .ses file. If a flowchart is writing to the .ses file when the unica\_acgenrpt utility is run, the resulting report file could contain data from the previous run of the flowchart. If you are invoking the unica\_acgenrpt utility using an on-success trigger, your script should contain an appropriate delay before executing unica\_acgenrpt to account for the length of time that your flowcharts will need to finish writing to the .ses file. The amount of time required to save the .ses file varies greatly depending upon the size and complexity of the flowchart.

Use of the unica\_acgenrpt utility requires the Run genrpt Command Line Tool permission in the Administrative Roles security policy. For more information on security policies and permissions, see Chapter 2, "Security in IBM Campaign," on page 5.

## Use case: capture cell counts from flowchart runs

To analyze cell counts over time, use the unica\_acgenrpt utility to capture the cell counts from flowchart production runs. For the report type, specify CellList.

To automate this data capture, use an on-success trigger in your flowcharts to call a script that invokes the unica\_acgenrpt utility. Use the <FLOWCHARTFILENAME> token to return the full path name of the flowchart's .ses file. To make the data available for analysis, use another script that loads the resulting export file into a table.

## IBM Campaign report generation utility syntax

The unica\_acgenrpt utility has the following syntax:

```
unica_acgenrpt -s <sesFileName> -h <partitionName> -r <reportType> [-p <name>=<value>]* [-d <delimiter>] [-n] [-i] [-o <outputFileName>] [-y <user>] [-z <password>] [-v]
```

## IBM Campaign report generation utility options

The unica\_acgenrpt utility supports the following options.

*Table 54. Campaign report generation utility options*

| Option | Syntax              | Description                                                                                                                                                                                                                                                                                                                                                                                          |
|--------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -s     | -s <sesFileName>    | Specifies a Campaign flowchart (.ses) file on which to operate. The file name should include the path below the partition in which this flowchart file is located (defined using the -h option). For example, a valid value for -s is:<br><br>"campaign/Campaign C00001_C00001_Flowchart 1.ses"<br><br>The <sesFileName> can contain wildcard characters to operate on multiple matching flowcharts. |
| -h     | -h <partitionName>  | Specifies the name of the partition in which the flowchart file (specified with -s) is located.                                                                                                                                                                                                                                                                                                      |
| -r     | -r <reportType>     | Specifies the type of report to be generated. Valid values include: <ul style="list-style-type: none"><li>• CellList (Cell List report)</li><li>• Profile (Cell Variable Profile report)</li><li>• XTab (Cell Variable Crosstab report)</li><li>• CellContent (Cell Content report)</li></ul>                                                                                                        |
| -p     | -p <name>=<value>   | Specifies report parameters using name=value pairs. The -p option can appear multiple times, and must appear after the -r option. For a list of valid name=value pairs supported by the -p option, see "Parameters used with the unica_acgenrpt -p option."                                                                                                                                          |
| -d     | -d <delimiter>      | Separates columns in the output file. The default is TAB.                                                                                                                                                                                                                                                                                                                                            |
| -n     | -n                  | Includes column names before the report data in the output file.                                                                                                                                                                                                                                                                                                                                     |
| -i     | -i                  | Appends a unique text identifier to the end of the output file.                                                                                                                                                                                                                                                                                                                                      |
| -o     | -o <outputFileName> | Specifies the output file name. The default is <sesFileName> with .ses replaced by .csv; specifies a destination directory when using wildcards.                                                                                                                                                                                                                                                     |
| -y     | -y <user>           | Specifies a login user name for Campaign.                                                                                                                                                                                                                                                                                                                                                            |
| -z     | -z <password>       | Specifies the password for the user login.                                                                                                                                                                                                                                                                                                                                                           |
| -v     | -v                  | Displays the version number of the utility and exits.                                                                                                                                                                                                                                                                                                                                                |

### Parameters used with the unica\_acgenrpt -p option

The unica\_acgenrpt utility's -p option allows you to specify the following parameters using name=value pairs for the Cell Variable Profile, Cell Variable Crosstab, and Cell Content reports.

#### Cell Variable Profile report

| Parameter name | Usage    | Description                         |
|----------------|----------|-------------------------------------|
| cell           | Required | Name of a cell you want to profile. |

| Parameter name | Usage    | Description                                                                                                                                                                              |
|----------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| field          | Required | Name of the field you want to use to profile the cell.                                                                                                                                   |
| cell2          | Optional | Name of an additional cell to profile.                                                                                                                                                   |
| bins           | Optional | Number of bins you want to include in the report. If the number you specify is less than the number of different field values, some fields will be joined in one bin. The default is 25. |
| meta           | Optional | Specifies whether you want to profile by meta type. Valid values are TRUE and FALSE. The default is TRUE.                                                                                |

## Cell Variable Crosstab report

| Parameter name | Usage    | Description                                                                                                                                                                              |
|----------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cell           | Required | Name of a cell you want to profile.                                                                                                                                                      |
| field1         | Required | Name of the first field you want to use to profile the cell.                                                                                                                             |
| field2         | Required | Name of the second field you want to use to profile the cell.                                                                                                                            |
| cell2          | Optional | Name of an additional cell to profile.                                                                                                                                                   |
| bins           | Optional | Number of bins you want to include in the report. If the number you specify is less than the number of different field values, some fields will be joined in one bin. The default is 10. |
| meta           | Optional | Specifies whether you want to profile by meta type. Valid values are TRUE and FALSE. The default is TRUE.                                                                                |

## Cell Content report

| Parameter name | Usage    | Description                                                                                                                                                                                        |
|----------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cell           | Required | Name of the cell you want to include in the report.                                                                                                                                                |
| field          | Optional | Name of a field you want to include in the report. Repeat multiple times to specify additional fields. If no field is specified, the report displays values for the audience field(s).             |
| records        | Optional | Number of records you want to include in the report. The default is 100.                                                                                                                           |
| skipdups       | Optional | Specifies whether you want to skip records with duplicate ID values. Enabling this option is useful if you are using non-normalized tables. Valid values are TRUE and FALSE. The default is FALSE. |

---

## Database testing utilities

Campaign supports the following command-line database testing utilities, which you can use to test connections to a target database, to execute queries and to perform a variety of tasks:

- “cxntest utility” on page 173
- “odbctest utility” on page 173
- “db2test utility” on page 174
- “oratest utility” on page 175

These utilities are in the /Campaign/bin directory on the Campaign server.

**Note:**

If your operating system does not provide the db2test utility, use the cxntest utility to test connections to the target database.

## **cxntest utility**

The cxntest utility allows you to test connections to a target database and, once connected, to issue a variety of commands.

### **To use the cxntest utility**

Use cxntest to test connections to a target database and to issue commands when connected.

#### **Procedure**

1. From a command prompt on the Campaign server, run the cxntest utility.
2. Enter the following information when prompted:
  - a. The name of the connection library for your database. Library files are located in the same directory as the cxntest utility. For example: libdb24d.so (for DB2 on Linux) or db24d.dll (for DB2 on Windows).
  - b. The name of the data source. For example, the Oracle SID.
  - c. A database user ID.
  - d. The password that is associated with the database user ID.The utility does not prompt for confirmation of your selections.
3. If the connection is successful, you can enter the following commands at the prompt:
  - **bprint [pattern]**  
Does an array fetch on a list of tables, 500 at a time. Optionally, specify a search *pattern*, where the pattern matches SQL standards, such as % for zero or more characters. For example, bprint UA\_% finds all Campaign tables that start with "UA\_".
  - **describetable**  
Describes the specified *table*. Returns each column name and its corresponding data type, storage length, precision, and scale.
  - **exit**  
Terminates the database connection and exits.
  - **help**  
Displays a list of supported commands.
  - **print [pattern]**  
Returns a list of tables. Optionally, specify a search *pattern*, where the pattern matches SQL standards, such as % for zero or more characters.
  - **quit**  
Terminates the database connection and exits.
  - **SQL\_command**  
Executes any valid SQL command or series of SQL commands.

## **odbctest utility**

The odbctest utility allows you to test Open DataBase Connectivity (ODBC) connections to a target database and, once connected, to issue a variety of commands. It is supported on AIX, Solaris, Windows and HP-UX systems (32-bit only).

**Note:** For Oracle and DB2 databases, use their native utilities.

## To use the `odbctest` utility

### Procedure

1. From a command prompt on the Campaign server, run the `odbctest` utility.

The `odbctest` utility returns a list of databases that you can connect to, similar to the following:

Registered Data Sources:

MS Access Database (Microsoft Access Driver (\*.mdb))  
dBASE Files (Microsoft dBase Driver (\*.dbf))  
Excel Files (Microsoft Excel Driver (\*.xls))

2. The `odbctest` utility is prompt-driven. You must enter the following information exactly at the prompts:
  - a. The name of the database you want to connect to (taken from the list of Registered Data Sources)
  - b. A database user ID
  - c. The password associated with the database user ID

The utility does not prompt for confirmation of your selections.

- 3. When you have successfully connected to the database, the `odbctest` utility prints out messages like the following and presents you with a command prompt:

```
Server ImpactDemo conforms to LEVEL 1.
Server's cursor commit behavior: CLOSE
Transactions supported: ALL
Maximum number of concurrent statements: 0
For a list of tables, use PRINT.
```

4. You can enter the following commands at the prompt:
  - `bulk [number_of_records]`  
Sets the number of records to return, as specified by *number\_of\_records*. The default is 1.
  - `desrcresSQL_command`  
Describes the columns returned by the SQL command specified by *SQL\_command*.
  - `describepattern`  
Describes the table or tables specified by *pattern*. Returns the corresponding type, data type, storage length, precision, and scale.
  - `exit`  
Terminates the database connection and exits.
  - `help`  
Displays a list of supported commands.
  - `print[pattern]`  
Returns a list of tables. Can optionally specify a search *pattern*.
  - `quit`  
Terminates the database connection and exits.
  - `SQL_command`  
Executes any valid SQL command or series of SQL commands.
  - `typeinfo`  
Returns a list of supported data types for the database.

## **db2test utility**

The `db2test` utility allows you to test connections to a DB2 database and, once connected, to issue a variety of commands.

If your operating system does not provide the `db2test` utility, use the `cxntest` utility to test connections to the target database.

## To use the db2test utility

If your operating system does not provide the db2test utility, use the cxntest utility to test connections to the target database.

### Procedure

1. From a command prompt on the Campaign server, run the db2test utility.  
The db2test utility returns a list of databases (registered data sources) that you can connect to.
2. The db2test utility is prompt-driven. You must enter the following information exactly at the prompts:

- The name of the database you want to connect to (taken from the list of Registered Data Sources)
- A database user ID
- The password associated with the database user ID

The utility does not prompt for confirmation of your selections.

3. When you have successfully connected to the database, the db2test utility prints out messages like the following and presents you with a command prompt:

```
Server ImpactDemo conforms to LEVEL 1.
Server's cursor commit behavior: CLOSE
Transactions supported: ALL
Maximum number of concurrent statements: 0
For a list of tables, use PRINT.
```

4. You can enter the following commands at the prompt:

- `describepattern`

Describes the table or tables specified by *pattern*. Returns the corresponding type, data type, storage length, precision, and scale.

- `exit`

Terminates the database connection and exits.

- `help`

Displays a list of supported commands.

- `print[pattern]`

Returns a list of tables. Can optionally specify a search *pattern*.

- `quit`

Terminates the database connection and exits.

- `SQL_command`

Executes any valid SQL command or series of SQL commands.

- `typeinfo`

Returns a list of supported data types for the database.

## oratest utility

The oratest utility allows you to test connections to an Oracle server.

### To use the oratest utility

#### Procedure

1. From a command prompt on the Campaign server, run the oratest utility.
2. The oratest utility is prompt driven. You must enter the following information exactly at the prompts:
  - a. The name of the Oracle server you want to connect to
  - b. A database user ID
  - c. The password associated with the database user ID

The utility does not prompt for confirmation of your selections.

## Results

If successful, the oratest utility prints a **Connection Successful** message and exits with a return value of zero (0).

---

## Setting up IBM Campaign to use database load utilities

You can improve performance by using a database load utility for all datasources.

### About this task

IBM Campaign supports the use of database load utilities, which are available from your database vendors. You must obtain licensed copies of any database load utilities.

Database load utilities can improve performance when pushing ID lists into temporary tables and when exporting data from IBM Campaign to the database. For example, data is exported during a Snapshot, Mail List, or Call List process.

Load utilities can provide significant performance improvements. Testing on DB2 indicates that without the load utility, insertion of a million rows requires about 5 times more CPU utilization and significant disk I/O. Results vary depending on the hardware in use.

The following instructions assume that you are using a DB2 database. If you are using a different database, adjust the instructions accordingly.

**Important:** The following adjustments can impact system resources and potentially impact performance numbers.

### Procedure

To set up IBM Campaign to use a database load utility, there are three main steps to perform for each datasource: Create two load control file templates; create a script or executable to start the load utility; then set the loader configuration properties in IBM Campaign.

#### 1. Create two load control file templates.

Most database load utilities require the use of a control file. IBM Campaign can generate control files dynamically based on control file templates that you create.

- a. Create a load control file template for adding records. The template must consist of the following lines. This example template is named `loadscript.db2`:

```
connect to <DATABASE> user <USER> using <PASSWORD>;
load client from <DATAFILE> of del modified by coldel| insert into <TABLE>(
<FIELDNAME><,>
)
nonrecoverable;
```

- b. Create a load control file template for appending records. The template must consist of the following lines. This example template is named `loadappend.db2`:

```
connect to <DATABASE> user <USER> using <PASSWORD>;
load client from <DATAFILE> of del modified by coldel| insert into <TABLE>(
<FIELDNAME><,>
)
nonrecoverable;
```

You now have templates for loading data into a new or empty database table and appending data to an existing database table.

IBM Campaign will fill in the DATABASE, USER, PASSWORD, DATAFILE, TABLE and FIELDNAME tokens in the templates and create a configuration file called CONTROLFILE for the DB2 Load.

#### 2. Create a script or executable to start the load utility.

To invoke the load utility, IBM Campaign uses a shell script (or an executable, for Windows), which is identified in the **Loadercommand** configuration property. You can specify either a direct call to the database load utility executable or a call to a script that launches the database load utility.

- a. For this example, create a shell script called db2load.sh, to start the loader. For the /tmp path, you can substitute the directory of your choice:

```
#!/bin/sh
cp $1 /tmp/controlfile.tmp
cp $2 /tmp/db2load.dat
db2 -tvf $1 >> /tmp/db2load.log
```

- b. Change permissions on the script file so it has execute permission:

```
chmod 755 db2load.sh
```

### 3. Set loader configuration properties in IBM Campaign.

The loader configuration properties identify the control file templates and indicate the location of the script or executable file.

- a. Choose **Settings > Configuration**, then select **Campaign|partitions|partition1|dataSources|<datasourcename>**.
- b. Set the properties that begin with the word **Loader**. For important information, see the topic *Configuration properties for IBM Campaign* in the *IBM Campaign Administrator's Guide* or the online help.
  - **LoaderCommand**: The path to the script or executable to invoke the database load utility. Most database load utilities require several arguments to be launched successfully. The tokens required by DB2 are shown in angle brackets in the following example. Type them exactly as shown. They will be replaced by the specified elements when the command is run. Example: /Unica/Campaign/partition/partition1/db2load.sh <CONTROLFILE> <DATAFILE>
  - **LoaderCommandForAppend**: The path to the script or executable to invoke the database load utility for appending records to a database table. Example: /Unica/Campaign/partition/partition1/db2load.sh <CONTROLFILE> <DATAFILE>
  - **LoaderDelimiter** and **LoaderDelimiterForAppend**: The delimiter used in the loader control file template.
  - **LoaderControlFileTemplate**: The path to the control file template, relative to the current partition. Example: loadscript.db2
  - **LoaderControlFileTemplateForAppend**: The path to the control file template for appending records, relative to the current partition. Example: loadappend.db2
  - All other **Loader** settings: Specify as required for your implementation, according to the information provided in the topic *Configuration properties for IBM Campaign*.

The following image shows an example of Loader configuration settings.

|                                           |                                                                                                                               |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>LoaderCommand</b>                      | /Unica/Campaign/partition/partition1/db2load.sh <CONTROLFILE><DATAFILE> <small>(path of Shell script to start loader)</small> |
| <b>LoaderCommandForAppend</b>             | /Unica/Campaign/partition/partition1/db2load.sh <CONTROLFILE><DATAFILE> <small>(path of Shell script to start loader)</small> |
| <b>LoaderControlFileSpecifiesFields</b>   | TRUE                                                                                                                          |
| <b>LoaderControlFileTemplate</b>          | loadscript.db2                                                                                                                |
| <b>LoaderControlFileTemplateForAppend</b> | loadappend.db2                                                                                                                |
| <b>LoaderDelimiter</b>                    |                                                                                                                               |
| <b>LoaderDelimiterAtEnd</b>               | FALSE                                                                                                                         |
| <b>LoaderDelimiterAtEndForAppend</b>      | FALSE                                                                                                                         |
| <b>LoaderDelimiterForAppend</b>           |                                                                                                                               |
| <b>LoaderNULLValueInDelimitedData</b>     |                                                                                                                               |
| <b>LoaderUseLocaleDP</b>                  | FALSE                                                                                                                         |

- c. Be sure to adjust the **Loader** configuration settings for each datasource.

## Results

IBM Campaign performs the following actions when it writes to the database: First, it creates a temporary data file as fixed width or delimited text. If specified by the **LoaderControlFileTemplate** property, a temporary control file is created dynamically based on the template file and the list of fields to be sent to the database. Next, it issues the command specified by the **LoaderCommand** configuration property. Finally, it cleans up the temporary data file and control file.

### Fast loader repeated tokens

When you create a **LoaderControlFileTemplate** or a **LoaderControlFileTemplateForAppend**, a list of special tokens is repeated once for each field in the outbound table.

The available tokens are described in the following table.

*Table 55. Fast loader repeated tokens*

| Token         | Description                                                                                                                                                                                                                                          |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <CONTROLFILE> | This token is replaced with the full path and file name to the temporary control file that Campaign generates according to the template that is specified in the <b>LoaderControlFileTemplate</b> parameter.                                         |
| <DSN>         | This token is replaced with the value of the DSN property. If the DSN property is not set, the <DSN> token is replaced by the data source name used in the category name for this data source (the same value used to replace the <DATABASE> token). |
| <DATABASE>    | This token is replaced with the name of the data source that Campaign is loading data into. This is the same data source name used in the category name for this data source.                                                                        |
| <DATAFILE>    | This token is replaced with the full path and file name to the temporary data file created by Campaign during the loading process. This file is in the Campaign Temp directory, UNICA_ACTMPDIR.                                                      |
| <NUMFIELDS>   | This token is replaced with the number of fields in the table.                                                                                                                                                                                       |
| <PASSWORD>    | This token is replaced with the database password from the current flowchart connection to the data source.                                                                                                                                          |
| <TABLE>       | This token is obsolete, but is supported for backward compatibility. See <TABLENAME>, which replaced <TABLE> as of version 4.6.3.                                                                                                                    |
| <TABLENAME>   | This token is replaced with the database table name that Campaign is loading data into. This is the target table from your Snapshot process or the name of the Temp Table being created by Campaign.                                                 |
| <USER>        | This token is replaced with the database user from the current flowchart connection to the data source.                                                                                                                                              |

In addition to these special tokens, every line includes other characters. To include a single character on every line except the last line, the character can be enclosed within angle brackets. You can enclose only a single character between the angle bracket (< >) characters for this functionality.

This is commonly used to separate the list of fields with a comma. For example, the following syntax generates a comma-separated list of field names:

```
<FIELDNAME><,>
```

The angle bracket (< >) characters around the comma indicate that the comma should be present on every line, after every inserted field name, except the last.

If any sequence of characters does not fit this requirement, it is repeated every time, including the last. So for example, to generate a parenthesized, comma-separated list of field names in which each field name is preceded by a colon, you can use the following syntax:

```
(
 :<FIELDNAME><,>
)
```

Because the colon is not enclosed within angle bracket (< >) characters, it repeats for every line; however, the comma appears on every line except the last. It might produce output as follows:

```
(
 :FirstName,
 :LastName,
 :Address,
 :City,
 :State,
 :ZIP
)
```

Note that the comma does not appear after the last field name (ZIP), yet the colon appears before every field name.



---

# Chapter 17. Configuring Campaign for non-ASCII data

Campaign supports the use of localized data and non-United States locales, including multiple user-preferred locales within the same installation of the IBM application.

To ensure that your application is set up to work correctly with non-ASCII data, non-United States locales, or user-specified locales, you must perform some specific configuration tasks. IBM strongly recommends that you avoid using your IBM application before you have completely configured your system and tested it for your data and locale. It is recommended that you perform these configuration steps on a new installation of the application.

---

## About using non-ASCII data or non-US locales

Before you perform any of the configuration procedures, you should understand the basic concepts as they apply to data and locale configuration in your IBM EMM application.

### About character encodings

A character encoding is the means by which human language is represented on a computer. Many different encodings are used to represent different languages. In order to configure your IBM application to work with non-ASCII languages, you need to understand the character encodings used to store textual data in both your files and your databases. Special cases in character encoding occur in some text formats. For more details, see “The encoding of text in character-based fields” on page 182.

The supported encodings are listed in “Character encodings in Campaign” on page 319.

### About interactions with non-ASCII databases

You must understand the encoding and date format that your database server and client use, and ensure that you configure Campaign correctly for these settings.

When an application communicates with a database, several language-sensitive areas must be understood between them, including:

- The format of date and time fields
- The encoding of text in character-based fields
- The sorting order expected in ORDER BY clauses of SQL SELECT statements

Campaign communicates directly with the database client and the client communicates with the database. Each database varies in how it handles language-sensitive data.

#### The format of date and time fields

The format of a date field can have various characteristics, including:

- Order of the day, month, and year
- Delimiters between day, month, and year
- Representation of fully-written-out dates
- Type of calendar (Gregorian or Julian)
- Abbreviated and full weekday names
- Abbreviated and full month names

The format of a time field can have various characteristics, including:

- The hour format (for example, 12-hour or 24-hour format)

- The representation of minutes and seconds
- The locale-specific indicator for AM/PM

**Important:** If you use the multi-locale feature, you should not use date formats containing 3-letter months (MMM), %b (abbreviated month name), or %B (full month name). Instead, you should use a delimited or fixed format with a numeric value for the month. For more details about date formats, see “Date and time formats” on page 323. For more details about the multi-locale feature, see “About the multi-locale feature.”

Date and time formats can appear in SQL statements as well as in the data returned by the database (called a resultset). Some database clients support or require different formats between SQL statements (output) and resultsets (input). The Configuration page for Campaign includes a parameter (`DateFormat`, `DateOutputFormatString`, `DateTimeFormat`, and `DateTimeOutputFormatString`) for each of the different formats.

### The encoding of text in character-based fields

Data in `CHAR`, `VARCHAR`, and other text-based fields have a specific character encoding. When databases are created, they can specify the encoding that will be used throughout the database.

Campaign can be configured to use one of many different character encodings on a database-wide scale. Per-column encodings are not supported.

In many databases, the database client transcodes between the encoding of the database and the encoding that an application uses. This is common when an application uses some form of Unicode but the database uses a language-specific encoding.

### About the multi-locale feature

Campaign supports multiple languages and locales for a single installation. Campaign has a default language and locale which is set during installation, but you can optionally set an individual locale preference for each user in IBM EMM.

Setting a user's locale preference is optional. Unless a preferred locale is set explicitly in IBM EMM for a user, there is no "preferred" locale at the user level, and when that user logs in, Campaign uses the suite-level locale set in IBM EMM.

When a preferred locale is explicitly set for a user, this preference overrides the suite-level setting, and when this user logs in to Campaign, the user interface appears in the user's preferred language and locale. This setting applies until the session ends (that is, when the user logs out). Thus, the multi-locale feature allows multiple users to log in to Campaign and work simultaneously, each in their preferred language and locale. For details about setting user locale preferences in IBM EMM, see the *IBM Marketing Platform Administrator's Guide*.

To configure your system for multi-locale functionality, see “Configuring Campaign for multiple locales” on page 189. You complete the tasks in that section after configuring Campaign for a non-ASCII language or non-US locale.

**Important:** If you use the multi-locale feature, you should not use date formats containing 3-letter months (MMM), %b (abbreviated month name), or %B (full month name). Instead, use a delimited or fixed format with a numeric value for the month.

### Areas not affected by user locale preferences

The user locale preference does not control all areas of display in Campaign. The following areas are not affected by user locale preferences:

- Parts of the Campaign interface that do not have a user context (for example, the log in page that appears prior to any user logging in). These parts of the interface are displayed in the default language.
- Any user-defined items within the user interface, if they are read from a user database (for example, custom or external attributes) are displayed only in their original database language.
- Data input -- regardless of the locale setting, if your system tables are correctly set up with Unicode encoding, you can input data to Campaign in any language.
- Campaign command line tools -- these display in the default language. You can override the Campaign default language with the language specified in your system's `LANG` environment variable. If you change the `LANG` environment variable, the following Campaign programs require a new invocation for the change to take effect:
  - `install_license`
  - `svrstop`
  - `unica_acclean.exe`
  - `unica_acgen rpt.exe`
  - `unica_aclsnr`
  - `unica_acsesutil`
  - `unica_actrg`
  - `unica_svradm`

**Note:** In Windows, the language and regional settings must match. Regional settings affect all non-Unicode programs in Windows, and must be explicitly set.

## Limitations of the multi-locale feature

The multi-locale feature has the following limitations:

- It is not supported for Japanese operating systems. To install Campaign with a single locale on a Japanese OS, contact IBM Technical Support.

- Note:** The multi-locale feature installed on non-Japanese operating system environments does correctly support `ja` as a user locale preference.
- It is not supported by all IBM applications. See the documentation for each application for information about multi-locale support.
  - In multi-locale installations of Campaign, when file names are in mixed languages, or when the command shell language (encoding) does not match the file name encoding, file names might appear garbled in command-line displays.
  - Multi-locale installations of Campaign on Windows platforms is supported only on NTFS drives, as FAT32 does not support Unicode character sets.
  - Cell Profile Reports are not localized and remain in English regardless of locale.

---

## Configuring Campaign for a non-ASCII language or a non-US locale

Several steps need to be performed in a specific order to correctly configure IBM Campaign.

### Before you begin

Before you begin, read all of the topics in “About using non-ASCII data or non-US locales” on page 181.

### About this task

To configure Campaign for localized data or non-ASCII locales, complete the tasks in the following list. Each step is described in detail later in this section.

**Important:** Do not skip any of the steps. Skipping a step could result in incorrect or incomplete configuration, causing errors or corrupted data.

## Procedure

1. "Set the operating system language and regional settings."
2. "Set encoding parameters for the web application server (WebSphere only)" on page 185.
3. "Set Campaign language and locale property values" on page 185.
4. "Un-map and re-map system tables" on page 186.
5. "Test your database and server configurations" on page 186.

## Set the operating system language and regional settings

This is one of the required steps when configuring Campaign to use a non-ASCII language or a non-US locale.

### About this task

Configure the operating system language and regional settings on the IBM Campaign server and the system where the Campaign web application is deployed. Your database might also require that you set the operating system language and locale on the machine where the database is installed. See the database documentation to determine whether this is required.

#### About setting the language and locale on UNIX

UNIX systems require that appropriate languages are installed. To determine if the desired language is supported on an AIX, HP, or Solaris machine, use this command:

```
locale -a
```

The command returns all supported locales on the system. Note that Campaign does not require that you install support for X Fonts and translations.

If the language that you need is not yet installed, use the information from the following sources to configure supported UNIX variants to work with a given language:

- Solaris 9 International Language Environments Guide (<http://docs.sun.com/app/docs/doc/806-6642>)
- AIX 5.3 National Language Support Guide and Reference ([http://www-01.ibm.com/support/knowledgecenter/ssw\\_aix\\_53/com.ibm.aix.nls/doc/nlsgdrf/nlsgdrf.htm](http://www-01.ibm.com/support/knowledgecenter/ssw_aix_53/com.ibm.aix.nls/doc/nlsgdrf/nlsgdrf.htm))
- HP-UX 11 Internationalization Features White Paper (<http://docs.hp.com/en/5991-1194/index.html>)

#### Setting the language and locale on Windows

If the regional and language options on a Windows system are not yet configured for the language you need, do so now. If you need information about Windows language settings, see the resources available at <http://www.microsoft.com>.

You might need your system installation CD to complete this task.

**Note:** Be sure to restart the Windows system after you change the language settings.

### What to do next

The next step is to set encoding parameters for the web application server.

## **Set encoding parameters for the web application server (WebSphere only)**

This is one of the required steps when configuring Campaign to use a non-ASCII language or a non-US locale.

### **About this task**

For WebSphere® only, if you are using Campaign with a non-ASCII encoding, you must set `-Dclient.encoding.override=UTF-8` as a JVM argument to ensure that the application server uses UCS Transformation Format for encoding.

For detailed instructions, see the IBM WebSphere documentation.

### **What to do next**

The next step is to set Campaign language and locale property values.

## **Set Campaign language and locale property values**

This is one of the required steps when configuring Campaign to use a non-ASCII language or a non-US locale.

### **About this task**

Campaign supports multiple languages and locales for a single installation. Setting the Campaign language and locale property values is a required step when configuring Campaign to use a non-ASCII language or a non-US locale.

Use the Campaign configuration settings in Marketing Platform to set the values of configuration properties that control how Campaign performs the following tasks:

- reads and writes data in text files and log files
- reads and writes date, time, and text fields within the database
- handles text it receives from the database.

The configuration settings determine the language and locale that is used for translated Campaign messages (for example, text in the Campaign user interface) and the format of dates, numbers, and currency symbols on the application's web pages. The display language is also used to initialize the flowchart editor, which is vital for enabling flowcharts to display non-ASCII text.

**Note:** Campaign supports non-ASCII column names, table names, and database names. However, Campaign supports NCHAR, NVARCHAR, etc. columns on SQL Server databases only. DB2 treats NCHAR and NVARCHAR format columns as if they were regular text fields. Oracle treats them as numeric fields.

### **Procedure**

1. Choose **Settings > Configuration**.
2. Adjust the following properties, and record the values for future reference.
  - `Campaign > currencyLocale`
  - `Campaign > supportedLocales`
  - `Campaign > defaultLocale`
  - `Campaign > partitions > partition[n] > dataSources > [data_source_name] > DateFormat`
  - `Campaign > partitions > partition[n] > dataSources > [data_source_name] > DateOutputFormatString`

- Campaign > partitions > partition[n] > dataSources > [data\_source\_name] > DateTimeFormat
- Campaign > partitions > partition[n] > dataSources > [data\_source\_name] > DateTimeOutputFormatString
- Campaign > partitions > partition[n] > dataSources > [data\_source\_name] > EnableSelectOrderBy
- Campaign > partitions > partition[n] > dataSources > [data\_source\_name] > ODBCunicode
- Campaign > partitions > partition[n] > dataSources > [data\_source\_name] > StringEncoding
- Campaign > partitions > partition[n] > dataSources > [data\_source\_name] > SuffixOnCreateDateField
- Campaign > partitions > partition[n] > server > encoding > stringEncoding
- Campaign > partitions > partition[n] > server > encoding > forceDCTOneBytePerChar
- Campaign > unicaACListener > logStringEncoding
- Campaign > unicaACListener > systemStringEncoding

## **What to do next**

The next step is to unmap and remap system tables.

## **Un-map and re-map system tables**

This is one of the required steps when configuring Campaign to use a non-ASCII language or a non-US locale.

## **About this task**

If any language-sensitive parameter is not set correctly, it can be difficult to configure system tables when you map them in the Administration area of Campaign. The best practice is to set all parameters, then unmap ALL tables in the data source, log out, log in again, and then map all the tables again. Campaign retains its existing settings for a data source until the data source is no longer used (that is, until it is unmapped).

## **What to do next**

The next step is to test your database and server configurations.

## **Test your database and server configurations**

Before you start creating campaigns or other objects, you must ensure that your database and server settings are correctly configured. This is also a required step when configuring Campaign to use a non-ASCII language or a non-US locale.

## **About this task**

Perform the following tests to ensure that your configurations are correct:

- “Test the database configuration” on page 187
- “Test that your attribute table is correctly configured” on page 187
- “Test campaigns and flowcharts that have ASCII and non-ASCII characters” on page 187
- “Test flowchart input and output that contains ASCII and non-ASCII characters” on page 187
- “Test that the correct language directory is used” on page 188
- “Test the date formats in calendar reports” on page 189
- “Test that the currency symbol displays correctly for your locale” on page 189

## **Test the database configuration**

### **Procedure**

1. Select **Settings > Campaign Settings**. The Campaign Settings page appears.
2. Select **View Datasource Access**.
3. In the **Database Sources** dialog, select your data source name.  
The data source details are displayed, including the database type and its configuration settings.
4. Scroll down to the **StringEncoding** property, and verify that the value is the same as the value you set for **dataSources > StringEncoding** on the Marketing Platform Configuration page.
5. If the encoding is not as expected, remap your database tables and perform this test again.

## **Test that your attribute table is correctly configured**

### **Procedure**

1. Select **Settings > Campaign Settings**.  
The Campaign Settings page appears.
2. Select **Manage Table Mappings**
3. In the **Table Mappings** dialog, in the list of IBM Campaign system tables, select the Attribute Definition Table (**UA\_AttributeDef**) and click **Browse**.
4. In the **Attribute Definition Table** window, verify that non-ASCII characters display correctly.

## **Test campaigns and flowcharts that have ASCII and non-ASCII characters**

### **Procedure**

1. In Campaign, create a campaign using the following guidelines:
  - Use only ASCII characters for the names, but use non-ASCII characters in other fields, such as the **Description** and **Objective** fields.
  - The default dates displayed in the **Effective/Expiration dates** fields should appear in your locale's date format. Select new dates for each of the **Effective/Expiration dates** fields using the Calendar Tool, making sure that you select a day greater than "12" so that it will be obvious if the day is incorrectly represented as the month.
  - Verify that the dates you selected using the Calendar Tool are displayed correctly in the fields.
  - If there are custom campaign attributes existing, the field labels for these should appear in your database encoding, regardless of your default locale or user locale.
2. When you are finished with the basic campaign fields, click **Save and add a flowchart**.
3. Accept the default flowchart name, but use non-ASCII characters in the **Flowchart description** field.
4. Click **Save and edit flowchart**.
5. Verify that the campaign and flowchart are saved successfully and any campaign and flowchart labels with non-ASCII characters display correctly.
6. On the campaign's Summary tab, click **Edit summary** and modify the campaign name to use non-ASCII characters.
7. Click **Save changes** and verify that the non-ASCII characters display correctly.
8. Select the flowchart you just created, click **Edit** and rename the flowchart using non-ASCII characters.
9. Click **Save and finish** and verify that the non-ASCII characters display correctly.

## **Test flowchart input and output that contains ASCII and non-ASCII characters**

### **Procedure**

1. Still in the test flowchart you created in "Test campaigns and flowcharts that have ASCII and non-ASCII characters," click **Edit**.
2. Add a Select process to the flowchart and configure it using the following guidelines:
  - In the **Input** field, select a mapped user table. The available fields from the selected table are displayed in the **Available fields** area.

- Select a field that you know contains non-ASCII characters, and click **Profile**.
  - Verify that the non-ASCII characters display correctly.
- In the same Select process configuration, do another test, this time using a flat file with non-ASCII characters as the input:
    - In the **Input** field, select a select a flat file that uses non-ASCII characters. The available fields from the selected file are displayed in the **Available fields** area.
    - Verify that the non-ASCII characters display correctly.
  - On the **General** tab of the **Select process configuration** window, replace the default name in the **Process name** field with a name containing non-ASCII characters, then click **OK**.
  - Verify that the non-ASCII process name displays correctly on the process.
  - Add a Snapshot process to the flowchart and connect it so that it takes input from the existing Select process.
  - Configure the Snapshot process to **Export to** file.
  - Run the **Select > Snapshot** flowchart and locate the specified output file.
  - Verify that the output looks correct.
  - Add a Schedule process to the flowchart and configure a custom run:
    - In the **Process configuration** window, select **Custom run** from the **Schedule to run** field.
    - Use the **Calendar** to specify a date and time. For the date, choose a day greater than "12" so that it will be obvious if the day is incorrectly represented as the month.
    - Remember to click **Apply**, then click **OK** to save the date and time before closing the Calendar Tool.
  - Verify that the date and time are displayed correctly in the **Run on time** field.
  - Close the Process Configuration window and click **Save and exit**.
  - Select **Settings > Campaign settings**.  
The Campaign Settings page appears.
  - Select **Manage table mappings**.
  - In the Table Mappings window, in the list of IBM Campaign system tables, select the **UA\_Campaign** table and click **Browse**.
  - In the Campaign Table window, verify that non-ASCII characters display correctly.
  - In the Table Mapping window, select the **UA\_Flowchart** table and verify that non-ASCII characters display correctly.
  - When you successfully complete this test, delete the test campaigns and their flowcharts, and any files that you used for testing.

## **Test that the correct language directory is used**

### **Procedure**

- In Campaign, select **Analytics > Campaign Analytics > Calendar reports > Calendar of Campaigns**.  
The Calendar of Campaigns appears. Notice that the time delineation selector that appears vertically to the right of the report (day/week/2 week/month) is an image
- Right-click the image and select **Properties**.
- In the Properties window for the image, examine the Address (URL) for the image.  
For example, the Address might be:  
`http://localhost:7001/Campaign/de/images/calendar_nav7.gif`  
indicating that the language and locale setting is German (de).
- Verify that the language and locale setting matches either your default application setting or your user locale preference (if any).

## **Test the date formats in calendar reports**

### **Procedure**

1. In Campaign, click **Analytics > Campaign Analytics > Calendar reports > Calendar of Campaigns**.
2. Click through the **Day**, **Week**, **2 Week**, and **Month** tabs on the right to verify that the date formats in this report are correct.

## **Test that the currency symbol displays correctly for your locale**

### **Procedure**

1. Select **Settings > Campaign settings**.  
The Campaign Settings window appears.
2. Select **Offer template definitions**.
3. Create a new and on the **New offer template (Step 2 of 3)** page, select **Cost Per Offer** from the **Available standard and custom attributes** list, and move it to the **Selected Attributes** list.
4. Click **Next** and on the **New offer template (Step 3 of 3)** page, examine the **Cost per offer** attribute field under **Parameterized attributes**. Verify that the currency symbol appearing in parentheses is correct for your locale.
5. When you complete this test successfully, click **Cancel** because you don't need to create the offer template.

---

## **Configuring Campaign for multiple locales**

Configuring Campaign for more than one locale requires you to configure the system tables to support more than one locale. First, you run the appropriate unicode version of the database creation scripts when creating the system tables. Then you configure certain encoding properties, date and time formats, environment variables, and so on, depending on your database type.

### **Before you begin: Campaign must be installed**

The information in the rest of this section is presented under the assumption that Campaign is already installed AND that the Campaign system tables were created with the unicode version of the database creation script appropriate for your database type. The unicode versions are located in the `<CAMPAIGN_HOME>\dd1\unicode` directory.

## **Configuring for multiple locales on SQL Server**

### **About this task**

Log in to IBM EMM and configure the encoding properties listed in the following table. Set the values for the properties as specified here.

| <b>Property</b>                                                                          | <b>Value</b>                                                                                                                                                        |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Campaign > partitions > partition[n] > dataSources > [data_source_name] > StringEncoding | WIDEUTF-8                                                                                                                                                           |
| Campaign > partitions > partition[n] > server > encoding > stringEncoding                | UTF-8                                                                                                                                                               |
| Campaign > unicaACListener > logStringEncoding                                           | UTF-8                                                                                                                                                               |
| Campaign > unicaACListener > systemStringEncoding                                        | UTF-8. If necessary, you can set more than one encoding, separated by commas, but keep UTF-8 first in the series. For example: for example, UTF-8,ISO-8859-1,CP950. |
| Campaign > partitions > partition[n] > dataSources > [data_source_name] > ODBCunicode    | UCS-2                                                                                                                                                               |

For the configuration properties that specify date and time formats, accept the default values.

## Configuring for multiple locales on Oracle

When configuring for multiple locales and your system tables are Oracle, you configure encoding properties, date/time settings, environment variables, and the startup script for the Campaign Listener.

### Configure encoding properties (Oracle)

When you configure Campaign for multiple locales on Oracle, it is important to set the correct encoding properties.

#### About this task

Choose **Settings > Configuration**, then specify the encoding property values listed in the following table.

| Property                                                                                 | Value |
|------------------------------------------------------------------------------------------|-------|
| Campaign > partitions > partition[n] > dataSources > [data_source_name] > StringEncoding | UTF-8 |
| Campaign > partitions > partition[n] > server > encoding > stringEncoding                | UTF-8 |
| Campaign > unicaACListener > logStringEncoding                                           | UTF-8 |
| Campaign > unicaACListener > systemStringEncoding                                        | UTF-8 |

### Configure date/time settings (Oracle)

When you configure Campaign for multiple locales on Oracle, be sure to adjust the date and time values.

#### About this task

Choose **Settings > Configuration**, then specify the values for the properties listed in the following table.

| Property                                                                                             | Value                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Campaign > partitions > partition[n] > dataSources > [data_source_name] > DateFormat                 | DELIM_Y_M_D                                                                                                                                                             |
| Campaign > partitions > partition[n] > dataSources > [data_source_name] > DateOutputFormatString     | %Y-%m-%d                                                                                                                                                                |
| Campaign > partitions > partition[n] > dataSources > [data_source_name] > DateTimeFormat             | DT_DELIM_Y_M_D                                                                                                                                                          |
| Campaign > partitions > partition[n] > dataSources > [data_source_name] > DateTimeOutputFormatString | %Y-%m-%d %H:%M:%S<br>For Japanese databases, the delimiter for the time portion must be a period (.). So, for Japanese databases set the value to:<br>%Y/%m/%d %H.%M.%S |
| Campaign > partitions > partition[n] > dataSources > [data_source_name] > SQLOnConnect               | ALTER SESSION SET NLS_LANGUAGE='American'<br>NLS_TERRITORY='America'<br>NLS_TIMESTAMP_FORMAT='YYYY-MM-DD hh24:mi:ss'<br>NLS_DATE_FORMAT='YYYY-MM-DD'                    |

## Configure environment variables (Oracle)

### About this task

On Campaign client machines, set the value for the NLS\_LANG variable as follows:

```
AMERICAN_AMERICA.UTF8
```

For example:

```
set NLS_LANG=AMERICAN_AMERICA.UTF8
```

## Configure the cmpServer.bat file (Oracle)

### About this task

On the Campaign client machines, modify the Campaign Listener startup script as follows:

#### For Windows

Add the following line to the cmpServer.bat file, located in the <CAMPAIGN\_HOME>/bin directory:

```
set NLS_LANG=AMERICAN_AMERICA.UTF8
```

#### For UNIX

Add the following lines to the rc.unica\_ac file, located in the <CAMPAIGN\_HOME>/bin directory:

```
NLS_LANG=AMERICAN_AMERICA.UTF8
```

```
export NLS_LANG
```

(The syntax will vary depending on operating system).

## Configuring for multiple locales on DB2

To configure IBM Campaign for multiple locales when your system tables are DB2, you must adjust encoding properties, date/time settings, environment variables, and the application server startup script.

First, identify the DB2 database code set and code page. For localized environments, the DB2 database must have the following configuration:

- Database code set = UTF-8
- Database code page = 1208

When you configure Campaign, make the following adjustments:

- Set the StringEncoding properties to the DB2 database code set value (UTF-8), and
- Set the DB2CODEPAGE DB2 environment variable to the DB2 database code page value.

Both of these adjustments are explained in the following sections.

## Configure encoding properties (DB2)

When you configure Campaign for multiple locales on DB2, it is important to set the correct encoding properties.

### About this task

Choose **Settings > Configuration**, then specify the encoding property values listed in the following table.

For important information, see the property descriptions in "Setting properties for integration with IBM EMM products" in the *IBM Campaign Installation Guide*.

| Property                                                                                 | Value |
|------------------------------------------------------------------------------------------|-------|
| Campaign > partitions > partition[n] > dataSources > [data_source_name] > StringEncoding | UTF-8 |
| Campaign > partitions > partition[n] > server > encoding > stringEncoding                | UTF-8 |
| Campaign > unicaACListener > logStringEncoding                                           | UTF-8 |
| Campaign > unicaACListener > systemStringEncoding                                        | UTF-8 |

## Configure date/time settings (DB2)

When you configure Campaign for multiple locales on DB2, be sure to adjust the date and time values.

### About this task

Choose **Settings > Configuration**, then specify the values for the properties listed in the following table.

| Property                                                                                             | Value                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Campaign > partitions > partition[n] > dataSources > [data_source_name] > DateOutputFormatString     | %Y-%m-%d                                                                                                                                                                |
| Campaign > partitions > partition[n] > dataSources > [data_source_name] > DateTimeFormat             | DT_DELIM_Y_M_D                                                                                                                                                          |
| Campaign > partitions > partition[n] > dataSources > [data_source_name] > DateTimeOutputFormatString | %Y-%m-%d %H:%M:%S<br>For Japanese databases, the delimiter for the time portion must be a period (.). So, for Japanese databases set the value to:<br>%Y/%m/%d %H.%M.%S |

## Configure environment variables (DB2)

To configure environment variables for DB2, identify the DB2 database code page, then set the DB2CODEPAGE DB2 environment variable to the same value. For localized environments, the DB2 database code page must be 1208.

### About this task

Follow these steps to set the DB2CODEPAGE DB2 environment variable to 1208.

### Procedure

- On Windows, add the following line to the Campaign Listener startup script (<CAMPAIGN\_HOME>\bin\cmpServer.bat):
 

```
db2set DB2CODEPAGE=1208
```
- On UNIX:
  - After DB2 is started, the system administrator must type the following command from the DB2 instance user:
 

```
$ db2set DB2CODEPAGE=1208
```

After completing this step, the administrator does not need to run the db2set DB2CODEPAGE=1208 command from the DB2 instance user again, because the value is registered for the DB2 instance user. The root user cannot run the command because the root user might not have sufficient permission.

- b. To verify the setting, type the following command and confirm that the output is 1208:  
\$ db2set DB2CODEPAGE
- c. To confirm that the DB2CODEPAGE setting works for the root user, type the following command on the \$CAMPAIGN\_HOME/bin directory and confirm that the output is 1208:  
# . ./setenv.sh  
# db2set DB2CODEPAGE
- d. Run the following command to start the Campaign listener:  
. /rc.unica\_ac start

## Configure application server startup scripts (DB2)

### About this task

If you set the code page variable as described in “Configure environment variables (DB2)” on page 192, complete the following task. If you did not, the following modification is not required.

Modify your startup script for Weblogic or WebSphere, adding the following under JAVA\_OPTIONS:

-Dfile.encoding=utf-8

For example:

```
 ${JAVA_HOME}/bin/java ${JAVA_VM} ${MEM_ARGS} ${JAVA_OPTIONS}
-Dfile.encoding=utf-8 -Dweblogic.Name=${SERVER_NAME}
-Dweblogic.ProductionModeEnabled=${PRODUCTION_MODE}
-Djava.security.policy="${WL_HOME}/server/lib/weblogic.policy" weblogic.Server
```



---

# Chapter 18. Configuration properties for IBM Campaign

Choose **Settings > Configuration** to access configuration properties.

- Use the **Campaign** category to adjust properties for IBM Campaign.
- Use the **Reports** category to adjust reporting properties.
- Use the **General** and **Platform** categories to adjust properties that affect the IBM EMM suite. For information, see the online help or the *IBM Marketing Platform Administrator's Guide*.
- Configuration categories for other products, such as eMessage, are described in the documentation for those products.

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## Configuration properties for IBM Campaign

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### Campaign

To specify the locales and component applications that your installation supports, choose **Settings > Configuration**, then click the Campaign category.

#### **currencyLocale**

##### Description

The currencyLocale property is a global setting that controls how currency is displayed in the Campaign web application, regardless of the display locale.

**Important:** No currency conversion is performed by Campaign when the display locale changes (for example, if the multi-locale feature is implemented and the display locale changes based on user-specific locales). You must be aware that when a locale is switched, for example, from English US, in which a currency amount is, for example, US\$10.00, to a French locale, the currency amount is unchanged (10,00) even if the currency symbol changes with the locale.

##### Default value

en\_US

#### **supportedLocales**

##### Description

The supportedLocales property specifies the locales or language-locale pairs that Campaign supports. The value of this property is set by the installer when you install Campaign. For example: de,en,fr,ja,es,ko,pt,it,zh,ru.

##### Default value

All languages/locales into which Campaign has been localized.

## **defaultLocale**

### **Description**

The defaultLocale property specifies which of the locales specified in the supportedLocales property is considered the default display locale for Campaign. The value of this property is set by the installer when you install Campaign.

### **Default value**

en

## **acoInstalled**

### **Path**

### **Description**

The acoInstalled property specifies whether Contact Optimization is installed.

When Contact Optimization is installed and configured, set the value to yes, which causes the Contact Optimization process to be displayed in flowcharts. If the value is true and Contact Optimization is not installed or configured, the process is displayed but disabled (grayed out).

### **Default value**

false

### **Valid Values**

false and true

## **collaborateInstalled**

### **Description**

The collaborateInstalled property specifies whether Distributed Marketing is installed. When Distributed Marketing is installed and configured, set the value to true, which causes the Distributed Marketing features to be available in the Campaign user interface.

### **Default value**

false

### **Valid Values**

true | false

## **Campaign | collaborate**

The properties in this category pertain to Distributed Marketing configuration.

## **CollaborateIntegrationServicesURL**

### **Description**

The CollaborateIntegrationServicesURL property specifies the server and port number of Distributed Marketing. This URL is used by Campaign when a user publishes a flowchart to Distributed Marketing.

### **Default value**

`http://localhost:7001/collaborate/services/CollaborateIntegrationServices1.0`

## **Campaign | navigation**

Some of the properties in this category are used internally and should not be changed.

## welcomePageURI

### Configuration category

Campaign|navigation

### Description

The welcomePageURI property is used internally by IBM applications. It specifies the Uniform Resource Identifier of the Campaign index page. You should not change this value.

### Default value

No default value defined.

## seedName

### Configuration category

Campaign|navigation

### Description

The seedName property is used internally by IBM applications. You should not change this value.

### Default value

No default value defined.

## type

### Configuration category

Campaign|navigation

### Description

The type property is used internally by IBM applications. You should not change this value.

### Default value

No default value defined.

## httpPort

### Configuration category

Campaign|navigation

### Description

This property specifies the port used by the Campaign web application server. If your installation of Campaign uses a port that is different from the default, you must edit the value of this property.

### Default value

7001

## httpsPort

### Configuration category

Campaign|navigation

### Description

If SSL is configured, this property specifies the port used by the Campaign web application server for secure connections. If your installation of Campaign uses a secure port that is different from the default, you must edit the value of this property.

### Default value

7001

## serverURL

### Configuration category

Campaign|navigation

### Description

The serverURL property specifies the URL used by Campaign. If your installation of Campaign has a URL that is different from the default, you should edit the value as follows:

`http://machine_name_or_IP_address:port_number/context-root`

### Default value

`http://localhost:7001/Campaign`

## logoutURL

### Configuration category

Campaign|navigation

### Description

The logoutURL property is used internally to call the logout handler of the registered application if the user clicks the logout link. Do not change this value.

## serverURLInternal

### Configuration category

Campaign|navigation

### Description

The serverURLInternal property specifies the URL for the Campaign web application when SiteMinder is used; this property is also used for internal communication with other IBM EMM applications, such as eMessage and Interact. If the property is empty, the value in the serverURL property is used. Modify this property if you need internal application communication to be http and external communication to be https. If you use SiteMinder, you must set this value to the URL for the Campaign web application server, formatted as follows:

`http://machine_name_or_IP_address:port_number/context-root`

### Default value

No default value defined.

## campaignDetailPageURI

### Configuration category

Campaign|navigation

### Description

The campaignDetailPageURI property is used internally by IBM applications. It specifies the Uniform Resource Identifier of the Campaign detail page. You should not change this value.

### Default value

`campaignDetails.do?id=`

## flowchartDetailPageURI

### Configuration category

Campaign|navigation

### Description

The `flowchartDetailPageURI` property is used to construct a URL to navigate to the details of a flowchart in a specific campaign. You should not change this value.

**Default value**

`flowchartDetails.do?campaignID=&id=`

## **schedulerEditPageURI**

**Configuration category**

Campaign|navigation

**Description**

This property is used to construct a URL to navigate to the Scheduler page. Do not change this value.

**Default value**

`jsp/flowchart/scheduleOverride.jsp?taskID=`

## **offerDetailPageURI**

**Configuration category**

Campaign|navigation

**Description**

The `offerDetailPageURI` property is used to construct a URL to navigate to the details of a specific offer. You should not change this value.

**Default value**

`offerDetails.do?id=`

## **offerlistDetailPageURI**

**Configuration category**

Campaign|navigation

**Description**

The `offerlistDetailPageURI` property is used to construct a URL to navigate to the details of a specific offer list. You should not change this value.

**Default value**

`displayOfferList.do?offerListId=`

## **mailingDetailPageURI**

**Configuration category**

Campaign|navigation

**Description**

This property is used to construct a URL to navigate to the mailing details page for eMessage. Do not change this value.

**Default value**

`view/MailingDetails.do?mailingId=`

## **optimizeDetailPageURI**

**Configuration category**

Campaign|navigation

### Description

This property is used to construct a URL to navigate to IBM Contact Optimization details page.  
Do not change this value.

### Default value

optimize/sessionLinkClicked.do?optimizeSessionID=

## optimizeSchedulerEditPageURI

### Configuration category

Campaign|navigation

### Description

This property is used to construct a URL to navigate to the IBM Contact Optimization Scheduler edit page. Do not change this value.

### Default value

optimize/editOptimizeSchedule.do?taskID=

## displayName

### Configuration category

Campaign|navigation

### Description

The displayName property specifies the link text used for the Campaign link in the drop-down menu that exists in the GUI of each IBM product.

### Default value

Campaign

## Campaign | caching

The properties in the caching category specify the length of time that cached data for channels, initiatives, campaigns, sessions, and offers is retained.

## offerTemplateDataTTLSeconds

### Description

The offerTemplateDataTTLSeconds property specifies the length of time, in seconds, that the system retains the Offer Template cache data (Time to Live). An empty value means the cache data is never purged.

### Default value

600 (10 minutes)

## campaignDataTTLSeconds

### Description

The campaignDataTTLSeconds property specifies the length of time, in seconds, that the system retains the Campaign cache data (Time to Live). An empty value means the cache data is never purged.

### Default value

600 (10 minutes)

## **sessionDataTTLSeconds**

### **Description**

The `sessionDataTTLSeconds` property specifies the length of time, in seconds, that the system retains the Session cache data (Time to Live). An empty value means the cache data is never purged.

### **Default value**

600 (10 minutes)

## **folderTreeDataTTLSeconds**

### **Description**

The `folderTreeDataTTLSeconds` property specifies the length of time, in seconds, that the system retains the Folder Tree cache data (Time to Live). An empty value means the cache data is never purged.

### **Default value**

600 (10 minutes)

## **attributeDataTTLSeconds**

### **Description**

The `attributeDataTTLSeconds` property specifies the length of time, in seconds, that the system retains the Offer Attribute cache data (Time to Live). An empty value means the cache data is never purged.

### **Default value**

600 (10 minutes)

## **initiativeDataTTLSeconds**

### **Description**

The `initiativeDataTTLSeconds` property specifies the length of time, in seconds, that the system retains the Initiative cache data (Time to Live). An empty value means the cache data is never purged.

### **Default value**

600 (10 minutes)

## **offerDataTTLSeconds**

### **Description**

The `offerDataTTLSeconds` property specifies the length of time, in seconds, that the system retains the Offer cache data (Time to Live). An empty value means the cache data is never purged.

### **Default value**

600 (10 minutes)

## **segmentDataTTLSeconds**

### **Description**

The `segmentDataTTLSeconds` property specifies the length of time, in seconds, that the system retains the Segment cache data (Time to Live). An empty value means the cache data is never purged.

**Default value**

600 (10 minutes)

## Campaign | partitions

This category contains properties used to configure all Campaign partitions, including the default partition, which is named partition1. One category should be created for each Campaign partition. This section describes the properties in the partition[n] category, which apply to all partitions you configure in Campaign.

### Campaign | partitions | partition[n] | eMessage

Define properties in this category to define characteristics of recipient lists and specify the location of resources that upload the lists to IBM EMM Hosted Services.

#### eMessagePluginJarFile

**Description**

Complete path to the location of the file that operates as the Recipient List Uploader (RLU). This plug-in to Campaign uploads OLT data and associated metadata to the remote services hosted by IBM. The location that you specify must be the full local directory path in the file system for the computer that hosts the Campaign web application server.

The IBM installer populates this setting automatically for the default partition when you run the installer. For other partitions, you must configure this property manually. Because there is only one RLU for each eMessage installation, all partitions must specify the same location for the RLU.

Do not change this setting unless IBM instructs you to do so.

**Default value**

No default value defined.

**Valid Values**

Full local directory path to where you installed the Campaign web server.

#### defaultSeedInterval

**Description**

The number of messages between seed messages if defaultSeedType is Distribute list.

**Default value**

1000

#### defaultSeedType

**Description**

The default method that eMessage uses to insert seed addresses into a recipient list.

**Default value**

Distribute IDS

**Valid Values**

- Distribute IDS - Distribute IDs evenly, based on the size of the recipient list and the number of seed addresses available, inserts seed addresses at equal intervals throughout the entire recipient list.
- Distribute list - Insert seed address for every defaultSeedInterval IDs in main list. Inserts the entire list of available seed addresses at specified intervals throughout the recipient list. You must specify the interval between insertion points.

## **oltTableNamePrefix**

### **Description**

Used in the generated schema for the output list table. You must define this parameter.

### **Default value**

OLT

### **Valid Values**

The prefix can contain no more than 8 alphanumeric or underscore characters, and must start with a letter.

## **oltDimTableSupport**

### **Description**

This configuration parameter controls the ability to add dimension tables to output list tables (OLT) created in the eMessage schema. Dimension tables are required to use advanced scripting for email to create data tables in email messages.

The default setting is False. You must set this property to True so that marketers can create dimension tables when they use the eMessage process to define a recipient list. For more information about creating data tables and working with advanced scripts for email, see the *IBM eMessage User's Guide*.

### **Default value**

False

### **Valid Values**

True | False

## **Campaign | partitions | partition[n] | eMessage | contactAndResponseHistTracking**

Use the properties in this category to configure eMessage offer integration with IBM Campaign for the current partition.

### **etlEnabled**

### **Description**

Campaign uses its own ETL process to extract, transform, and load offer response data from the eMessage tracking tables into the Campaign contact and response history tables.

The ETL process coordinates information across the necessary tables, including UA\_UsrResponseType (Campaign response types) and UA\_RespTypeMapping (mapping of response types between Campaign and eMessage).

Setting the value to Yes ensures that information about eMessage offer contact and response history is coordinated between Campaign and eMessage. For example, email response data will be included in Campaign reports.

**Note:** You must also set Campaign | partitions | partition[n] | server | internal | eMessageInstalled to Yes for this partition or the ETL process will not run.

### **Default value**

No

### **Valid values**

Yes | No

## **runOnceADay**

### **Description**

Indicate whether the ETL process should run only once a day.

If the value is Yes: You must specify a **startTime**; the ETL job then runs until all of the records are processed; and the **sleepIntervalInMinutes** is ignored.

If the value is No: The ETL job starts as soon as the Campaign web server starts. The ETL job stops after all of the records are processed, then waits for the time specified by **sleepIntervalInMinutes**.

### **Default value**

No

### **Valid values**

Yes | No

## **batchSize**

### **Description**

The ETL process uses this parameter to fetch records that have been downloaded by the RCT into the local eMessage system tables. Because large values can impact performance, the list of available values is restricted to the valid values shown below. If you anticipate large volumes of records, adjust the **batchSize** together with the **sleepIntervalInMinutes** to process records at regular intervals.

### **Default value**

100

### **Valid values**

100 | 200 | 500 | 1000

## **sleepIntervalInMinutes**

### **Description**

Specify the interval in minutes between ETL jobs. This option determines the wait time after a job finishes. The ETL process waits for this duration before starting the next job. Multiple jobs can run synchronously and there may be multiple ETL jobs per partition.

If **runOnceADay** is Yes, you cannot set a sleep interval.

### **Default value**

60

### **Valid values**

Positive integers

## **startTime**

### **Description**

Specify a time to start the ETL job. You must use the English locale format to specify the start time.

### **Default value**

12:00:00 AM

### **Valid values**

Any valid time in the format hh:mm:ss AM/PM

## **notificationScript**

### **Description**

An optional executable or script file that is run after each ETL job is done. For example, you might want to be notified of the success or failure of each ETL job, for monitoring purposes. The notification script runs every time the ETL job for a given partition finishes running.

The parameters passed in to this script are fixed and cannot be changed. The following parameters can be used by the script:

- etlStart: The start time of ETL in number of milliseconds.
- etlEnd: The end time of ETL in number of milliseconds.
- totalCHRecords: Total number of contact records processed.
- totalRHRecords: Total number of response history records processed.
- executionStatus: Execution status of the ETL with value 1 (failed) or 0 (succeeded).

### **Default value**

No default value defined.

### **Valid values**

Any valid path that the Campaign server can access with Read and Execute permissions. For example: D:\myscripts\scriptname.exe

## **Campaign | partitions | partition[n] | reports**

The **Campaign | partitions | partition[n] | reports** property defines the different types of folders for reports.

## **offerAnalysisTabCachedFolder**

### **Description**

The **offerAnalysisTabCachedFolder** property specifies the location of the folder that contains the specification for bursted (expanded) offer reports listed on the Analysis tab when you reach it by clicking the Analysis link on the navigation pane. The path is specified by using the XPath notation.

### **Default value**

```
/content/folder[@name='Affinium Campaign - Object Specific Reports']/
folder[@name='offer']/folder[@name='cached']
```

## **segmentAnalysisTabOnDemandFolder**

### **Description**

The **segmentAnalysisTabOnDemandFolder** property specifies the location of the folder that contains the segment reports listed on the Analysis tab of a segment. The path is specified by using the XPath notation.

### **Default value**

```
/content/folder[@name='Affinium Campaign - Object Specific Reports']/
folder[@name='segment']/folder[@name='cached']
```

## **offerAnalysisTabOnDemandFolder**

### **Description**

The `offerAnalysisTabOnDemandFolder` property specifies the location of the folder that contains the offer reports listed on the Analysis tab of an offer. The path is specified by using the XPath notation.

#### Default value

```
/content/folder[@name='Affinium Campaign - Object Specific Reports']/
folder[@name='offer']
```

### **segmentAnalysisTabCachedFolder**

#### Description

The `segmentAnalysisTabCachedFolder` property specifies the location of the folder that contains the specification for bursted (expanded) segment reports listed on the Analysis tab when you reach it by clicking the Analysis link on the navigation pane. The path is specified by using the XPath notation.

#### Default value

```
/content/folder[@name='Affinium Campaign - Object Specific Reports']/
folder[@name='segment']
```

### **analysisSectionFolder**

#### Description

The `analysisSectionFolder` property specifies the location of the root folder where report specifications are stored. The path is specified by using the XPath notation.

#### Default value

```
/content/folder[@name='Affinium Campaign']
```

### **campaignAnalysisTabOnDemandFolder**

#### Description

The `campaignAnalysisTabOnDemandFolder` property specifies the location of the folder that contains the campaign reports listed on the Analysis tab of a campaign. The path is specified by using the XPath notation.

#### Default value

```
/content/folder[@name='Affinium Campaign - Object Specific Reports']/
folder[@name='campaign']
```

### **campaignAnalysisTabCachedFolder**

#### Description

The `campaignAnalysisTabCachedFolder` property specifies the location of the folder that contains the specification for bursted (expanded) campaign reports listed on the Analysis tab when you reach it by clicking the Analysis link on the navigation pane. The path is specified by using the XPath notation.

#### Default value

```
/content/folder[@name='Affinium Campaign - Object Specific Reports']/
folder[@name='campaign']/folder[@name='cached']
```

### **campaignAnalysisTabEMessageOnDemandFolder**

#### Description

The `campaignAnalysisTabEmessageOnDemandFolder` property specifies the location of the folder that contains the eMessage reports listed on the Analysis tab of a campaign. The path is specified by using the XPath notation.

#### Default value

```
/content/folder[@name='Affinium Campaign']/folder[@name='eMessage Reports']
```

### **campaignAnalysisTabInteractOnDemandFolder**

#### Description

Report server folder string for Interact reports.

#### Default value

```
/content/folder[@name='Affinium Campaign']/folder[@name='Interact Reports']
```

#### Availability

This property is applicable only if you install Interact.

### **interactiveChannelAnalysisTabOnDemandFolder**

#### Description

Report server folder string for Interactive Channel analysis tab reports.

#### Default value

```
/content/folder[@name='Affinium Campaign - Object Specific Reports']/
folder[@name='interactive channel']
```

#### Availability

This property is applicable only if you install Interact.

### **Campaign | partitions | partition[n] | validation**

The Validation Plugin Development Kit (PDK), delivered with Campaign, allows third parties to develop custom validation logic for use in Campaign. Properties in the `partition[n] > validation` category specify the classpath and class name of the custom validation program, and an optional configuration string.

### **validationClass**

#### Description

The `validationClass` property specifies the name of the class used for validation in Campaign. The path to the class is specified in the `validationClasspath` property. The class must be fully qualified with its package name.

For example:

```
com.unica.campaign.core.validation.samples.SimpleCampaignValidator
```

indicates the `SimpleCampaignValidator` class from the sample code.

This property is undefined by default, which causes Campaign to perform no custom validation.

#### Default value

No default value defined.

### **validationConfigString**

#### Description

The validationConfigString property specifies a configuration string that is passed into the validation plugin when Campaign loads it. The use of the configuration string may vary, depending on the plugin used.

This property is undefined by default.

#### Default value

No default value defined.

### **validationClasspath**

#### Description

The validationClasspath property specifies the path to the class used for custom validation in Campaign.

- Use either a full path or a relative path. If the path is relative, the behavior depends on the application server that is running Campaign. WebLogic uses the path to the domain work directory, which by default is c:\bea\user\_projects\domains\mydomain.
- If the path ends in a slash (forward slash / for UNIX or backslash \ for Windows), Campaign assumes that it points to the location of the Java™ plug-in class that should be used.
- If the path does not end in a slash, Campaign assumes that it is the name of a .jar file that contains the Java class. For example, the value /<CAMPAIGN\_HOME>/devkits/validation/lib/validator.jar is the path on a UNIX platform that points to the JAR file that is provided with the plug-in developer's kit.

This property is undefined by default, which causes the property to be ignored.

#### Default value

No default value defined.

### **Campaign | partitions | partition[n] | audienceLevels | audienceLevel**

Do not edit properties in this category. These properties are created and populated when a user creates audience levels on the Administration page in Campaign.

### **numFields**

#### Description

This property indicates the number of fields in the audience level. Do not edit this property.

#### Default value

No default value defined.

### **audienceName**

#### Description

This property indicates the audience name. Do not edit this property.

#### Default value

No default value defined.

### **Campaign | partitions | partition[n] | audienceLevels | audienceLevel | field[n]**

Properties in the this category define an audience level field. These properties are populated when a user creates audience levels on the Administration page in Campaign You should not edit properties in this category.

### **type**

#### Description

The `partition[n] > audienceLevels > audienceLevel > field[n] > type` property is populated when a user creates audience levels on the Administration page in Campaign. You should not edit this property.

#### Default value

No default value defined.

#### name

##### Description

The `partition[n] > audienceLevels > audienceLevel > field[n] > name` property is populated when a user creates audience levels on the Administration page in Campaign. You should not edit this property.

#### Default value

No default value defined.

## Campaign | partitions | partition[n] | dataSources

The properties in `Campaign | partitions | partition[n] | dataSources` determine how IBM Campaign interacts with databases, including its own system tables, for the specified partition.

These properties specify the databases that IBM Campaign can access and they control many aspects of how queries are formed.

Each data source that you add in IBM Campaign is represented by a category under `partition > partition [n] > dataSources > <data-source-name>`.

**Note:** The IBM Campaign system tables data source for each partition must be named `UA_SYSTEM_TABLES` in IBM Marketing Platform, and every IBM Campaign partition must have a `dataSources > UA_SYSTEM_TABLES` category on the Configuration page.

## AccessLibrary

##### Description

IBM Campaign chooses its data source access library according to the data source type. For example, `libora4d.so` is used for Oracle connectivity, while `libdb24d.so` is used for DB2 connectivity. In most cases, the default selections are appropriate. However, the `AccessLibrary` property can be changed if the default value proves to be incorrect in your IBM Campaign environment. For example, 64-bit IBM Campaign provides two ODBC access libraries: one appropriate for ODBC data sources compatible with the unixODBC implementation (`libodb4d.so`) and the other compatible with the DataDirect implementation (`libodb4dDD.so`, used by IBM Campaign to access, for example, Teradata).

## Additional libraries for AIX

##### Description

IBM Campaign includes two additional libraries for AIX ODBC driver managers that support the ODBC ANSI API rather than the ODBC Unicode API:

- `libodb4dAO.so` (32- and 64-bit): ANSI-only library for unixODBC-compatible implementations
- `libodb4dDDAO.so` (64-bit only): ANSI-only library for DataDirect-compatible implementations

If you determine that the default access library must be overridden, set this parameter as required (for example, to `libodb4dDD.so`, overriding the default selection of `libodb4d.so`).

#### Default value

No default value defined.

## **AliasPrefix**

### **Description**

The AliasPrefix property specifies the way IBM Campaign forms the alias name that IBM Campaign creates automatically when using a dimension table and writing to a new table.

Note that each database has a maximum identifier length; check the documentation for the database you are using to be sure that the value you set does not exceed the maximum identifier length for your database.

### **Default value**

A

## **AllowBaseJoinsInSelect**

### **Description**

This property determines whether IBM Campaign attempts to do a SQL join of base tables (from the same data source) used in a Select process; otherwise, the equivalent join is done on the Campaign server.

### **Default value**

TRUE

### **Valid Values**

TRUE | FALSE

## **AllowSegmentUsingSQLCase**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

This property specifies whether the Segment process consolidates multiple SQL statements into a single SQL statement, when specific configuration conditions are met.

Setting this property to TRUE results in significant performance improvements when all of the following conditions are met:

- Segments are mutually exclusive.
- All segments come from a single table.
- Criteria for each segment are based on the IBM macro language.

In this case, IBM Campaign generates a single SQL CASE statement to perform segmentation, followed by segment-by-field processing on the Campaign application server.

### **Default value**

TRUE

### **Valid Values**

TRUE | FALSE

## **AllowTempTables**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

This property specifies whether IBM Campaign creates temporary tables in the database. Creating temporary tables can significantly improve the performance of campaigns.

When the value is TRUE, temporary tables are enabled. Each time a query is issued against the database (for example, by the Segment process), the resulting IDs are written to a temporary table in the database. When an additional query is issued, IBM Campaign can use that temporary table to retrieve rows from the database.

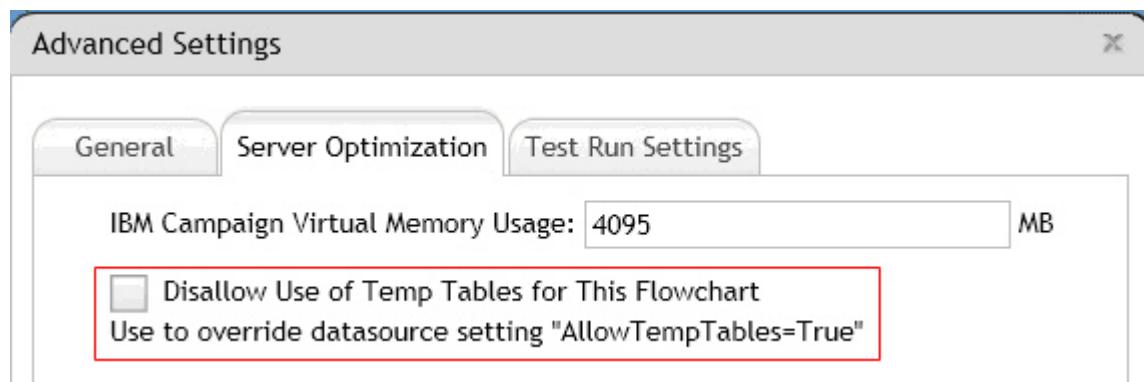
A number of IBM Campaign operations, such as `useInDbOptimization`, rely on the ability to create temp tables. If temporary tables are not enabled, IBM Campaign retains the selected IDs in the IBM Campaign server memory. The additional query retrieves IDs from the database and matches them to the IDs in server memory. This can negatively impact performance.

You must have appropriate privileges to write in the database to use temporary tables. Privileges are determined by the database login that you provide when you connect to the database.

#### Default value

TRUE

**Note:** Typically, you set **AllowTempTables** to TRUE. To override the value for a specific flowchart, open the flowchart in Edit mode, select **Advanced Settings** from the **Admin** menu  , then select **Disallow Use of Temp Tables for This Flowchart** on the Server Optimization tab.



## ASMSaveDBAuthentication

#### Configuration category

`Campaign|partitions|partition[n]|dataSources|dataSourcename`

#### Description

The ASMSaveDBAuthentication property specifies whether, when you log in to Campaign and map a table in a data source you did not previously log in to, IBM Campaign saves your user name and password in IBM EMM.

If you set this property to TRUE, Campaign does not prompt you for a user name and password when you log in to the data source. If you set this property to FALSE, Campaign prompts you for a user name and password each time you log in to the data source.

#### Default value

TRUE

#### Valid Values

TRUE | FALSE

## ASMUserForDBCredentials

#### Configuration category

`Campaign|partitions|partition[n]|dataSources|dataSourcename`

## Description

The ASMUUserForDBCredentials property specifies the IBM EMM user name that is assigned to the IBM Campaign system user (required for accessing the Campaign system tables).

This property is undefined by default.

## Default value

No default value defined.

## BulkInsertBlockSize

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

## Description

This property defines the maximum size of a data block, in number of records, that Campaign passes to the database at a time.

## Default value

100

## BulkInsertRequiresColumnType

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

## Description

The BulkInsertRequiresColumnType property is required to support Data Direct ODBC data sources only. Set this property to TRUE for Data Direct ODBC data sources when you use bulk (array) inserts. Set the property to FALSE to be compatible with most other ODBC drivers.

## Default value

FALSE

## BulkReaderBlockSize

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

## Description

The BulkReaderBlockSize property defines the size of a data block, in number of records, that Campaign reads from the database at a time.

## Default value

2500

## ConditionalSQLCloseBracket

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

## Description

The ConditionalSQLCloseBracket property specifies the type of bracket that is used to indicate the end of a conditional segment in raw SQL custom macros. Conditionalized segments that are enclosed in the specified open and close bracket type are used only if temp tables exist. They are ignored if there are no temp tables.

## Default value

} (closing curly brace)

## ConditionalSQLOpenBracket

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### Description

The ConditionalSQLOpenBracket property specifies the type of bracket used to indicate the start of a conditional segment in raw SQL custom macros. Conditionalized segments enclosed within the brackets specified by the ConditionalSQLOpenBracket and ConditionalSQLCloseBracket properties are used only if temp tables exist, and are ignored if there are no temp tables.

### Default value

{ (opening curly brace)

## ConnectionCacheSize

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### Description

The ConnectionCacheSize property specifies the number of connections that Campaign maintains in a cache for each data source.

By default (N=0), Campaign establishes a new connection to a data source for each operation; if Campaign maintains a cache of connections and a connection is available for reuse, Campaign uses the cached connection rather than establishing a new connection.

If the setting is not 0, when a process is done with a connection, Campaign keeps up to the specified number of connections open for an amount of time that is specified by the InactiveConnectionTimeout property. After this time expires, the connections are removed from the cache and closed.

### Default value

0 (zero)

## DateFormat

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### Description

Campaign uses the value of the DateFormat property to determine how to parse data in date formats when using the Campaign macro language or when interpreting data from date columns.

Set the value of the DateFormat property to the format in which Campaign expects to receive dates from this data source. The value must match the format that your database uses to display dates on select. For most databases, this setting is the same as the setting for the DateOutputFormatString property.

**Note:** If you use the multi-locale feature, do not use date formats that contain 3-letter months (MMM), %b (abbreviated month name), or %B (full month name). Instead, use a delimited or fixed format with a numeric value for the month.

To determine the date format that your database uses, select a date from the database as described below.

### Selecting a date by database

Table 56. Date formats

| Database   | To determine the correct setting                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DB2        | <p>Connect to the database from a machine that is running the Campaign server. Use db2test in the Campaign\bin directory to connect and issue the following command:</p> <pre>values current date</pre> <p>If your operating system does not provide the db2test utility, use the cxntest utility to test connections to the target database.g</p>                                                                                                                                    |
| Netezza    | <p>Connect to the database from a machine that is running the Campaign server. Use odbctest, in the Campaign\bin directory, to connect and issue the following command:</p> <pre>CREATE TABLE date_test (f1 DATE); INSERT INTO date_test values (current_date); SELECT f1 FROM date_test;</pre> <p>Another way to select date format is to run following command:</p> <pre>SELECT current_date FROM ANY_TABLE limit 1;</pre> <p>where ANY_TABLE is the name of any existing table</p> |
| Oracle     | <p>Log in to the database from the machine that is running the Campaign server. Use SQL *Plus to connect and issue the following command:</p> <pre>SELECT sysdate FROM dual</pre> <p>The current date is returned in NLS_DATE_FORMAT for that client.</p>                                                                                                                                                                                                                             |
| SQL Server | <p>Connect to the database from a machine that is running the Campaign listener. Use odbctest, in the Campaign\bin directory, to connect and issue the following command:</p> <pre>SELECT getdate()</pre>                                                                                                                                                                                                                                                                             |

### Additional considerations

Note the following database-specific instructions.

#### Teradata

Teradata allows you to define the date format on a per-column basis. In addition to dateFormat and dateOutputFormatString, you must set SuffixOnCreateDateField. To be consistent with our system table settings, use:

- SuffixOnCreateDateField = FORMAT 'YYYY-MM-DD'
- DateFormat = DELIM\_Y\_M\_D
- DateOutputFormatString = %Y-%m-%d

#### SQL Server

If the **Use regional settings when outputting currency, numbers, dates, and times** option is not checked in the ODBC data source configuration, then you cannot reset the date format. In general, it is easier to leave this setting cleared so that the date format configuration does not change for each language.

#### Default value

DELIM\_Y\_M\_D

#### Valid Values

Any of the formats that are specified in the DATE macro

## DateOutputFormatString

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### Description

The DateOutputFormatString property specifies the format of the date datatype to be used when Campaign writes any date, such as a campaign start or end date, to a database. Set the value of the DateOutputFormatString property to the format that the data source expects for columns of the type date. For most databases, this setting is the same as the setting for the [data\_source\_name] > DateFormat property.

The DateOutputFormatString property can be set to any of the formats that are specified for format\_string in the DATE\_FORMAT macro. The DATE\_FORMAT macro accepts two different kinds of formats. One is an identifier (for example, DELIM\_M\_D\_Y, DDMMYYYY, the same as accepted by the DATE macro), while the other is a format string. The value of the DateOutputFormatString property must be a format string - it must not be one of the DATE macro identifiers. Typically, use one of the delimited formats.

You can verify whether you selected the correct format by creating a table and inserting a date in the format you selected, as described in the following procedure.

### To verify DateOutputFormatString

1. Connect to the database using the appropriate tool, as described in the table for "Selecting a date by database".

Do not use the query tools that come with the database (such as SQL Server's Query Analyzer) to verify that dates are being sent to the database correctly. These query tools might convert the date format to something other than what Campaign actually sent to the database.

2. Create a table and insert a date in the format you selected. For example, if you selected %m/%d/%Y:

```
CREATE TABLE date_test (F1 DATE)
INSERT INTO date_test VALUES ('03/31/2004')
```

If the database allows the INSERT command to complete successfully, then you selected the correct format.

### Default value

%Y/%m/%d

## DateTimeFormat

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### Description

The value of the [data\_source\_name] > DateTimeFormat property specifies the format in which Campaign expects to receive datetime/timestamp data from a database. It must match the format your database uses to display datetime/timestamp data on select. For most databases, this setting is the same as the setting for DateOutputFormatString.

Typically, you set the DateTimeFormat by prepending your DateFormat value with DT\_ after determining the DateFormat value as described in the table for " Selecting a date by database".

**Note:** If you use the multi-locale feature, do not use date formats that contain 3-letter months (MMM), %b (abbreviated month name), or %B (full month name). Instead, use a delimited or fixed format with a numeric value for the month.

### Default value

DT\_DELIM\_Y\_M\_D

## Valid Values

Only delimited formats are supported, as follows:

- DT\_DELIM\_M\_D
- DT\_DELIM\_M\_D\_Y
- DT\_DELIM\_Y\_M
- DT\_DELIM\_Y\_M\_D
- DT\_DELIM\_M\_Y
- DT\_DELIM\_D\_M
- DT\_DELIM\_D\_M\_Y

## DateTimeOutputFormatString

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### Description

The DateTimeOutputFormatString property specifies the format of the datetime datatype to be used when Campaign writes any datetime, such as a campaign start or end date and time, to a database. Set the value of the DateTimeOutputFormatString property to the format that the data source expects for columns of the type datetime. For most databases, this setting is the same as the setting for the [data\_source\_name] > DateFormat property.

See DateOutputFormatString for a method for verifying that the format you select is correct.

### Default value

%Y/%m/%d %H:%M:%S

## DB2NotLoggedInitially

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### Description

This property determines whether IBM Campaign uses the not logged initially SQL syntax when populating temporary tables in DB2.

When set to TRUE, this property disables logging for inserts in to temp tables, which improves performance and decreases database resource consumption. When set to TRUE, if a temp table transaction fails for any reason, the table will become corrupted and must be dropped. All data previously contained in the table will be lost.

If your version of DB2 does not support the not logged initially syntax, set this property to FALSE.

### Default value

TRUE

## Valid Values

TRUE | FALSE

## DB2NotLoggedInitiallyUserTables

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### Description

The DB2NotLoggedInitiallyUserTables property determines whether IBM Campaign uses the not logged initially SQL syntax for inserts into DB2 user tables.

When set to TRUE, this property disables logging for inserts into the user tables, which improves performance and decreases database resource consumption. When set to TRUE, if a user table transaction fails for any reason, the table will become corrupted and must be dropped. All data previously contained in the table will be lost.

**Note:** The DB2NotLoggedInitiallyUserTables property is not used for the IBM Campaign system tables.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### DefaultScale

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

The DefaultScale property is used when Campaign creates a database field to store numeric values from a flat file or derived field, when using the Snapshot or Export process.

This property is not used for numeric values originating in a database table, unless the database field omits information about precision and scale. (Precision indicates the total number of digits allowed for the field. Scale indicates the number of digits allowed to the right of the decimal point. For example, 6.789 has a precision of 4 and a scale of 3. Values obtained from a database table include information about precision and scale, which Campaign uses when creating the field.)

Example: Flat files do not indicate precision and scale so you can use DefaultScale to specify how many places to the right of the decimal point to define for the field that is created. For example:

- DefaultScale=0 creates a field with no places to the right of the decimal point (only whole numbers can be stored).
- DefaultScale=5 creates a field with a maximum of 5 values to the right of the decimal point.

If the value set for DefaultScale exceeds the field's precision, DefaultScale=0 is used for those fields. For example, if the precision is 5, and DefaultScale=6, a value of zero is used.

#### Default value

0 (zero)

### DefaultTextType

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

The DefaultTextType property is intended for ODBC data sources. This property tells Campaign how to create text fields in the destination data source if the source text fields are from a different data source type. For example, the source text fields might be from a flat file or from a different type of DBMS. If the source text fields are from the same type of DBMS, this property is ignored and the text fields are created in the destination data source using the data types from the source text fields.

**Default value**

VARCHAR

**Valid Values**

VARCHAR | NVARCHAR

**DeleteAsRecreate****Configuration category**Campaign|partitions|partition[n]|dataSources|*datasourcename***Description**

The DeleteAsRecreate property specifies whether, when an output process is configured to REPLACE TABLE and if TRUNCATE is not supported, Campaign drops and recreates the table or only deletes from the table.

When the value is TRUE, Campaign drops the table and recreates it.

When the value is FALSE, Campaign executes a DELETE FROM from the table.

**Default value**

FALSE

**Valid Values**

TRUE | FALSE

**DeleteAsTruncate****Configuration category**Campaign|partitions|partition[n]|dataSources|*datasourcename***Description**

The DeleteAsTruncate property specifies whether, when an output process is configured to REPLACE TABLE, Campaign uses TRUNCATE TABLE or deletes from the table.

When the value is TRUE, Campaign runs a TRUNCATE TABLE from the table.

When the value is FALSE, Campaign runs a DELETE FROM from the table.

The default value depends on the database type.

**Default value**

- TRUE for Netezza, Oracle, and SQLServer.
- FALSE for other database types.

**Valid Values**

TRUE | FALSE

**DisallowTempTableDirectCreate****Configuration category**Campaign|partitions|partition[n]|dataSources|*datasourcename***Description**

This property is used by Oracle, Netezza, and SQL Server data sources and is ignored for all other data sources.

This property specifies the way Campaign adds data to a temp table.

When set to FALSE, Campaign performs direct create-and-populate SQL syntax using one command. For example: CREATE TABLE <table\_name> AS ... (for Oracle and Netezza) and SELECT <field\_names> INTO <table\_name> ... (for SQL Server).

When set to TRUE, Campaign creates the temp table and then populates it directly from table to table using separate commands.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### DSN

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Set this property to the data source name (DSN) as assigned in your ODBC configuration for this Campaign data source. This value is undefined by default.

Using the Campaign data source configuration properties, you can specify multiple logical data sources that refer to the same physical data source. For example, you can create two sets of data source properties for the same data source, one with AllowTempTables = TRUE and the other with AllowTempTables = FALSE. Each of these data sources would have a different name in Campaign, but if they refer to the same physical data source and they will have the same DSN value.

#### Default value

No default value defined.

### DSNUseOSAuthentication

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

The DSNUseOSAuthentication property applies only when an Campaign data source is SQL Server. Set the value to TRUE when the DSN is configured to use Windows Authentication mode.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### EnableBaseDimSelfJoin

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

The EnableBaseDimSelfJoin property specifies whether the Campaign database behavior will perform self-joins when the Base and Dimension tables are mapped to the same physical table and the Dimension is not related to the Base table on the Base table's ID field(s).

By default, this property is set to FALSE, and when the Base and Dimension tables are the same database table and the relationship fields are the same (for example, AcctID to AcctID), Campaign assumes that you do not want to perform a join.

## **Default value**

FALSE

## **EnableSelectDistinct**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

The EnableSelectDistinct property specifies whether the internal lists of IDs for Campaign are de-duplicated by the Campaign server or by the database.

When the value is TRUE, the database performs de-duplication, and SQL queries generated against the database then have the form (when appropriate):

```
SELECT DISTINCT key FROM table
```

When the value is FALSE, the Campaign server performs de-duplication, and SQL queries generated against the database have the form:

```
SELECT key FROM table
```

Leave the default value of FALSE if:

- Your database is constructed so that unique identifiers (primary keys of base tables) are already guaranteed to be de-duped.
- You want the Campaign application server to perform de-duplication to reduce resource consumption/burden on the database.

Regardless of what value you specify for this property, Campaign automatically ensures that keys are de-duplicated as required. This property merely controls where the de-duplication effort occurs (on the database or on the Campaign server).

## **Default value**

TRUE

### **Valid Values**

TRUE | FALSE

## **EnableSelectOrderBy**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

The EnableSelectOrderBy property specifies whether the internal lists of IDs for Campaign are sorted by the Campaign server or by the database.

When the value is TRUE, the database performs the sorting, and SQL queries generated against the database have the form:

```
SELECT <key> FROM <table> ORDER BY <key>
```

When the value is FALSE, the Campaign server performs the sorting, and SQL queries generated against the database have the form:

```
SELECT <key> FROM <table>
```

**Note:** Only set this property to FALSE if the audience levels used are text strings on a non-English database. All other scenarios can use the default of TRUE.

## **Default value**

TRUE

#### Valid Values

True | False

### ExcludeFromTableDisplay

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

The `ExcludeFromTableDisplay` parameter allows you to limit the database tables that are displayed during table mapping in Campaign. It does not reduce the number of table names retrieved from the database.

Table names matching the specified patterns are not displayed.

For example, if you set the value of this parameter to `sys.*`, tables with names that begin with `sys.` are not displayed. Note that the values for this parameter are case-sensitive.

#### Default value

`UAC_*`, which excludes temp tables and Extract tables, when the `ExtractTablePrefix` property's value is the default value

### ExtractTablePostExecutionSQL

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Use the `ExtractTablePostExecutionSQL` property to specify one or more complete SQL statements that run immediately after the creation and population of an Extract table.

Tokens available to `ExtractTablePostExecutionSQL` are described below.

| Token                              | Description                                                                                                                  |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <code>&lt;AMUSER&gt;</code>        | This token is replaced with the IBM EMM user name associated with the flowchart for which the Extract table was created.     |
| <code>&lt;CAMPAIGNCODE&gt;</code>  | This token is replaced with the code for the campaign associated with the flowchart for which the Extract table was created. |
| <code>&lt;CAMPAIGNNAME&gt;</code>  | This token is replaced with the name of the campaign associated with the flowchart for which the Extract table was created.  |
| <code>&lt;DBUSER&gt;</code>        | This token is replaced with the database user name for the database where the Extract table was created.                     |
| <code>&lt;FLOWCHARTNAME&gt;</code> | This token is replaced with the name of the flowchart associated with the Extract table creation.                            |
| <code>&lt;KEYCOLUMNS&gt;</code>    | This token is replaced with the Extract table column name(s).                                                                |
| <code>&lt;TABLENAME&gt;</code>     | This token is replaced with the Extract table name.                                                                          |
| <code>&lt;USER&gt;</code>          | This token is replaced with the Campaign user name of the user running the flowchart.                                        |

#### Default value

Not defined

#### Valid Values

A valid SQL statement

### ExtractTablePrefix

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

The ExtractTablePrefix property specifies a string that is automatically prepended to all Extract table names in Campaign. This property is useful when two or more data sources point to the same database. For details, see the TempTablePrefix description.

#### Default value

UAC\_EX

### ForceNumeric

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

The ForceNumeric property specifies whether Campaign retrieves numeric values as the data type double. When the value is set to TRUE, Campaign retrieves all numeric values as the data type double.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### InactiveConnectionTimeout

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

The InactiveConnectionTimeout property specifies the number of seconds an inactive Campaign database connection is left open before it is closed. Setting the value to 0 disables the timeout, leaving the connection open.

#### Default value

120

### InsertLogSize

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

The InsertLogSize property specifies when a new entry is entered in the log file while the Campaign Snapshot process is running. Every time the number of records written by the Snapshot process reaches a multiple of the number specified in the InsertLogSize property, a log entry is written. The log entries can help you determine how far a running Snapshot process has progressed. Setting this value too low may create large log files.

**Default value**

100000 (one hundred thousand records)

**Valid Values**

Positive integers

**JndiName****Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

**Description**

The JndiName property is used only when configuring the Campaign system tables (not for other data sources, such as customer tables). Set its value to the Java Naming and Directory Interface (JNDI) data source that is defined in the application server (WebSphere or WebLogic).

**Default value**

campaignPartition1DS

**LoaderCommand****Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

**Description**

This property specifies the command issued to invoke your database load utility in IBM Campaign. If you set this property, IBM Campaign enters the database loader utility mode for all output files from the Snapshot process that are used with the **Replace All Records** settings. This property also invokes the database loader utility mode when IBM Campaign uploads ID lists into temp tables.

IBM Contact Optimization uses the same configuration settings as Campaign for implementing a database load utility. If you configure IBM Campaign to work with a database load utility, you configure IBM Contact Optimization to use the same commands. Similarly, if you configure Contact Optimization to work with a database load utility, you are configuring IBM Campaign to work with a database load utility. Each assumes a different root directory in your IBM EMM installation directory. The root directory is /Campaign for IBM Campaign or /ContactOptimization for IBM Contact Optimization, so you can specify different commands in the loader command and template files.

The valid value for this property is any full path name either to the database load utility executable or to a script that launches the database load utility. Using a script allows you to perform additional setup before invoking the load utility.

Most database load utilities require several arguments to be launched successfully. These arguments can include specifying the data file and control file to load from and the database and table to load into. IBM Campaign supports the following tokens, which are replaced by the specified elements when the command is run. Consult your database load utility documentation for the correct syntax to use when invoking your database load utility.

This property is undefined by default.

Tokens available to **LoaderCommand** are described below.

| Token    | Description                                                                                |
|----------|--------------------------------------------------------------------------------------------|
| <AMUSER> | This token is replaced with the IBM EMM user name associated with the flowchart being run. |

| Token           | Description                                                                                                                                                                                                                                          |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart.                                                                                                                                                                 |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart being run.                                                                                                                                                        |
| <CONTROLFILE>   | This token is replaced with the full path and file name to the temporary control file that IBM Campaign generates according to the template that is specified in the <b>LoaderControlFileTemplate</b> property.                                      |
| <DATABASE>      | This token is replaced with the name of the data source that IBM Campaign is loading data into. This is the same data source name used in the category name for this data source.                                                                    |
| <DATAFILE>      | This token is replaced with the full path and file name to the temporary data file created by IBM Campaign during the loading process. This file is in the IBM Campaign Temp directory, UNICA_ACTMPDIR.                                              |
| <DBUSER>        | This token is replaced with the database user name for the database.                                                                                                                                                                                 |
| <DSN>           | This token is replaced with the value of the DSN property. If the DSN property is not set, the <DSN> token is replaced by the data source name used in the category name for this data source (the same value used to replace the <DATABASE> token). |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart being run.                                                                                                                                                                                     |
| <NUMFIELDS>     | This token is replaced with the number of fields in the table.                                                                                                                                                                                       |
| <PASSWORD>      | This token is replaced with the database password from the current flowchart connection to the data source.                                                                                                                                          |
| <TABLE>         | This token is obsolete. Use <TABLENAME> instead.                                                                                                                                                                                                     |
| <TABLENAME>     | This token is replaced with the database table name that IBM Campaign is loading data into. This is the target table from your Snapshot process or the name of the Temp Table being created by IBM Campaign.                                         |
| <USER>          | This token is replaced with the database user from the current flowchart connection to the data source.                                                                                                                                              |

### Default value

No default value defined.

### Valid Values

Any full path name either to the database load utility executable or to a script that launches the database load utility.

### LoaderCommandForAppend

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

This property specifies the command issued to invoke your database load utility for appending records to a database table in IBM Campaign. If you set this property, IBM Campaign enters database loader utility mode for all output files from the Snapshot process that are used with the **Append Records** settings.

This property is specified as a full path name either to the database load utility executable or to a script that launches the database load utility. Using a script allows you to perform additional setup before invoking the load utility.

Most database load utilities require several arguments to be successfully launched. These can include specifying the data file and control file to load from and the database and table to load into. The tokens are replaced by the specified elements when the command is run.

Consult your database load utility documentation for the correct syntax to use when invoking your database load utility.

This property is undefined by default.

Tokens available to **LoaderCommandForAppend** are described below.

| Token           | Description                                                                                                                                                                                                                                          |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart being run.                                                                                                                                                           |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart being run.                                                                                                                                                       |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart being run.                                                                                                                                                        |
| <CONTROLFILE>   | This token is replaced with the full path and file name to the temporary control file that Campaign generates according to the template that is specified in the <b>LoaderControlFileTemplate</b> property.                                          |
| <DATABASE>      | This token is replaced with the name of the data source that IBM Campaign is loading data into. This is the same data source name used in the category name for this data source.                                                                    |
| <DATAFILE>      | This token is replaced with the full path and file name to the temporary data file created by IBM Campaign during the loading process. This file is in the Campaign Temp directory, UNICA_ACTMPDIR.                                                  |
| <DBUSER>        | This token is replaced with the database user name for the database where the temp tables were created.                                                                                                                                              |
| <DSN>           | This token is replaced with the value of the DSN property. If the DSN property is not set, the <DSN> token is replaced by the data source name used in the category name for this data source (the same value used to replace the <DATABASE> token). |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the temp table creation.                                                                                                                                                       |
| <NUMFIELDS>     | This token is replaced with the number of fields in the table.                                                                                                                                                                                       |
| <PASSWORD>      | This token is replaced with the database password from the current flowchart connection to the data source.                                                                                                                                          |
| <TABLE>         | This token is obsolete. Use <TABLENAME> instead.                                                                                                                                                                                                     |

| Token       | Description                                                                                                                                                                                                  |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <TABLENAME> | This token is replaced with the database table name that IBM Campaign is loading data into. This is the target table from your Snapshot process or the name of the Temp Table being created by IBM Campaign. |
| <USER>      | This token is replaced with the database user from the current flowchart connection to the data source.                                                                                                      |

#### Default value

No default value defined.

### LoaderControlFileTemplate

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

This property specifies the full path and file name to the control file template configured for IBM Campaign. The path to the template is relative to the current partition. For example:  
loadscript.db2

When this property is set, IBM Campaign dynamically builds a temporary control file based on the specified template. The path and name of this temporary control file is available to the <CONTROLFILE> token that is available to the **LoaderCommand** property.

Before you use IBM Campaign in the database loader utility mode, you must configure the control file template that is specified by this parameter. The control file template supports the following tokens, which are dynamically replaced when the temporary control file is created by IBM Campaign.

For the correct syntax required for your control file, see your database loader utility documentation.

This property is undefined by default.

Tokens available to **LoaderControlFileTemplate** are the same as those described for the **LoaderCommand** property, plus the following special tokens, which are repeated once for each field in the outbound table.

| Token            | Description                                                                                                                                                                                                                                                                                                                                              |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <DBCOLUMNNUMBER> | This token is replaced with the column ordinal in the database.                                                                                                                                                                                                                                                                                          |
| <FIELDLENGTH>    | This token is replaced with the length of the field being loaded into the database.                                                                                                                                                                                                                                                                      |
| <FIELDNAME>      | This token is replaced with the name of the field being loaded into the database.                                                                                                                                                                                                                                                                        |
| <FIELDNUMBER>    | This token is replaced with the number of the field being loaded into the database.                                                                                                                                                                                                                                                                      |
| <FIELDTYPE>      | This token is replaced with the literal CHAR( ). The length of this field is specified between the parentheses (). If your database does not understand the field type CHAR, you can manually specify the appropriate text for the field type and use the <FIELDLENGTH> token. For example, for SQLSVR and SQL2000 you would use SQLCHAR(<FIELDLENGTH>). |
| <NATIVETYPE>     | This token is replaced with the actual database type that this field is loaded into.                                                                                                                                                                                                                                                                     |

| Token  | Description                                                                                                                                                                            |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <xyz>  | This token places the specified character(s) on all fields being loaded into the database, except the last. A typical use is <,> which repeats a comma for all fields except the last. |
| <~xyz> | This token places the specified characters only on the last repeated line.                                                                                                             |
| <!xyz> | This token places the specified character(s), including the angle brackets < >, on all lines.                                                                                          |

#### Default value

No default value defined.

### LoaderControlFileTemplateForAppend

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

This property specifies the full path and file name to the control file template configured in IBM Campaign. The path to the template is relative to the current partition. For example:  
loadappend.db2

When this property is set, IBM Campaign dynamically builds a temporary control file based on the specified template. The path and name of this temporary control file is available to the <CONTROLFILE> token that is available to the **LoaderCommandForAppend** property.

Before you use IBM Campaign in the database loader utility mode, you must configure the control file template that is specified by this property. See your database loader utility documentation for the correct syntax required for your control file.

The available tokens are the same as the tokens for the **LoaderControlFileTemplate** property.

This property is undefined by default.

#### Default value

No default value defined.

### LoaderDelimiter

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

This property specifies whether the temporary data file is a fixed-width or delimited flat file, and if it is delimited, the characters that IBM Campaign uses as delimiters.

If the value is undefined, IBM Campaign creates the temporary data file as a fixed width flat file.

If you specify a value, it is used when the loader is invoked to populate a table that is known to be empty. IBM Campaign creates the temporary data file as a delimited flat file, using the value of this property as the delimiter.

This property is undefined by default.

#### Default value

No default value defined.

#### Valid Values

Characters, which can be enclosed in double quotation marks, if wanted.

## **LoaderDelimiterAtEnd**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

Some external load utilities require that the data file be delimited and that each line end with the delimiter. To accommodate this requirement, set the **LoaderDelimiterAtEnd** value to TRUE, so that when the loader is invoked to populate a table that is known to be empty, IBM Campaign uses delimiters at the end of each line. For example, DB2 on Unix expects each record to be terminated by a line feed character only; Campaign Campaign on Windows uses carriage return and line feed characters. Putting a delimiter at the end of every record ensures that the last column in the data file will load properly.

FALSE

### **Default value**

FALSE

### **Valid Values**

TRUE | FALSE

## **LoaderDelimiterAtEndForAppend**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

Some external load utilities require that the data file be delimited and that each line end with the delimiter. To accommodate this requirement, set the **LoaderDelimiterAtEndForAppend** value to TRUE, so that when the loader is invoked to populate a table that is not known to be empty, IBM Campaign uses delimiters at the end of each line. For example, DB2 on Unix expects each record to be terminated by a line feed character only; IBM Campaign on Windows uses carriage return and line feed characters. Putting a delimiter at the end of every record ensures that the last column in the data file will load properly.

### **Default value**

FALSE

### **Valid Values**

TRUE | FALSE

## **LoaderDelimiterForAppend**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

This property specifies whether the temporary IBM Campaign data file is a fixed-width or delimited flat file, and, if it is delimited, the character or set of characters used as delimiters.

If the value is undefined, IBM Campaign creates the temporary data file as a fixed width flat file.

If you specify a value, it is used when the loader is invoked to populate a table that is not known to be empty. IBM Campaign creates the temporary data file as a delimited flat file, using the value of this property as the delimiter.

This property is undefined by default.

### **Default value**

No default value defined.

#### Valid Values

Characters, which you may enclose in double quotation marks, if wanted.

### LoaderNULLValueInDelimitedData

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

This property supports null values in delimited data for database loaders, specifically Netezza.  
Enter the string that represents a null value for the column.

#### Default value

null

### LoaderUseLocaleDP

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

This property specifies, when IBM Campaign writes numeric values to files to be loaded by a database load utility, whether the locale-specific symbol is used for the decimal point.

Set this value to FALSE to specify that the period (.) is used as the decimal point.

Set this value to TRUE to specify that the decimal point symbol appropriate to the locale is used.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### MaxItemsInList

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Allows you to specify the maximum number of items that IBM Campaign is allowed to include in a single list in SQL (for example, the list of values following an IN operator in a WHERE clause).

#### Default value

1000 (Oracle only), 0 (unlimited) for all other databases

#### Valid Values

integers

### MaxQueryThreads

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

This property specifies the upper limit on the number of simultaneous queries allowed to run against each database source from a single IBM Campaign flowchart. Higher values generally improve performance.

IBM Campaign runs database queries using independent threads. Because IBM Campaign processes run in parallel, it is common to have multiple queries running simultaneously against a single data source. If the number of queries to be run in parallel exceeds the MaxQueryThreads, the IBM Campaign server limits the number of simultaneous queries to the specified value.

The maximum value is unlimited.

**Note:** If maxReuseThreads is set to a non-zero value, it should be greater than or equal to the value of MaxQueryThreads.

#### Default value

Varies depending on the database

### MaxRowFetchRecords

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

For performance reasons, it is best to keep this number low.

When the selected number of IDs is less than the value specified by the MaxRowFetchRecords property, IBM Campaign passes the IDs to the database one at a time, in separate SQL queries. This process can be very time-consuming. If the number of selected IDs is greater than the value specified by this property, IBM Campaign uses temporary tables (if allowed on the database source), or it pulls down all the values from the table, not including any unnecessary values.

#### Default value

100

### MaxTempTableJoinPctSelectAll

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

When a query is issued, IBM Campaign creates a temporary table on the database containing the exact list of IDs, as a result of the query. When an additional query that selects all records is issued against the database, the MaxTempTableJoinPctSelectAll property specifies whether a join is performed with the temporary table.

If the relative size of the temporary table (specified as a percentage) is greater than the value of the MaxTempTableJoinPctSelectAll property, no join is performed. All records are selected first, then unwanted records are discarded.

If the relative size of the temporary table (specified as a percentage) is less than or equal to the value of MaxTempTableJoinPctSelectAll property, the join is performed with the temporary table first, and then the resulting IDs are retrieved to the server.

This property is applicable only if the value of the AllowTempTables property is set to TRUE. This property is ignored if the useInDbOptimization property is set to YES.

#### Default value

90

#### Valid Values

Integers between 0-100. A value of 0 means that temporary table joins are never used; a value of 100 means that table joins are always used, regardless of the size of the temporary table.

### Example

Assume that MaxTempTableJoinPctSelectAll is set to 90. First, you might want to select customers (CustID) with account balances (Accnt\_balance) greater than \$1,000 from the database table (Customer).

The corresponding SQL expression generated by the Select process may look like this:

```
SELECT CustID FROM Customer
WHERE Accnt_balance > 1000
```

The Select process may retrieve 100,000 IDs from the total table size of 1,000,000, which is 10%. If temporary tables are allowed, IBM Campaign writes the selected IDs (TempID) into a temporary table (Temp\_table) in the database.

Then, you might want to snapshot the selected IDs (CustID) together with the actual balance (Accnt\_balance). Since the relative size of the temporary table (Temp\_table) is less than 90 percent (MaxTempTableJoinPctSelectAll), the join is done with the temporary table first. The SQL expression generated by the Snapshot process may look like this:

```
SELECT CustID, Accnt_balance FROM Customer, Temp_table WHERE CustID = TempID
```

If the Select process retrieves more than 90 percent, the subsequent Snapshot process retrieves all the records, and matches them with the first set of IDs, discarding the unnecessary ones.

The SQL expression generated by the Snapshot process may look like this:

```
SELECT CustID, Accnt_balance FROM Customer
```

## MaxTempTableJoinPctWithCondition

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### Description

When a query is issued, IBM Campaign creates a temporary table on the database containing the exact list of IDs, as a result of the query. When an additional query, selecting records with limitation conditions is issued against the database, the MaxTempTableJoinPctWithCondition property specifies whether a join should be performed with the temporary table.

If the relative size of the temporary table (specified as a percentage) is greater than the value of MaxTempTableJoinPctWithCondition, no join is performed. This avoids the overhead in the database where it may not be needed. In this case, the query is issued against the database, the resulting list of IDs retrieved, and then unwanted records are discarded as they are matched to the list in server memory.

If the relative size of the temporary table (in percentage) is less than or equal to the value of MaxTempTableJoinPctWithCondition, the join is done with the temporary table first, and then the resulting IDs are retrieved to the server.

This property is applicable only if the value of the AllowTempTables property is set to TRUE.

### Default value

20

### Valid Values

Integers between 0-100. A value of 0 means that temporary table joins are never used; a value of 100 means that table joins are always used, regardless of the size of the temporary table.

## **MinReqForLoaderCommand**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

Use this property to set the threshold for using the bulk loader. IBM Campaign invokes the script assigned to the LoaderCommand property when the number of unique IDs in the input cell exceeds the value defined here. The value of this property does not represent the number of records that will be written.

If this property is not configured, IBM Campaign assumes that the value is the default value (zero). If this property is configured but a negative value or non-integer value is set as the value, a value of zero is assumed.

### **Default value**

0 (zero)

### **Valid Values**

Integers

## **MinReqForLoaderCommandForAppend**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

Use this property to set the threshold for using the bulk loader. IBM Campaign invokes the script assigned to the LoaderCommandForAppend parameter when the number of unique IDs in the input cell exceeds the value defined here. The value of this property does not represent the number of records that will be written.

If this property is not configured, IBM Campaign assumes that the value is the default value (zero). If this property is configured but a negative value or non-integer value is set as the value, a value of zero is assumed.

### **Default value**

0 (zero)

### **Valid Values**

Positive integers

## **NumberOfRetries**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

The NumberOfRetries property specifies the number of times IBM Campaign automatically retries a database operation on failure. IBM Campaign automatically resubmits queries to the database this number of times before reporting a database error or failure.

### **Default value**

0 (zero)

## **ODBCTableTypes**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

## Description

This property is empty by default, which is appropriate for all currently supported data sources.

## Default value

Not defined

## Valid Values

(empty)

## ODBCUnicode

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

## Description

The ODBCUnicode property specifies the type of encoding used in IBM Campaign ODBC calls. It is used only with ODBC data sources and is ignored when used with Oracle or DB2 native connectivity.

**Important:** If this property is set to UTF-8 or UCS-2, the data source's StringEncoding value must be set to either UTF-8 or WIDEUTF-8, otherwise the ODBCUnicode property's setting is ignored.

## Default value

disabled

## Valid Values

Possible values for this property are:

- Disabled: IBM Campaign uses ANSI ODBC calls.
- UTF-8: IBM Campaign uses Unicode ODBC calls and assumes that a SQLWCHAR is a single byte. This is compatible with DataDirect ODBC drivers.
- UCS-2: IBM Campaign uses Unicode ODBC calls and assumes that a SQLWCHAR is 2 bytes. This is compatible with Windows and unixODBC ODBC drivers.

## ODBCv2

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

## Description

Use the ODBCv2 property to specify which ODBC API specification IBM Campaign should use for the data source.

The default value of FALSE allows IBM Campaign to use the v3 API specification, while a setting of TRUE causes IBM Campaign to use the v2 API specification. Set the ODBCv2 property to TRUE for data sources that do not support the ODBC v3 API specification.

When the ODBCv2 property is set to TRUE, IBM Campaign does not support the ODBC Unicode API, and values other than disabled for the ODBCUnicode property are not recognized.

## Default value

FALSE

## Valid Values

TRUE | FALSE

## **OwnerForTableDisplay**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

Use this property to limit the table mapping display in IBM Campaign to tables in a specified schema. For example, to specify tables in the schema "dbo", set OwnerForTableDisplay=dbo.

### **Default value**

No default value defined.

## **PadTextWithSpaces**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

When set to TRUE, the PadTextWithSpaces property causes IBM Campaign to pad text values with spaces until the string is the same width as the database field.

### **Default value**

FALSE

### **Valid Values**

TRUE | FALSE

## **PostExtractTableCreateRunScript**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

Use this property to specify a script or executable for IBM Campaign to run after an Extract table has been created and populated.

Tokens available to **PostExtractTableCreateRunScript** are described below.

| Token           | Description                                                                                                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------|
| <DBUSER>        | This token is replaced with the database user name for the database where the Extract table was created.                     |
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which the Extract table was created.     |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which the Extract table was created.  |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which the Extract table was created. |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the Extract table creation.                            |
| <PASSWORD>      | This token is replaced with the database password from the current flowchart connection to the data source.                  |
| <KEYCOLUMNS>    | This token is replaced with the Extract table column name(s).                                                                |

**Default value**

Not defined

**Valid Values**

File name of a shell script or executable

**PostSegmentTableCreateRunScript****Configuration category**

Campaign|partitions|partition[n]|dataSources|*dataSourcename*

**Description**

Specifies a script or executable that IBM Campaign runs after a Segment temp table has been created and populated.

Tokens available to **PostSegmentTableCreateRunScript** are described below.

| Token           | Description                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <DBUSER>        | This token is replaced with the database user name for the database where the Segment temp table was created.                     |
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which the Segment temp table was created.     |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which the Segment temp table was created.  |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which the Segment temp table was created. |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the Segment temp table creation.                            |
| <PASSWORD>      | This token is replaced with the database password from the current flowchart connection to the data source.                       |
| <KEYCOLUMNS>    | This token is replaced with the Segment temp table column name(s).                                                                |

**Default value**

Not defined

**Valid Values**

File name of a script or executable

**PostSnapshotTableCreateRunScript****Configuration category**

Campaign|partitions|partition[n]|dataSources|*dataSourcename*

**Description**

Use the **PostSnapshotTableCreateRunScript** property to specify a script or executable that Campaign runs after a Snapshot table has been created and populated.

Tokens available to **PostSnapshotTableCreateRunScript** are described below.

| Token           | Description                                                                                                                   |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------|
| <DBUSER>        | This token is replaced with the database user name for the database where the Snapshot table was created.                     |
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which the Snapshot table was created.     |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which the Snapshot table was created.  |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which the Snapshot table was created. |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the Snapshot table creation.                            |
| <PASSWORD>      | This token is replaced with the database password from the current flowchart connection to the data source.                   |
| <KEYCOLUMNS>    | This token is replaced with the Snapshot table column name(s).                                                                |

#### Default value

Not defined

#### Valid Values

File name of a shell script or executable

### PostTempTableCreateRunScript

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Use the **PostTempTableCreateRunScript** property to specify a script or executable for Campaign to run after a temp table has been created and populated in a user data source or in the system tables database.

Tokens available to **PostTempTableCreateRunScript** are described below.

| Token           | Description                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|
| <DBUSER>        | This token is replaced with the database user name for the database where the temp tables were created.                 |
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which temp tables were created.     |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which temp tables were created.  |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which temp tables were created. |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the temp table creation.                          |
| <PASSWORD>      | This token is replaced with the database password from the current flowchart connection to the data source.             |

| Token        | Description                                                |
|--------------|------------------------------------------------------------|
| <KEYCOLUMNS> | This token is replaced with the temp table column name(s). |

#### Default value

No default value defined.

### PostUserTableCreateRunScript

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Specifies a script or executable that Campaign runs after a User table has been created and populated.

Tokens available to PostUserTableCreateRunScript are described below.

| Token           | Description                                                                                                               |
|-----------------|---------------------------------------------------------------------------------------------------------------------------|
| <DBUSER>        | This token is replaced with the database user name for the database where the User table was created.                     |
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which the User table was created.     |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which the User table was created.  |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which the User table was created. |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the User table creation.                            |
| <PASSWORD>      | This token is replaced with the database password from the current flowchart connection to the data source.               |
| <KEYCOLUMNS>    | This token is replaced with the User table column name(s).                                                                |

#### Default value

Not defined

#### Valid Values

File name of a script or executable

### PrefixOnSelectSQL

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Use the PrefixOnSelectSQL property to specify a string that is automatically prepended to all SELECT SQL expressions generated by Campaign.

This property applies only to SQL generated by Campaign, and does not apply to SQL in raw SQL expressions used in the Select process.

This property is automatically added to the SELECT SQL expression without checking its syntax. If you use this property, make sure that it is a legal expression.

This property is undefined by default.

Tokens available to **PrefixOnSelectSQL** are described below.

| Token           | Description                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which temp tables were created.     |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which temp tables were created. |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which temp tables were created.  |
| <DBUSER>        | This token is replaced with the database user name for the database where the temp tables were created.                 |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the temp table creation.                          |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                                   |

#### Default value

No default value defined.

### QueryThreadSleep

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

The QueryThreadSleep property affects the CPU utilization of the Campaign server process (UNICA\_ACSV). When the value is TRUE, the thread that the Campaign server process uses to check for query completion sleeps between checks. When the value is FALSE, the Campaign server process checks continuously for query completion.

#### Default value

TRUE

### ReaderLogSize

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

The ReaderLogSize parameter defines when Campaign makes a new entry in the log file when reading data from the database. Every time the number of records read from the database reaches a multiple of the number defined by this parameter, a log entry is written in the log file.

This parameter can help you determine how far a process has progressed in its run. Setting this value too low may create large log files.

#### Default value

1000000 (one million records)

**Valid Values**

Integers

**SegmentTempTablePrefix****Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

**Description**

Sets the prefix for Segment tables created by the CreateSeg process in this data source. This property is useful when two or more data sources point to the same database. For details, see the TempTablePrefix description.

**Default value**

UACS

**ShareConnection****Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

**Description**

The ShareConnection property is no longer used and should remain set to its default value, FALSE.

**Default value**

FALSE

**Valid Values**

FALSE

**SQLOnConnect****Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

**Description**

The SQLOnConnect property defines a complete SQL statement that Campaign runs immediately after each database connection.

The SQL statement generated by this property is automatically passed to your database without checking its syntax. If you use this property, make sure that it is a legal expression. The string may be enclosed in quotation marks, but this is not required.

This property is undefined by default.

Tokens available to SQLOnConnect are described below.

| Token          | Description                                                                                                             |
|----------------|-------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>       | This token is replaced with the IBM EMM user name associated with the flowchart for which temp tables were created.     |
| <CAMPAIGNCODE> | This token is replaced with the code for the campaign associated with the flowchart for which temp tables were created. |
| <CAMPAIGNNAME> | This token is replaced with the name of the campaign associated with the flowchart for which temp tables were created.  |

| Token           | Description                                                                                             |
|-----------------|---------------------------------------------------------------------------------------------------------|
| <DBUSER>        | This token is replaced with the database user name for the database where the temp tables were created. |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the temp table creation.          |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                   |

#### Default value

No default value defined.

#### StringEncoding

##### Configuration category

Campaign|partitions|partition[n]|dataSources|dataSourcename

##### Description

The StringEncoding property specifies the character encoding of the database. When Campaign retrieves data from the database, the data is transcoded from the encoding specified to the internal encoding of Campaign (UTF-8). When Campaign sends a query to the database, character data is transcoded from the internal encoding of Campaign (UTF-8) to the encoding specified in the StringEncoding property.

The value of this property must match the encoding used on the database client.

Do not leave this value blank although it is undefined by default.

If you use ASCII data, set this value to UTF-8.

If your database client encoding is UTF-8, the preferred setting for this value is WIDEUTF-8. The WIDE-UTF-8 setting works only if your database client is set to UTF-8.

If you use the partitions > partition[n] > dataSources > data\_source\_name > ODBCUnicode property, set the StringEncoding property to either UTF-8 or WIDEUTF-8. Otherwise, the ODBCUnicode property value is ignored.

For a list of supported encodings, see *Character encodings in Campaign* in the *Campaign Administrator's Guide*.

**Important:** See the following sections for important exceptions and additional considerations.

#### Default value

No default value defined.

#### Database-specific considerations

This section describes how to set the correct values for DB2, SQL Server, or Teradata databases.

##### DB2

Identify the DB2 database code page and code set. For localized environments, the DB2 database must have the following configuration:

- Database code set = UTF-8
- Database code page = 1208

Set the StringEncoding property values in Campaign to the DB2 database code set value.

Set the DB2CODEPAGE DB2 environment variable to the DB2 database code page value:

- On Windows: Add the following line to the Campaign Listener startup script (<CAMPAIGN\_HOME>\bin\cmpServer.bat):

```
db2set DB2CODEPAGE=1208
```

- On UNIX: After DB2 is started, the system administrator must type the following command from the DB2 instance user:

```
$ db2set DB2CODEPAGE=1208
```

Then start the Campaign listener by running this command:

```
./rc.unica_ac start
```

This setting affects all DB2 data sources and can affect other running programs.

### SQL Server

For SQL Server, use a code page instead of an iconv encoding. To determine the correct the value for the StringEncoding property with a SQL Server database, look up the code page that corresponds to the regional settings of the server's operating system.

For example, to use code page 932 (Japanese Shift-JIS):

```
StringEncoding=CP932
```

### Teradata

For Teradata, you must override some default behavior. Teradata supports per-column character encoding, while Campaign supports only per-data source encoding. UTF-8 cannot be used with Campaign due to a bug in the Teradata ODBC driver. Teradata sets a default character encoding for each login. You can override this using a parameter in the ODBC data source configuration on Windows or in the odbc.ini on UNIX platforms as follows:

```
CharacterSet=UTF8
```

The default encoding for a Teradata table is LATIN. Teradata has very few built-in encodings, but it supports user-defined encodings.

The default value of the StringEncoding property is ASCII.

**Important:** For many situations involving a UTF-8 database, you should use WIDEUTF-8 pseudo-encoding, described in the WIDEUTF-8 section.

### WIDEUTF-8

Campaign is normally responsible for transcoding between its internal encoding, UTF-8, and the encoding of the database. When the database is encoded in UTF-8, the value UTF-8 can be specified for StringEncoding (except for SQLServer), and no transcoding will be needed. Traditionally, these have been the only viable models for Campaign to access non-English data within a database.

In the 7.0 version of Campaign, a new database encoding called WIDEUTF-8 was introduced as a value for the StringEncoding property. By using this encoding, Campaign still uses UTF-8 to communicate with the database client, but allows the client to perform the task of transcoding between UTF-8 and the encoding of the actual database. This enhanced version of UTF-8 is needed to alter the widths of table column mappings so that they will be wide enough for transcoded text.

**Note:** The WIDEUTF-8 pseudo-encoding may be used only in the database configuration. It should not be used for any other purpose.

**Note:** Oracle does not support transcoding through the client.

### SuffixOnAllOtherSQL

#### Configuration category

```
Campaign|partitions|partition[n]|dataSources|dataSourcename
```

## Description

The SuffixOnAllOtherSQL property specifies a string that is automatically appended to every SQL expression, generated by Campaign, which are not covered by the SuffixOnInsertSQL, SuffixOnSelectSQL, SuffixOnTempTableCreation, SuffixOnUserTableCreation, or SuffixOnUserBaseTableCreation properties.

This property applies only to SQL generated by Campaign, and does not apply to SQL in raw SQL expressions used in the Select process.

SuffixOnAllOtherSQL is used for the following expression types, when generated by Campaign:

```
TRUNCATE TABLE table
DROP TABLE table
DELETE FROM table [WHERE ...]
UPDATE table SET ...
```

This property is automatically added to the SQL expression without checking its syntax. If you use this parameter, make sure that it is a legal expression. The string may be enclosed in quotation marks, but this is not required.

This property is undefined by default.

Tokens available to **SuffixOnAllOtherSQL** are described below.

| Token           | Description                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which temp tables were created.     |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which temp tables were created. |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which temp tables were created.  |
| <DBUSER>        | This token is replaced with the database user name for the database where the temp tables were created.                 |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the temp table creation.                          |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                                   |

## Default value

No default value defined.

## SuffixOnCreateDateField

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

## Description

The SuffixOnCreateDateField property specifies a string that Campaign automatically appends to any DATE fields in the CREATE TABLE SQL statement.

For example, you might set this property as follows:

```
SuffixOnCreateDateField = FORMAT 'YYYY-MM-DD'
```

If this property is undefined (the default), the CREATE TABLE command is unchanged.

**Note:** See the table in the description of the `DateFormat` property.

#### Default value

No default value defined.

### SuffixOnInsertSQL

#### Configuration category

`Campaign|partitions|partition[n]|dataSources|dataSourcename`

#### Description

The `SuffixOnInsertSQL` property specifies a string that is automatically appended to all `INSERT` SQL expressions generated by Campaign. This property applies only to SQL generated by Campaign, and does not apply to SQL in raw SQL expressions used in the Select process.

`SuffixOnInsertSQL` is used for the following expression type, when generated by Campaign:  
`INSERT INTO table ...`

This property is automatically added to the SQL expression without checking its syntax. If you use this property, make sure that it is a legal expression. The string may be enclosed in quotation marks, but this is not required.

This property is undefined by default.

Tokens available to `SuffixOnInsertSQL` are described below.

| Token                              | Description                                                                                                             |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <code>&lt;AMUSER&gt;</code>        | This token is replaced with the IBM EMM user name associated with the flowchart for which temp tables were created.     |
| <code>&lt;CAMPAIGNCODE&gt;</code>  | This token is replaced with the code for the campaign associated with the flowchart for which temp tables were created. |
| <code>&lt;CAMPAIGNNAME&gt;</code>  | This token is replaced with the name of the campaign associated with the flowchart for which temp tables were created.  |
| <code>&lt;DBUSER&gt;</code>        | This token is replaced with the database user name for the database where the temp tables were created.                 |
| <code>&lt;FLOWCHARTNAME&gt;</code> | This token is replaced with the name of the flowchart associated with the temp table creation.                          |
| <code>&lt;USER&gt;</code>          | This token is replaced with the Campaign user name of the user running the flowchart.                                   |

#### Default value

No default value defined.

### SuffixOnSelectSQL

#### Configuration category

`Campaign|partitions|partition[n]|dataSources|dataSourcename`

#### Description

The `SuffixOnSelectSQL` property specifies a string that is automatically appended to all `SELECT` SQL expressions generated by Campaign. This property applies only to SQL generated by Campaign, and does not apply to SQL in "raw SQL" expressions used in the Select process.

This property is automatically added to the SQL expression without checking its syntax. If you use this property, make sure that it is a legal expression. The string may be enclosed in quotation marks, but this is not required.

This property is undefined by default.

Tokens available to **SuffixOnSelectSQL** are described below.

| Token           | Description                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which temp tables were created.     |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which temp tables were created. |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which temp tables were created.  |
| <DBUSER>        | This token is replaced with the database user name for the database where the temp tables were created.                 |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the temp table creation.                          |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                                   |

#### Default value

No default value defined.

### SuffixOnTempTableCreation

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Use the SuffixOnTempTableCreation property to specify a string that is automatically appended to the SQL expression generated by Campaign when a temp table is created. This property applies only to SQL generated by Campaign, and does not apply to SQL in "raw SQL" expressions used in the Select process. To use this property, the AllowTempTables property must be set to TRUE.

You may want to use tokens to substitute the table name and the column name(s) (<TABLENAME> and <KEYCOLUMNS>) in this SQL statement, since these are generated dynamically during the execution of the campaign.

This property is automatically added to the SQL expression without checking its syntax. If you use this property, make sure that it is a legal expression. The string may be enclosed in quotation marks, but this is not required.

This property is undefined by default.

**Note:** For Oracle databases, the configuration parameter is appended to the temp table creation SQL expression after the table name.

Tokens available to SuffixOnTempTableCreation are described below.

| Token           | Description                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which temp tables were created.     |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which temp tables were created. |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which temp tables were created.  |
| <DBUSER>        | This token is replaced with the database user name for the database where the temp tables were created.                 |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the temp table creation.                          |
| <KEYCOLUMNS>    | This token is replaced with the temp table column name(s).                                                              |
| <TABLENAME>     | This token is replaced with the temp table name.                                                                        |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                                   |

#### Default value

No default value defined.

### SuffixOnSegmentTableCreation

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Specifies a string that is automatically appended to the SQL expression generated by Campaign when a Segment temp table is created.

Tokens available to **SuffixOnSegmentTableCreation** are described below.

| Token           | Description                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which the Segment temp table was created.     |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which the Segment temp table was created. |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which the Segment temp table was created.  |
| <DBUSER>        | This token is replaced with the database user name for the database where the Segment temp table was created.                     |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the Segment temp table creation.                            |
| <KEYCOLUMNS>    | This token is replaced with the Segment temp table column name(s).                                                                |
| <TABLENAME>     | This token is replaced with the Segment temp table name.                                                                          |

| Token  | Description                                                                           |
|--------|---------------------------------------------------------------------------------------|
| <USER> | This token is replaced with the Campaign user name of the user running the flowchart. |

#### Default value

Not defined

#### Valid Values

Valid SQL

### SuffixOnSnapshotTableCreation

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Use the SuffixOnSnapshotTableCreation property to specify a string that is automatically appended to the SQL expression generated by Campaign when a Snapshot table is created.

Tokens available to **SuffixOnSnapshotTableCreation** are described below.

| Token           | Description                                                                                                                   |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which the Snapshot table was created.     |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which the Snapshot table was created. |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which the Snapshot table was created.  |
| <DBUSER>        | This token is replaced with the database user name for the database where the Snapshot table was created.                     |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the Snapshot table creation.                            |
| <KEYCOLUMNS>    | This token is replaced with the Snapshot table column name(s).                                                                |
| <TABLENAME>     | This token is replaced with the Snapshot table name.                                                                          |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                                         |

#### Default value

Not defined

#### Valid Values

Valid SQL

### SuffixOnExtractTableCreation

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Use the **SuffixOnExtractTableCreation** property to specify a string that is automatically appended to the SQL expression generated by Campaign when an Extract table is created.

Tokens available to **SuffixOnExtractTableCreation** are described below.

| Token           | Description                                                                                                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which the Extract table was created.     |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which the Extract table was created. |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which the Extract table was created.  |
| <DBUSER>        | This token is replaced with the database user name for the database where the Extract table was created.                     |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the Extract table creation.                            |
| <KEYCOLUMNS>    | This token is replaced with the Extract table column name(s).                                                                |
| <TABLENAME>     | This token is replaced with the Extract table name.                                                                          |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                                        |

#### Default value

Not defined

#### Valid Values

Valid SQL

### SuffixOnUserBaseTableCreation

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Use the **SuffixOnUserBaseTableCreation** property to specify a string that is automatically appended to the SQL expression that Campaign generates when a user creates a Base table (for example, in an Extract process). This property applies only to SQL generated by Campaign, and does not apply to SQL in "raw SQL" expressions used in the Select process.

You may want to use tokens to substitute the table name and the column name(s) (<TABLENAME> and <KEYCOLUMNS>) in this SQL statement, since these are generated dynamically during the execution of the campaign.

This property is automatically added to the SQL expression without checking its syntax. If you use this property, make sure that it is a legal expression. The string may be enclosed in quotation marks, but this is not required.

This property is undefined by default.

Tokens available to **SuffixOnUserBaseTableCreation** are described below.

| Token           | Description                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which temp tables were created.     |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which temp tables were created. |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which temp tables were created.  |
| <DBUSER>        | This token is replaced with the database user name for the database where the temp tables were created.                 |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the temp table creation.                          |
| <KEYCOLUMNS>    | This token is replaced with the temp table column name(s).                                                              |
| <TABLENAME>     | This token is replaced with the temp table name.                                                                        |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                                   |

#### Default value

No default value defined.

#### SuffixOnUserTableCreation

##### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

##### Description

Use the SuffixOnUserTableCreation property to specify a string that is automatically appended to the SQL expression that Campaign generates when a user creates a General table (for example, in a Snapshot process). This property applies only to SQL generated by Campaign, and does not apply to SQL in "raw SQL" expressions used in the Select process.

This property is automatically added to the SQL expression without checking its syntax. If you use this property, make sure that it is a legal expression. The string may be enclosed in quotation marks, but this is not required.

This property is undefined by default.

Tokens available to **SuffixOnUserTableCreation** are described below.

| Token          | Description                                                                                                             |
|----------------|-------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>       | This token is replaced with the IBM EMM user name associated with the flowchart for which temp tables were created.     |
| <CAMPAIGNCODE> | This token is replaced with the code for the campaign associated with the flowchart for which temp tables were created. |
| <CAMPAIGNNAME> | This token is replaced with the name of the campaign associated with the flowchart for which temp tables were created.  |
| <DBUSER>       | This token is replaced with the database user name for the database where the temp tables were created.                 |

| Token           | Description                                                                                    |
|-----------------|------------------------------------------------------------------------------------------------|
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the temp table creation. |
| <TABLENAME>     | This token is replaced with the temp table name.                                               |

#### Default value

No default value defined.

### SystemTableSchema

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Specifies the schema used for Campaign system tables.

The default value is blank. This parameter is only relevant for the UA\_SYSTEM\_TABLES data source.

Leave this value blank unless the UA\_SYSTEM\_TABLES data source contains multiple schemas (for example, an Oracle database used by multiple groups). (In this context, "schema" indicates the initial portion of a "qualified" table name of the form X.Y (for example, dbo.UA\_Folder). In this form, X is the schema and Y is the unqualified table name. This terminology for this syntax differs among the different database systems supported by Campaign.)

If multiple schemas exist in the system tables database, then set this value to the name of the schema in which the Campaign system tables were created.

#### Default value

No default value defined.

### TempTablePostExecutionSQL

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Use this property to specify a complete SQL statement that IBM Campaign runs immediately after the creation of a temporary table in a user data source or in the system tables database. For example, to improve performance, you can create an index on a temporary table immediately after its creation (see examples below). To enable the creation of temporary tables in a data source, the AllowTempTables property must be set to TRUE.

You can use tokens to substitute the table name (<TABLENAME>) and column names (<KEYCOLUMNS>) in the SQL statement, because the values are generated dynamically when the campaign runs.

This property is automatically added to the SQL expression without checking its syntax. If you use this property, make sure that it is a legal expression. You can enclose the string in quotation marks, but this is not required.

This property treats semicolons as delimiters to run multiple SQL statements. If your SQL statement contains semicolons and you want it to run as one statement, use a backslash as an escape character before the semicolons.

**Note:** If you are using stored procedures with this property, be sure that you use the correct syntax for your database.

Tokens available to TempTablePostExecutionSQL are described below.

| Token           | Description                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which temp tables were created.     |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which temp tables were created. |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which temp tables were created.  |
| <DBUSER>        | This token is replaced with the database user name for the database where the temp tables were created.                 |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the temp table creation.                          |
| <KEYCOLUMNS>    | This token is replaced with the temp table column name(s).                                                              |
| <TABLENAME>     | This token is replaced with the temp table name.                                                                        |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                                   |

### Default value

No default value defined.

### Examples

The following value creates an index on the temp table just after its creation, to improve the data retrieval process: `CREATE INDEX IND_<TABLENAME> ON <TABLENAME> (<KEYCOLUMNS>)`

The following example for Oracle calls a stored procedure and uses backslashes to escape the semicolon: `begin dbms_stats.collect_table_stats()\; end\;`

## TableListSQL

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### Description

Use the TableListSQL property to specify the SQL query to use to include synonyms in the list of tables available to map.

The default value is blank. This property is required if your data source is SQL Server and you want to be able to map synonyms in the returned table schema. This property is optional if you want to use a specific SQL query with other data sources in place of, or in addition to, the table schema information retrieved using the standard methods (such as an ODBC call or native connection).

**Note:** To ensure that Campaign works with SQL Server synonyms, you must set the UseSQLToRetrieveSchema property to TRUE in addition to setting this property as described here.

If you set this property with a valid SQL query, IBM Campaign issues the SQL query to retrieve the list of tables for mapping. If the query returns one column, it is treated as a column of names; if the query returns two columns, the first column is assumed to be a column of owner names, and the second column is considered to be a column of table names.

If the SQL query does not begin with an asterisk (\*), IBM Campaign merges this list with the list of tables that are normally retrieved (such as through ODBC calls or native connections).

If the SQL query begins with an asterisk (\*), the list returned by the SQL *replaces* the normal list, rather than being merged with it.

#### Default value

None

#### Valid Values

A valid SQL query

#### Example

If the data source is SQL Server, under normal circumstances the ODBC API call that IBM Campaign uses returns a list of tables and views, but no synonyms. To include the list of synonyms as well, set TableListSQL similar to the following example:

```
select B.name AS oName, A.name AS tName
from sys.synonyms A LEFT OUTER JOIN sys.schemas B
on A.schema_id = B.schema_id ORDER BY 1, 2
```

To retrieve the list of tables, views, and synonyms, avoiding the ODBC API completely, set TableListSQL similar to the following example:

```
*select B.name AS oName, A.name AS tName from
(select name, schema_id from sys.synonyms UNION
select name, schema_id from sys.tables UNION select name,
schema_id from sys.views) A LEFT OUTER JOIN sys.schemas B on
A.schema_id = B.schema_id ORDER BY 1, 2
```

If the data source is Oracle, you can use a query similar to the following to retrieve the list of tables, views, and synonyms in place of the data retrieved using the native connection method that looks at the ALL\_OBJECTS view:

```
*select OWNER, TABLE_NAME from (select OWNER, TABLE_NAME
from ALL_TABLES UNION select OWNER, SYNONYM_NAME AS TABLE_NAME
FROM ALL_SYNONYMS UNION select OWNER,
VIEW_NAME AS TABLE_NAME from ALL_VIEWS) A ORDER BY 1, 2
```

### UOSQLOnConnect

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*dataSourcename*

#### Description

The SQLOnConnect property defines a complete SQL statement that Campaign runs immediately after each database connection. The UOSQLOnConnect property is similar to this, but specifically applicable to Contact Optimization.

The SQL statement generated by this property is automatically passed to your database without checking its syntax. If you use this property, make sure that it is a legal expression. The string may be enclosed in quotation marks, but this is not required.

This property is undefined by default.

Tokens available to **UOSQLOnConnect** are described below.

| Token          | Description                                                                                                             |
|----------------|-------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>       | This token is replaced with the IBM EMM user name associated with the flowchart for which temp tables were created.     |
| <CAMPAIGNCODE> | This token is replaced with the code for the campaign associated with the flowchart for which temp tables were created. |

| Token           | Description                                                                                                            |
|-----------------|------------------------------------------------------------------------------------------------------------------------|
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which temp tables were created. |
| <DBUSER>        | This token is replaced with the database user name for the database where the temp tables were created.                |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the temp table creation.                         |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                                  |

#### Default value

No default value defined.

### UseSQLToRetrieveSchema

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Uses a SQL query, rather than an ODBC or native API call, to retrieve the schema to use as the table schema for this data source.

The default value for this property is FALSE, indicating that Campaign should use its standard method (ODBC or native connection, for example) to retrieve the schema. Setting this property to TRUE causes Campaign to prepare a SQL query similar to `select * from <table>` to retrieve the table schema.

This can provide advantages that are specific to each data source. For example, some data sources (Netezza, SQL Server) do not properly report SQL synonyms (alternative names for database objects, defined using the `create synonym` syntax) through the default ODBC or native connections. By setting this property to TRUE, SQL synonyms are retrieved for data mapping within Campaign.

The following list describes the behavior of this setting for a number of data sources:

- For Netezza, you must set this property to TRUE to allow support for synonyms. Setting this property to TRUE tells Campaign to prepare a SQL query to retrieve the table schema. No other settings or values are needed to support synonyms in Netezza data sources.
- For SQL Server, to allow support for synonyms you must set this property to TRUE **and** enter valid SQL in the `TableListSQL` property for this data source. See the description for the `TableListSQL` property for more details.
- For Oracle data sources, setting this property to TRUE tells Campaign to prepare the SQL query to retrieve the table schema. The result set identifies NUMBER fields (no precision/scale specified, which may cause issues in Campaign) as NUMBER(38), which avoids those possible issues.
- For other data sources, you can optionally set this property to TRUE to use the default SQL select query described above, or to specify valid SQL in the `TableListSQL` property to use instead of, or in addition to, the ODBC API or native connection that is used by default. See the description for the `TableListSQL` property for more details.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

## Example

To allow Campaign to work with Netezza or SQL Server synonyms:  
UseSQLToRetrieveSchema=TRUE

## UserBaseTablePostExecutionSQL

### Configuration category

Campaign|partitions|partition[n]|dataSources|*dataSourcename*

### Description

This property is invoked when a process box is configured to write to a **New Mapped Table > Base Record Table > Create New Table in Selected Database**. This property is invoked only when the table is created (during the creation and mapping process). This property is not invoked during process box runtime.

This property is automatically added to the SQL expression without checking its syntax. If you use this property, make sure that it is a legal expression. You can enclose the string in quotation marks, but this is not required.

This property treats semicolons as delimiters to run multiple SQL statements. If your SQL statement contains semicolons and you want it to run as one statement, use a backslash as an escape character before the semicolons.

**Note:** If you are using stored procedures with this property, be sure to use the correct syntax for your database. The following example for Oracle calls a stored procedure and uses backslashes to escape the semicolon: begin dbms\_stats.collect\_table\_stats()\;\; end\;\;

You can use tokens to substitute the <TABLENAME> in this SQL statement because the name is generated dynamically when the campaign runs. For available tokens, see [UserTablePostExecutionSQL](#).

## UserTablePostExecutionSQL

### Configuration category

Campaign|partitions|partition[n]|dataSources|*dataSourcename*

### Description

Use this property to specify a complete SQL statement that IBM Campaign runs immediately after the creation of a user table in a user data source or in the system tables database. This property is invoked when a process box writes to one of the following tables:

- **New Mapped Table > General Table > Create New Table in Selected Datasource:** The property is invoked during the creation/mapping process; not during Snapshot runtime.
- **New Mapped Table > Dimension Table > Create New Table in Selected Database:** The property is invoked during the creation/mapping process; not during Snapshot runtime.
- **Database Table:** The property is invoked during process box runtime.

You may want to use tokens to substitute the table name and the column name(s) (<TABLENAME> and <KEYCOLUMNS>) in this SQL statement, since these are generated dynamically during the execution of the campaign.

This property is automatically added to the SQL expression without checking its syntax. If you use this property, make sure that it is a legal expression. The string may be enclosed in quotation marks, but this is not required.

This property treats semicolons as delimiters to run multiple SQL statements. If your SQL statement contains semicolons and you want it to run as one statement, use a backslash as an escape character before the semicolons.

**Note:** If you are using stored procedures with this property, be sure to use the correct syntax for your database. The following example for Oracle calls a stored procedure and uses backslashes to escape the semicolon: begin dbms\_stats.collect\_table\_stats()\; end\;

Tokens available to **UserTablePostExecutionSQL** are described below.

| Token           | Description                                                                                                                 |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which the user tables were created.     |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which the user tables were created. |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which the user tables were created.  |
| <DBUSER>        | This token is replaced with the database user name for the database where the user tables were created.                     |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the user table creation.                              |
| <KEYCOLUMNS>    | This token is replaced with the user table column name(s).                                                                  |
| <TABLENAME>     | This token is replaced with the user table name.                                                                            |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                                       |

#### Default value

No default value defined.

### UseTempTablePool

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

When **UseTempTablePool** is set to FALSE, temp tables are dropped and re-created every time a flowchart is run. When the property is set to TRUE, temp tables are not dropped from the database. Temp tables are truncated and reused from the pool of tables maintained by Campaign. The temp table pool is most effective in environments where you rerun flowcharts many times, such as during a design and test phase.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### SegmentTablePostExecutionSQL

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

Use the **SegmentTablePostExecutionSQL** property to specify a complete SQL statement that Campaign runs after a Segment temp table has been created and populated.

Tokens available to **SegmentTablePostExecutionSQL** are described below.

| Token           | Description                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which the Segment temp table was created.     |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which the Segment temp table was created. |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which the Segment temp table was created.  |
| <DBUSER>        | This token is replaced with the database user name for the database where the Segment temp table was created.                     |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the Segment temp table creation.                            |
| <KEYCOLUMNS>    | This token is replaced with the Segment temp table column name(s).                                                                |
| <TABLENAME>     | This token is replaced with the Segment temp table name.                                                                          |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                                             |

#### Default value

Not defined

#### Valid Values

A valid SQL statement

### SnapshotTablePostExecutionSQL

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*dataSourcename*

#### Description

Use the **SnapshotTablePostExecutionSQL** property to specify one or more complete SQL statements to run immediately after a Snapshot table has been created and populated. This property is invoked only when a Snapshot process box writes out to an extract table.

Tokens available to **SnapshotTablePostExecutionSQL** are described below.

| Token          | Description                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>       | This token is replaced with the IBM EMM user name associated with the flowchart for which the Snapshot table was created.     |
| <CAMPAIGNCODE> | This token is replaced with the code for the campaign associated with the flowchart for which the Snapshot table was created. |
| <CAMPAIGNNAME> | This token is replaced with the name of the campaign associated with the flowchart for which the Snapshot table was created.  |
| <DBUSER>       | This token is replaced with the database user name for the database where the Snapshot table was created.                     |

| Token           | Description                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------|
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the Snapshot table creation. |
| <KEYCOLUMNS>    | This token is replaced with the Snapshot table column name(s).                                     |
| <TABLENAME>     | This token is replaced with the Snapshot table name.                                               |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.              |

#### Default value

Not defined

#### Valid Values

A valid SQL statement

### TempTablePrefix

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

This property specifies a string that is automatically prepended to the names of all temporary tables created by Campaign. Use this property to help identify and manage temp tables. You also can use this property to cause temp tables to be created in a particular location.

For example, if the user token corresponds to a schema, you can set

TempTablePrefix="*<USER>*"

and all temp tables will be created in the schema of whatever user is connected to the data source.

If two or more data sources point to the same database, errors and incorrect search results can occur during flowchart runs due to usage of the same temporary tables by different process boxes and flowcharts. This situation can also occur with Extract process tables and Strategic Segment tables. To avoid this situation, use TempTablePrefix (or ExtractTablePrefix for Extract tables) to define different schemas for each data source. This approach ensures that the initial part of the name is different, so the table names will always be different.

For example, give each data source a unique TempTablePrefix such as UAC\_DS1 and UAC\_DS2 to distinguish between temp tables for each data source. The same concept applies if you are sharing data source schemas. For example, the following prefixes allow the temp tables to be unique for both data sources that write temp tables to the same database:

DS1 TempTablePreFix: schemaA.UAC\_DS1

DS2 TempTablePreFix: schemaA.UAC\_DS2

The following table describes the tokens that are available to **TempTablePrefix**.

**Note:** You must make sure that the final temp table name after resolving tokens does not exceed any database-specific name length restrictions.

**Note:** In tokens used for TempTablePrefix, any characters that are not valid for database table names will be stripped. After tokens are resolved, the resulting temp table prefixes must start with an alphabetic character, and must contain only alphanumeric characters or underscore characters. Illegal characters will be removed silently. If any resulting temp table prefix does not begin with an alphabetic character, Campaign prepends the letter "U" to the prefix.

| Token           | Description                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|
| <AMUSER>        | This token is replaced with the IBM EMM user name associated with the flowchart for which temp tables were created.     |
| <CAMPAIGNCODE>  | This token is replaced with the code for the campaign associated with the flowchart for which temp tables were created. |
| <CAMPAIGNNAME>  | This token is replaced with the name of the campaign associated with the flowchart for which temp tables were created.  |
| <DBUSER>        | This token is replaced with the database user name for the database where the temp tables were created.                 |
| <FLOWCHARTNAME> | This token is replaced with the name of the flowchart associated with the temp table creation.                          |
| <USER>          | This token is replaced with the Campaign user name of the user running the flowchart.                                   |

#### Default value

UAC

### TempTablePreTruncateExecutionSQL

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

**Note:** This property is supported only for Teradata data sources. For all other supported databases, this property should not be set.

Use this property to specify a SQL query to run before a temp table is truncated. The query that you specify can be used to negate the effect of a SQL statement specified in the **TempTablePostExecutionSQL** property.

For example, with the **TempTablePostExecutionSQL** property, you could specify the following SQL statement to create an index:

```
CREATE INDEX <TABLENAME>Idx_1 (<KEYCOLUMNS>) ON <TABLENAME>
```

Then, specify the following query in the **TempTablePreTruncateExecutionSQL** property to drop the index:

```
DROP INDEX <TABLENAME>Idx_1 ON <TABLENAME>
```

#### Default value

Not defined

#### Valid Values

A valid SQL query

### TempTablePreTruncateRunScript

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

**Note:** This property is supported only for Teradata data sources. For all other supported databases, this property should not be set.

Use this property to specify a script or executable to run before a temp table is truncated. The script that you specify can be used to negate the effect of a SQL statement specified in the **PostTempTableCreateRunScript** property.

For example, with the **PostTempTableCreateRunScript** property, you could specify a script that includes the following SQL statement to create an index:

```
CREATE INDEX <TABLENAME>Idx_1 (<KEYCOLUMNS>) ON <TABLENAME>
```

Then, specify another script with the following statement in the **TempTablePreTruncateRunScript** property to drop the index:

```
DROP INDEX <TABLENAME>Idx_1 ON <TABLENAME>
```

#### Default value

Not defined

#### Valid Values

File name of a shell script or executable

### TeradataDeleteBeforeDrop

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

This property applies only to Teradata data sources. It specifies whether records are deleted before a table is dropped.

Set the value to TRUE to delete all records from a table before dropping the table.

**Note:** If IBM Campaign is unable to delete the records for any reason, it will not drop the table.

Set the value to FALSE to drop a table without first deleting all records.

#### Default value

TRUE

### TruncateSQL

#### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

#### Description

This property is available for use with DB2 data sources, and allows you to specify alternate SQL for table truncation. This property applies only when **DeleteAsTruncate** is TRUE. When **DeleteAsTruncate** is TRUE, any custom SQL in this property is used to truncate a table. When this property is not set, IBM Campaign uses the TRUNCATE TABLE <TABLENAME> syntax.

This property is undefined by default.

Tokens available to **TruncateSQL** are described below.

| Token       | Description                                                                          |
|-------------|--------------------------------------------------------------------------------------|
| <TABLENAME> | This token is replaced with the database table name that IBM Campaign is truncating. |

#### Default value

No default value defined.

## Type

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### Description

This property specifies the database type of this data source.

### Default value

The default value depends on the database template used to create the data source configuration.

### Valid Values

Valid values for system tables are:

- SQLServer
- DB2
- DB2ODBC
- ORACLE
- ORACLE8
- ORACLE9

Valid values for customer tables also include:

- TERADATA
- NETEZZA

## UseExceptForMerge

### Configuration category

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### Description

When IBM Campaign performs exclusions in the Merge process or in the Segment process, by default it uses NOT EXISTS syntax, as:

```
SELECT IncludeTable.ID FROM IncludeTable WHERE NOT EXISTS
(SELECT * FROM ExcludeTable WHERE IncludeTable.ID = ExcludeTable.ID)
```

If **UseExceptForMerge** is TRUE and you cannot use NOT IN (because **UseNotInForMerge** is disabled or because the audience level consists of multiple fields and the data source is not Oracle), then the syntax is altered as follows:

### Oracle

```
SELECT IncludeTable.ID FROM IncludeTable
MINUS (SELECT ExcludeTable.ID FROM ExcludeTable)
```

### Others

```
SELECT IncludeTable.ID FROM IncludeTable
EXCEPT (SELECT ExcludeTable.ID FROM ExcludeTable)
```

### Default value

FALSE

### Valid Values

TRUE | FALSE

## **UseMergeForTrack**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

This property implements SQL MERGE syntax to improve the performance of the Track process in flowcharts. This property can be set to TRUE for DB2, Oracle, SQL Server 2008, and Teradata 12. It can also be used with other databases that support the SQL MERGE statement.

### **Default value**

TRUE (DB2 and Oracle) | FALSE (all others)

### **Valid Values**

TRUE | FALSE

## **UseNonANSIJoin**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

The UseNonANSIJoin property specifies whether this data source uses non-ANSI join syntax. If the data source type is set to Oracle7 or Oracle8, and the value of UseNonANSIJoin is set to TRUE, the data source uses non-ANSI join syntax appropriate for Oracle.

### **Default value**

FALSE

### **Valid Values**

TRUE | FALSE

## **UseNotInForMerge**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

### **Description**

When IBM Campaign performs exclusions in the Merge process or in the Segment process, by default it uses NOT EXISTS syntax, as:

```
SELECT IncludeTable.ID FROM IncludeTable WHERE NOT EXISTS (SELECT *
FROM ExcludeTable WHERE IncludeTable.ID = ExcludeTable.ID)
```

If UseNotInForMerge is enabled and either (1) the audience level is composed of a single ID field, or (2) the data source is Oracle, then the syntax is altered as follows:

```
SELECT IncludeTable.ID FROM IncludeTable WHERE IncludeTable.ID NOT IN
(SELECT ExcludeTable.ID FROM ExcludeTable)
```

### **Default value**

FALSE

### **Valid Values**

TRUE | FALSE

## **UseSQLToProfile**

### **Configuration category**

Campaign|partitions|partition[n]|dataSources|*datasourcename*

## Description

This property allows you to configure IBM Campaign to submit the SQL query GROUP BY to the database to compute profiles (using SELECT *field*, count(\*) FROM *table* GROUP BY *field*), rather than fetching records.

- A value of FALSE (the default) causes IBM Campaign to profile a field by retrieving the field value for all records in the table and to track the count of each distinct value.
- A value of TRUE causes IBM Campaign to profile a field by issuing a query similar to the following:

```
SELECT field, COUNT(*) FROM table GROUP BY field
```

which pushes the burden to the database.

## Default value

FALSE

## Valid Values

TRUE | FALSE

## Campaign | partitions | partition[n] | systemTableMapping

Properties in the systemTableMapping category are populated automatically if you remap any system tables or map Contact or Response history tables. You should not edit properties in this category.

## Campaign | partitions | partition[n] | server | systemCodes

Properties in this category specify, for Campaign, whether variable length codes are allowed, the format and generator of the campaign and cell codes, whether offer codes are displayed, and the offer code delimiter.

## offerCodeDelimiter

### Description

The offerCodeDelimiter property is used internally to concatenate multiple code parts (for example, to output the OfferCode field in Campaign Generated Fields) and for incoming offer codes in the Campaign Response process, to split the offer code into multiple parts. The value must be only a single character.

Note that in this version of Campaign, the NumberOfOfferCodesToUse parameter no longer exists. This value now comes from the offer template (every offer template can have a different number of offer codes).

### Default value

-

## allowVariableLengthCodes

### Description

The allowVariableLengthCodes property specifies whether variable length codes are allowed in Campaign.

If the value is TRUE, and if the trailing part of the code format is x, the length of the code can vary. For example, if the code format is nnnnxxxx, then the code can be from 4 to 8 characters long. This applies to campaign, offer, version, tracking, and cell codes.

If the value is FALSE, variable length codes are not allowed.

### Default value

FALSE

**Valid Values**

TRUE | FALSE

**displayOfferCodes****Description**

The `displayOfferCodes` property specifies whether to show offer codes beside their names in the Campaign GUI.

If the value is TRUE, offer codes are displayed.

If the value is FALSE, offer codes are not displayed.

**Default value**

FALSE

**Valid Values**

TRUE | FALSE

**cellCodeFormat****Description**

The `cellCodeFormat` property is used by the campaign code generator to define the format of the cell code that is automatically created by the default cell code generator.

For a list of valid values, see `campCodeFormat`.

**Default value**

Annnnnnnnn

**campCodeFormat****Description**

The `campCodeFormat` property is used by the campaign code generator to define the format of the campaign code that is automatically generated by the default campaign code generator when you create a campaign.

**Default value**

Cnnnnnnnnn

**Valid Values**

The possible values are as follows:

- A-Z or any symbol - treated as a constant
- a - random letters A-Z (upper case only)
- c - random letters A-Z or numbers 0-9
- n - random digit 0-9
- x - any single ASCII character from 0-9 or A-Z. You can edit the generated campaign code and replace the ASCII character that Campaign substituted for the x with any ASCII character, and Campaign will use that character instead.

**cellCodeGenProgFile****Description**

The `cellCodeGenProgFile` property specifies the name of the cell code generator. The properties that control the format of the code generated are set in the `cellCodeFormat` property. See `campCodeGenProgFile` for a list of supported options.

If you write your own cell code generator, replace the default value with the absolute path of your custom program, including the file name and extension, and using forward slashes (/) for UNIX and backslashes (\) for Windows.

#### Default value

uaccampcodegen (the code generator supplied by Campaign)

### **campCodeGenProgFile**

#### Description

The campCodeGenProgFile property specifies the name of the campaign code generator.

The properties that control the format of the code generated are set in the campCodeFormat property.

If you write your own campaign code generator, replace the default value with the absolute path of your custom program, including the file name and extension, and using forward slashes (/) for UNIX and backslashes (\) for Windows.

The default campaign code generator can be called with the following options:

- -y Year (four integers)
- -m Month (one or two integers, cannot exceed value of twelve)
- -d Day (one or two integers, cannot exceed value of 31)
- -n Campaign name (any string, cannot exceed 64 characters)
- -o Campaign owner (any string, cannot exceed 64 characters)
- -u Campaign code (any integer). Allows you to specify the exact campaign ID rather than having the application generate one for you.
- -f Code format if overriding the default. Takes the values specified in campCodeFormat.
- -i Other integer.
- -s Other string.

#### Default value

uaccampcodegen (the code generator supplied by Campaign)

### **Campaign | partitions | partition[n] | server | encoding**

The property in this category specifies the text encoding for values written to files, to support non-English data.

### **stringEncoding**

#### Description

The partition[n] > server> encoding > stringEncoding property how Campaign reads in and writes out flat files. It should match the encoding used for all flat files. If not configured elsewhere, this is the default setting for flat file encoding.

**Note:** WIDEUTF-8 is not supported for this setting.

By default, no value is specified, and outgoing text files are encoded as UTF-8, which is the default encoding for Campaign.

It is a best practice to explicitly set this value to an encoding appropriate for your system, even if the value is UTF-8, the same as the implicit default.

**Note:** If you do not set the value of the `StringEncoding` property for data sources in the `dataSources` category, the value of this `stringEncoding` property is used as the default value. This can cause unnecessary confusion -- you should always explicitly set the `StringEncoding` property in the `dataSources` category.

See the *Campaign Administrator's Guide* for a list of supported encodings.

#### Default value

No default value defined.

### **forceDCTOneBytePerChar**

#### Description

The `forceDCTOneBytePerChar` property specifies whether Campaign should use the original field width for output files, rather than the potentially expanded width reserved to allow sufficient space for transcoding into UTF-8.

A text value may have different lengths, depending on the encoding used to represent it. When the text value comes from a data source whose `stringEncoding` property is neither ASCII nor UTF-8, Campaign reserves three times the field width in order to ensure sufficient space for transcoding into UTF-8. For example, if the `stringEncoding` property is set to `LATIN1`, and the field in the database is defined as `VARCHAR(25)`, Campaign will reserve 75 bytes to hold the transcoded UTF-8 value. Set the `forceDCTOneBytePerChar` property to `TRUE` if you want to use the original field width.

#### Default value

`FALSE`

#### Valid Values

`TRUE` | `FALSE`

### **Campaign | partitions | partition[n] | server | timeout**

The properties in this category specify the number of seconds an Campaign flowchart waits, after the user has disconnected and all runs have completed, before exiting, and the Campaign server process waits for a response from external servers before reporting an error.

### **waitForGracefulDisconnect**

#### Description

The `waitForGracefulDisconnect` property specifies whether the Campaign server process continues to run until the user gracefully disconnects, or exits regardless of whether the user intended to disconnect.

If the value is `yes`, the default, the server process continues to run until it can determine that the user wants it to exit. This option prevents changes from being lost, but can result in server processes accumulating.

If the value is `no`, the server process shuts down and server processes are prevented from accumulating, but users can lose work if a network interruption occurs or if they do not follow the recommended sequence of actions to exit gracefully.

#### Default value

`TRUE`

#### Valid Values

`TRUE` | `FALSE`

## **urlRequestTimeout**

### **Description**

The `urlRequestTimeout` property specifies the number of seconds the Campaign server process waits for a response from external servers. Currently, this applies to requests to IBM EMM servers and eMessage components that operate with Campaign.

If the Campaign server process does not receive a response within this period, a communication timeout error is reported.

### **Default value**

60

## **delayExitTimeout**

### **Description**

The `delayExitTimeout` property specifies the number of seconds an Campaign flowchart waits, after the user has disconnected and all runs have completed, before exiting.

Setting this property to a non-0 value enables subsequent Campaign flowcharts to make use of existing instances rather than starting a new instance.

### **Default value**

10

## **Campaign | partitions | partition[n] | server | collaborate**

This category applies to IBM Distributed Marketing.

### **collaborateInactivityTimeout**

#### **Configuration category**

`Campaign|partitions|partition[n]|server|collaborate`

### **Description**

The `collaborateInactivityTimeout` property specifies the number of seconds the `unica_acsvr` process waits after it finishes servicing a Distributed Marketing request before it exits. This waiting period allows the process to remain available in the typical scenario in which Distributed Marketing makes a series of requests prior to running the flowchart.

The minimum value is 1. Setting this property to 0 causes it to default to 60.

### **Default value**

60

### **logToSeparateFiles**

#### **Configuration category**

`Campaign|partitions|partition[n]|server|collaborate`

### **Description**

This property was introduced in v8.6.0.6. By default and upon upgrade, the value of this parameter is False.

When True, flowchart logs for runs initiated from Distributed Marketing are logged to separate log files. Log files are created under folders with the current date to avoid an excessive number of log files in a single folder. The format of the folder name is `"FlowchartRunLogs_<YYYYMMDD>"`.

The format of the log file name is:

`<CAMP_NAME>_<CAMP_CODE>_<FC_NAME>_<PID>_<LIST_CODE>`

`_<DATE>_<TIMESTAMP>.log`, where PID is the Campaign server process ID that ran the flowchart. LIST\_CODE is the object code of the Distributed Marketing list, ONDC or corporate campaign from which the flowchart was run.

All user variables that are passed to the flowchart run process are logged for troubleshooting purposes.

**Note:** When a flowchart is opened, it initially logs to the traditional flowchart log file. When a flowchart run is initiated from Distributed Marketing, if logToSeparateFiles is True, logging is done in the new directory and file at that time.

#### Default value

False

#### Valid Values

True | False

### Campaign | partitions | partition[n] | server | spss

Properties in this category affect IBM SPSS Modeler Advantage Enterprise Marketing Management Edition integration for the specified partition in IBM Campaign.

### SharedDirectoryPathCampaign

#### Description

The path to the directory that is used to transfer data between IBM Campaign and IBM SPSS Modeler Server, as seen from IBM Campaign.

- IBM Campaign puts input data files to IBM SPSS Modeler Advantage Enterprise Marketing Management Edition in this directory.
- IBM SPSS Modeler Advantage Enterprise Marketing Management Edition puts output data files in this directory to be read and processed by IBM Campaign.

#### Default value

None

#### Valid values

Any valid Windows path (such as Z:\SPSS\_Shared) or a mount directory (for UNIX).

### SharedDirectoryPathSPSS

#### Description

The path to the directory that is used to transfer data between IBM Campaign and IBM SPSS Modeler Server, as seen from IBM SPSS Modeler Server. This is the same shared directory referenced by SharedDirectoryPathCampaign but is the local directory path used by IBM SPSS Modeler Server.

For example, IBM Campaign might be installed on Windows with SharedDirectoryPathCampaign = Z:\SPSS\_Shared, where Z:\SPSS\_Shared is a mapped network drive, while IBM SPSS Modeler Server is installed on UNIX with a mount to that directory defined as SharedDirectoryPathSPSS = /share/CampaignFiles.

#### Default value

None

#### Valid values

Any valid Windows path (such as Z:\SPSS\_Shared) or a mount directory (such as /share/CampaignFiles) for UNIX.

## **C&DS\_URL**

### **Description**

The URL for the IBM SPSS Collaboration and Deployment Services repository.

### **Default value**

`http://localhost:7001/cr-ws/services/ContentRepository`

### **Valid values**

The URL for the IBM SPSS Collaboration and Deployment Services repository.

## **SPSS\_Integration\_Type**

### **Description**

This property determines the type of integration between IBM Campaign and IBM SPSS Modeler Advantage Enterprise Marketing Management Edition.

### **Default value**

None

### **Valid values**

- None: No integration
- SPSS MA Marketing Edition: Full integration of modeling and scoring. This option is only available if IBM SPSS Modeler Advantage Enterprise Marketing Management Edition is installed and configured.
- Scoring only: Scoring, but not modeling, is enabled.

## **Campaign | partitions | partition[n] | server | permissions**

The properties in this category specify the permissions for folders that are created by Campaign and the UNIX group and permissions for files in the profile directory.

### **userFileGroup (UNIX only)**

#### **Description**

This property specifies a group associated with user-generated Campaign files. The group will be set only if the user is a member of the specified group.

This property is undefined by default.

#### **Default value**

No default value defined.

### **createFolderPermissions**

#### **Description**

The `createFolderPermissions` parameter specifies the permissions of directories that are created by Campaign on the Campaign server (`partition[n]` location) by using the Create Folder icon on the Open Data Source File dialog in the table mapping.

#### **Default value**

`755` (owner has read/write/execute access, group and world have execute/read access)

### **catalogFolderPermissions**

#### **Description**

The catalogFolderPermissions property specifies the permissions of directories created by Campaign through the Stored table catalogs > Create folder window.

**Default value**

755 (owner has read/write/execute access, group and world have execute/read access)

**templateFolderPermissions**

**Description**

The templateFolderPermissions property specifies the permissions of template directories created by Campaign through the **Stored templates > Create folder** window.

**Default value**

755 (owner has read/write/execute access, group and world have read/execute access)

**adminFilePermissions (UNIX only)**

**Description**

The adminFilePermissions property specifies a permission bit mask for the files contained in the profile directory.

**Default value**

660 (owner and group have read/write access only)

**userFilePermissions (UNIX only)**

**Description**

The userFilePermissions property specifies a permission bit mask for user generated Campaign files (for example, log files, summary files, exported flat files).

**Default value**

666 (everyone can read and write files created by Campaign in the server)

**adminFileGroup (UNIX only)**

**Description**

The adminFileGroup property specifies a UNIX admin group associated with files contained in the profile directory.

This property is undefined by default.

**Default value**

No default value defined.

**Campaign | partitions | partition[n] | server | flowchartConfig**

Properties in this category specify the behavior of the Campaign Generated Field, whether duplicate cell codes are allowed, and whether the Log to Contact History option defaults to enabled.

**allowDuplicateCellcodes**

**Description**

The allowDuplicateCellcodes property specifies whether the cell codes in the Campaign Snapshot process can have duplicate values.

If the value is FALSE, the Campaign server enforces unique cell codes.

If the value is TRUE, the Campaign server does not enforce unique cell codes.

**Default value**

TRUE

**Valid Values**

TRUE | FALSE

**allowResponseNDaysAfterExpiration****Description**

The `allowResponseNDaysAfterExpiration` property specifies the maximum number of days after all offer expiration dates that responses can tracked. These late responses can be included in performance reports.

**Default value**

90

**agfProcessnameOutput****Description**

The `agfProcessnameOutput` property specifies the output behavior of the Campaign Generated Field (UCGF) in the List, Optimize, Response, and Snapshot processes.

If the value is PREVIOUS, the UCGF contains the process name associated with the incoming cell.

If the value is CURRENT, the UCGF holds the process name of the process in which it is used.

**Default value**

PREVIOUS

**Valid Values**

PREVIOUS | CURRENT

**logToHistoryDefault****Description**

The `logToHistoryDefault` property specifies whether the Log to Contact History and Tracking Tables option in the Log tab of the Campaign contact processes defaults to enabled.

If the value is TRUE, the option is enabled.

If the value is FALSE, the option is disabled in any newly created contact processes.

**Default value**

TRUE

**Valid Values**

TRUE | FALSE

**overrideLogToHistory****Description**

This property controls whether users with the appropriate permissions can change the Log to Contact History Tables setting when they configure a contact or Track process. To make all flowchart production runs always write to contact history, enable `logToHistoryDefault` and disable `overrideLogToHistory`.

**Default value**

TRUE

**Valid Values**

TRUE | FALSE

**defaultBehaviorWhenOutputToFile****Description**

Specifies the behavior for contact processes in Campaign when outputting to a file. This property applies only within the current partition. This default behavior (if set) is only applied for processes when they are newly added to flowcharts; once a process is added to a flowchart, the output behavior can be changed in the process configuration.

**Default value**

Replace All Records

**Valid Values**

- Append to Existing Data
- Create New File
- Replace All Records

**defaultBehaviorWhenOutputToDB****Description**

Specifies the behavior for contact processes in Campaign when outputting to a database table. This property applies only within the current partition. This default behavior (if set) is only applied for processes when they are newly added to flowcharts; once a process is added to a flowchart, the output behavior can be changed in the process configuration.

**Default value**

Replace All Records

**Valid Values**

- Append to Existing Data
- Replace All Records

**replaceEmbeddedNames****Description**

When replaceEmbeddedNames is TRUE, Campaign replaces user variable and UCGF names embedded in query text with actual values, although these names must be separated by a non-alphanumeric character, such as an underscore (for example, ABC\_UserVar.v1 will be substituted but ABCUserVar.v1 will not). Set this property to TRUE for backwards compatibility with Campaign 7.2 and earlier.

When set to FALSE, Campaign replaces only distinct user variable and UCGF names with actual values (in both IBM EMM and raw SQL expressions). Set this property to FALSE for backwards compatibility with Campaign 7.3 and higher.

**Default value**

FALSE

**Valid Values**

TRUE | FALSE

**legacyMultifieldAudience****Description**

In most cases, you can leave this property set to the default value of FALSE. Campaign v8.5.0.4 and newer name multifield Audience ID fields according to the audience definition, regardless of the source of the fields. When you configure processes to use multifield Audience ID fields, you now see the new Audience ID naming convention for multifield audiences. Already-configured processes in flowcharts created in previous Campaign versions should continue to work. However, if old flowcharts fail because of the change in the naming convention, you can revert Campaign behavior by setting this property to TRUE.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### **Campaign | partitions | partition[n] | server | flowchartSave**

The properties in this category specify the default settings for the auto-save and checkpoint properties of a new Campaign flowchart.

#### **checkpointFrequency**

##### Description

The checkpointFrequency property specifies (in minutes) the default setting for a new Campaign flowchart's checkpoint property, configurable for each flowchart through the client-side Advanced Settings window. The checkpoint feature provides the ability to capture a snapshot of a running flowchart for recovery purposes.

##### Default value

0 (zero)

##### Valid Values

Any integer

#### **autosaveFrequency**

##### Description

The autosaveFrequency property specifies (in minutes) the default setting for a new Campaign flowchart's auto-save property, configurable for each flowchart through the client-side Advanced Settings window. The auto-save function performs a forced save of flowcharts during editing and configuration.

##### Default value

0 (zero)

##### Valid Values

Any integer

### **Campaign | partitions | partition[n] | server | dataProcessing**

Properties in this category specify how IBM Campaign handles string comparisons and empty fields in flat files, and the behavior of the macro STRING\_CONCAT.

#### **longNumericIdsAsText**

##### Description

The `longNumericIdsAsText` property specifies whether the Campaign macro language will treat numeric IDs longer than 15 digits as text. This property affects ID fields. It has no effect on non-ID fields. This property is useful if you have numeric ID fields with more than 15 digits AND you want to include ID values in criteria.

- Set the value to TRUE to specify that numeric IDs longer than 15 digits will be treated as text.
- When the value is FALSE, numeric IDs longer than 15 digits are treated as numeric values (and thus might lose precision or uniqueness if truncated or rounded). If you do anything that treats the ID values as numeric (such as profiling, or using in a Derived Field), the text is converted to numeric, and precision beyond the 15th digit is lost.

**Note:** For non-ID numeric fields, if you do anything that treats the value as numeric (such as profiling, rounding, or using in a Derived Field), precision beyond 15 digits is lost.

This setting is ignored if the `partitions > partition[n] > dataSources > [data_source_name] > ForceNumeric` property is set to TRUE for fields coming from this data source.

#### **Default value**

FALSE

#### **Valid Values**

TRUE | FALSE

### **stringConcatWithNullIsNull**

#### **Description**

The `stringConcatWithNullIsNull` property controls the behavior of the Campaign macro `STRING_CONCAT`.

When the value is TRUE, `STRING_CONCAT` returns NULL if any of its inputs is NULL.

When the value is FALSE, `STRING_CONCAT` returns the concatenation of all of its non-NUL properties; in this case, `STRING_CONCAT` returns NULL only if all of its inputs are NULL.

#### **Default value**

TRUE

#### **Valid Values**

TRUE | FALSE

### **performCaseInsensitiveComparisonAs**

#### **Description**

The `performCaseInsensitiveComparisonAs` property specifies how Campaign compares data values when the `compareCaseSensitive` property is set to no (that is, during case-insensitive comparisons). This property is ignored if the value of `compareCaseSensitive` is yes.

When the value is UPPER, Campaign converts all data to upper case before comparing.

When the value is LOWER, Campaign converts all data to lower case before comparing.

#### **Default value**

LOWER

#### **Valid Values**

UPPER | LOWER

## **upperAllowsDate**

### **Description**

The `upperAllowsDate` property specifies whether the `UPPER` database function allows a `DATE/DATETIME` parameter, and therefore whether the operation may be performed in the database or must be performed by the Campaign server.

Set the value to `TRUE` if the database is SQL Server or Oracle. The `UPPER` function in these databases allows a `DATE/DATETIME` parameter.

Set the value to `FALSE` if the database is DB2 or Teradata. The `UPPER` function in these databases does not allow a `DATE/DATETIME` parameter.

Note that this setting is global, not per data source. If a value of `no` is recommended for any data source in use, set the value to `no`. If a value of `yes` is recommended for all data sources in use, set the value to `yes`.

### **Default value**

`TRUE`

### **Valid Values**

`TRUE | FALSE`

## **compareCaseSensitive**

### **Description**

The `compareCaseSensitive` property specifies whether the Campaign data comparisons are sensitive to alphabetic case (`UPPER` vs. `lower`).

When the value is `FALSE`, Campaign ignores case differences when comparing data values and sorts textual data in a binary, case-insensitive manner. This setting is strongly recommended when English data is used.

When the value is `TRUE`, Campaign distinguishes data values based on case differences, performing a true binary-value comparison of each character. This setting is strongly recommended when non-English data is used.

### **Default value**

`FALSE`

### **Valid Values**

`TRUE | FALSE`

## **lowerAllowsDate**

### **Description**

The `lowerAllowsDate` property specifies whether the `LOWER` database function allows a `DATE/DATETIME` parameter, and therefore whether the operation may be performed in the database or must be performed by the Campaign server.

Set the value to `TRUE` if the database is SQL Server or Oracle. The `LOWER` function in these databases allows a `DATE/DATETIME` parameter.

Set the value to `FALSE` if the database is DB2 or Teradata. The `LOWER` function in these databases does not allow a `DATE/DATETIME` parameter.

Note that this setting is global, not per data source. If a value of `no` is recommended for any data source in use, set the value to `no`. If a value of `yes` is recommended for all data sources in use, set the value to `yes`. Typically, only one database type is in use at a customer site, but there are some installations in which multiple database types are in use.

**Default value**

TRUE

**Valid Values**

TRUE | FALSE

**substrAllowsDate****Description**

The substrAllowsDate property specifies whether the SUBSTR/SUBSTRING database function allows a DATE/DATETIME parameter, and therefore whether the operation may be performed in the database or must be performed by the Campaign server.

Set the value to TRUE if the database is Oracle or Teradata. The SUBSTR/SUBSTRING function in these databases allows a DATE/DATETIME parameter.

Set the value to FALSE if the database is SQL Server or DB2. The SUBSTR/SUBSTRING function in these databases does not allow a DATE/DATETIME parameter.

Note that this setting is global, not per data source. If a value of no is recommended for any data source in use, set the value to no. If a value of yes is recommended for all data sources in use, set the value to yes.

**Default value**

TRUE

**Valid Values**

TRUE | FALSE

**ltrimAllowsDate****Description**

The ltrimAllowsDate property specifies whether the LTRIM database function allows a DATE/DATETIME parameter, and therefore whether the operation may be performed in the database or must be performed by the Campaign server.

Set the value to TRUE if the database is SQL Server, Oracle, or Teradata. The LTRIM function in these databases allows a DATE/DATETIME parameter.

Set the value to FALSE if the database is DB2. The LTRIM function in this database does not allow a DATE/DATETIME parameter.

Note that this setting is global, not per data source. If a value of no is recommended for any data source in use, set the value to no. If a value of yes is recommended for all data sources in use, set the value to yes. Typically, only one database type is in use at a customer site, but there are some installations in which multiple database types are in use.

**Default value**

TRUE

**Valid Values**

TRUE | FALSE

**rtrimAllowsDate****Description**

The `rtrimAllowsDate` property specifies whether the RTRIM database function allows a DATE/DATETIME parameter, and therefore whether the operation may be performed in the database or must be performed by the Campaign server.

Set the value to TRUE if the database is SQL Server, Oracle, or Teradata. The RTRIM function in these databases allows a DATE/DATETIME parameter.

Set the value to FALSE if the database is DB2. The RTRIM function in this database does not allow a DATE/DATETIME parameter.

Note that this setting is global, not per data source. If a value of no is recommended for any data source in use, set the value to no. If a value of yes is recommended for all data sources in use, set the value to yes.

#### Default value

TRUE

#### Valid Values

TRUE | FALSE

### likeAllowsDate

#### Description

The `likeAllowsDate` property specifies whether the LIKE database function allows a DATE/DATETIME parameter, and therefore whether the operation may be performed in the database or must be performed by the Campaign server.

Set the value to TRUE if the database is SQL Server or Oracle. The LIKE function in these databases allows a DATE/DATETIME parameter.

Set the value to FALSE if the database is DB2 or Teradata. The LIKE function in these databases does not allow a DATE/DATETIME parameter.

**Note:** This setting is global, not per data source. If a value of no is recommended for any data source in use, set the value to no. If a value of yes is recommended for all data sources in use, set the value to yes.

#### Default value

TRUE

#### Valid Values

TRUE | FALSE

### fileAllSpacesIsNull

#### Description

The `fileAllSpacesIsNull` property controls how Campaign interprets an empty field in a mapped flat file by specifying whether an all-spaces value in a flat file should be considered to be a NULL value.

When the value is TRUE, an all-spaces value is considered to be a NULL value. Campaign matches queries such as `<field> is null`, but fails queries such as `<field> = ""`.

When the value is FALSE, an all-spaces value is treated as a non-NULL empty string. Campaign matches queries such as `<field> = ""`, but fails `<field> is null`.

#### Default value

TRUE

#### Valid Values

TRUE | FALSE

## Campaign | partitions | partition[n] | server | optimization

Properties in this category control IBM Campaign server optimization for each partition.

**Note:** This category is not related to IBM Contact Optimization.

### maxVirtualMemory

#### Configuration category

Campaign|partitions|partition[n]|server|optimization

#### Description

This property specifies a default value for the maximum amount of system virtual memory to use when running a flowchart. You can increase the value to improve performance or decrease the value to limit the resources used by a single flowchart. The maximum value is 4095 MB. If you enter a larger value, Campaign automatically limits it to 4095 MB.

Set a value equal to  $(80\% \times \text{available memory}) / (\text{number of expected concurrent flowcharts})$ . For example:

If available virtual memory on server = 32 GB

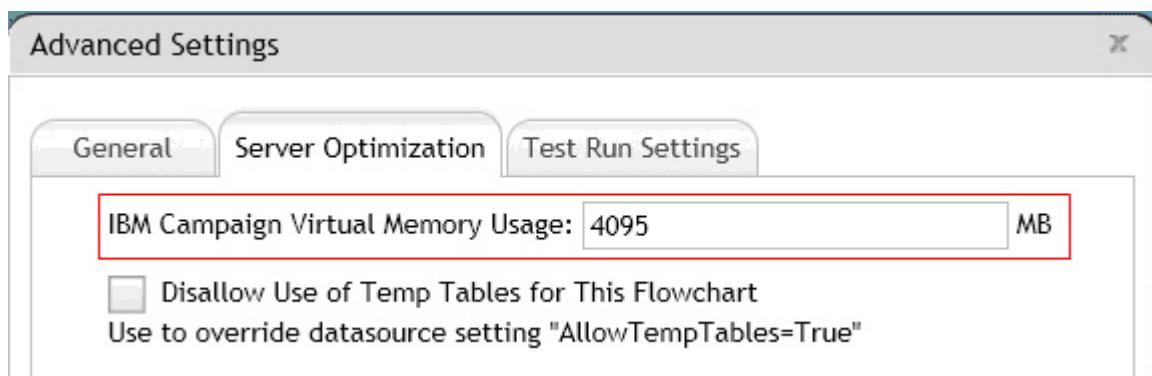
Number of concurrent flowcharts = 10

Set virtual Memory =  $(80 \% \times 32) / 10 = \text{approximately } 2.5 \text{ GB} / \text{flowchart}$

#### Default value

128 (MB)

**maxVirtualMemory** is a global configuration setting. To override the value for a specific flowchart, open the flowchart in Edit mode, select **Advanced Settings** from the **Admin** menu  , and change the **IBM Campaign Virtual Memory Usage** value on the Server Optimization tab.



### useInDbOptimization

#### Configuration category

Campaign|partitions|partition[n]|server|optimization

#### Description

This property specifies whether IBM Campaign tries to perform as many operations as possible in the database instead of in the Campaign server.

Setting the value to TRUE can improve flowchart performance. When the value is TRUE, IBM Campaign avoids pulling the ID lists if possible.

When the value is FALSE, IBM Campaign maintains lists of IDs in the IBM Campaign server at all times.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### **maxReuseThreads**

#### Configuration category

Campaign | partitions | partition[n] | server | optimization

#### Description

This property specifies the number of operating system threads that are cached by the server process (unica\_acsvr) for reuse. By default, the cache is disabled.

It is a best practice to use the cache when you want to reduce the overhead of thread allocation, or with operating systems that exhibit an inability to release threads when asked to do so by an application.

If the **maxReuseThreads** property is a non-zero value, set it to be greater than or equal to the value of **MaxQueryThreads**.

#### Default value

0 (zero), which disables the cache

### **threadStackSize**

#### Configuration category

Campaign|partitions|partition[n]|server|optimization

#### Description

This property determines the number of bytes allocated for each thread's stack. Do not change this property except under guidance from IBM. The minimum value is 128 K. The maximum value is 8 MB.

#### Default value

1048576

### **tempTableDataSourcesForSegments**

#### Configuration category

Campaign|partitions|partition[n]|server|optimization

#### Description

This property defines the list of data sources where persistent Segment temp tables can be created by the Create Seg process. This list is comma-separated. By default, this property is blank.

#### Default value

No default value defined.

### **doNotCreateServerBinFile**

#### Configuration category

Campaign|partitions|partition[n]|server|optimization

#### Description

To improve performance, set this property to TRUE. When this property is TRUE, strategic segments create Segment temp tables in the data source rather than creating binary files on the IBM Campaign server. You must specify at least one data source in the Create Segment (CreateSeg) process configuration dialog to hold the temp tables. Also, you must set the AllowTempTables property to TRUE to enable the creation of temporary tables in a data source.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### **forceViewForPreOptDates**

#### Configuration category

Campaign|partitions|partition[n]|server|optimization

#### Description

The default value (TRUE) forces creation of a parameterized offer attribute view in a Mail List process whose offers are assigned from Optimize. A value of FALSE causes the parameterized offer attribute view to be created only if the Mail List exports at least one parameterized offer attribute.

If this value is set to FALSE, a Mail List process that is configured to get its input from an Extract process (whose source is an Optimize session) may write NULL values for EffectiveDate and ExpirationDate into the UA\_Treatment table, even when the offer includes parameterized Effective and Expiration Dates. In this case, set it back to TRUE.

#### Default value

TRUE

#### Valid Values

TRUE | FALSE

### **Campaign | partitions | partition[n] | server | logging**

Properties in this category affect logging behavior for the specified partition on the IBM Campaign server.

### **enableWindowsEventLogging**

#### Description

This property enables or disables IBM Campaign server logging to the Windows event log.

If the value is TRUE, logging to the Windows event log is enabled.

If the value is FALSE, logging to the Windows event log is disabled, and the windowsEventLoggingLevel and windowsEventLoggingCategory settings are ignored.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### **logFileBufferSize**

#### Configuration category

Campaign|partitions|partition[n]|server|logging

#### Description

This property is used when the value of **keepFlowchartLogOpen** is TRUE. Specify a value to indicate the number of messages to buffer before writing to the log. If the value is 1, every log message is written immediately to file, effectively disabling buffering but having a negative impact on performance.

This property is ignored if **keepFlowchartLogOpen** is FALSE.

#### Default value

5

### **keepFlowchartLogOpen**

#### Configuration category

Campaign|partitions|partition[n]|server|logging

#### Description

This property specifies whether IBM Campaign opens and closes the flowchart log file each time a line is written to the log file.

A value of TRUE can improve performance of real-time interactive flowcharts. When the value is TRUE, IBM Campaign opens the flowchart log file only once, and closes it when the flowchart's server process exits. A side effect of using the TRUE value is that recently-logged messages may not be immediately visible in the log file, as IBM Campaign flushes the log messages to file only when its internal buffer becomes full or when the number of logged messages equals the value of the **logFileBufferSize** property.

If the value is FALSE, IBM Campaign opens and closes the flowchart log file.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### **logProcessId**

#### Configuration category

Campaign|partitions|partition[n]|server|logging

#### Description

The **logProcessId** property controls whether the process ID (pid) of the IBM Campaign Server process is logged in the log file.

If the value is TRUE, the process ID is logged.

If the value is FALSE, the process ID is not logged.

#### Default value

TRUE

#### Valid Values

TRUE | FALSE

### **logMaxBackupIndex**

#### Configuration category

Campaign|partitions|partition[n]|server|logging

#### Description

The **logMaxBackupIndex** property specifies the number of backup Campaign server log files that are kept before the oldest is erased.

If the value is 0 (zero), no backup files are created, and the log file is truncated when it reaches the size specified by the **logFileMaxSize** property.

For a value of n, where n is greater than zero, the files {File.1, ..., File.n-1} are renamed to {File.2, ..., File.n}. Also, File is renamed File.1 and closed. A new File is created to receive further log output.

#### Default value

1 (creates one backup log file)

### loggingCategories

#### Configuration category

Campaign|partitions|partition[n]|server|logging

#### Description

The **loggingCategories** property specifies the category of messages written to the IBM Campaign server log file. This works in conjunction with **loggingLevels**, which determines which messages are logged based on severity (for all selected categories). You can specify multiple categories in a comma-separated list. The special category **all** provides a shorthand for specifying all logging categories.

#### Default value

ALL

#### Valid Values

Supported categories are:

- ALL
- BAD\_ORDER
- CELL\_ACCESS
- CONFIG
- DATA\_ERRORS
- DBLOAD
- FILE\_ACCESS
- GENERAL
- COMMANDS
- MEMORY
- PROCRUN
- QUERY
- SORT
- SYSQUERY
- TABLE\_ACCESS
- TABLE\_MAPPING
- TABLE\_IO
- WEBPROC

### loggingLevels

#### Configuration category

Campaign|partitions|partition[n]|server|logging

## Description

The **loggingLevels** property controls the amount of detail written to the Campaign server log file, based on severity.

## Default value

MEDIUM

## Valid Values

LOW: represents the least detail (the most severe errors only)

MEDIUM

HIGH

ALL: includes trace messages and is intended primarily for diagnostic purposes

**Note:** You may want to set **loggingLevels** to ALL during configuration and testing. This value generates a large amount of data and therefore may not be advisable for production operation. Setting any logging level higher than its default can adversely affect performance.

You can adjust these settings from within a flowchart by using **Tools > Logging Options**.

## windowsEventLoggingCategories

### Configuration category

Campaign|partitions|partition[n]|server|logging

## Description

This property specifies the category of messages written to the Campaign server windows event log. This property works in conjunction with **windowsEventLoggingLevels**, which determines which messages are logged based on severity (for all selected categories).

You can specify multiple categories in a comma-separated list. The special category **all** provides a shorthand for specifying all logging categories.

## Default value

ALL

## Valid Values

ALL

BAD\_ORDER

CELL\_ACCESS

CONFIG

DATA\_ERRORS

DBLOAD

FILE\_ACCESS

GENERAL

COMMANDS

MEMORY

PROCRUN

QUERY

SORT

SYSQUERY

TABLE\_ACCESS

TABLE\_MAPPING

TABLE\_IO

**logFileMaxSize****Configuration category**

Campaign|partitions|partition[n]|server|logging

**Description**

This property specifies the maximum size, in bytes, that the Campaign server log file is allowed to reach before being rolled over to backup files.

**Default value**

10485760 (10 MB)

**windowsEventLoggingLevels****Configuration category**

Campaign|partitions|partition[n]|server|logging

**Description**

This property controls the amount of detail written to the IBM Campaign server windows event log based on severity.

**Default value**

MEDIUM

**Valid Values**

LOW: represents the least detail (the most severe errors only)

MEDIUM

HIGH

ALL: includes trace messages and is intended primarily for diagnostic purposes.

**enableLogging****Configuration category**

Campaign|partitions|partition[n]|server|logging

**Description**

This property specifies whether IBM Campaign server logging is turned on at session startup.

If the value is TRUE, logging is turned on.

If the value is FALSE, logging is turned off.

**Default value**

TRUE

**Valid Values**

TRUE | FALSE

**AllowCustomLogPath****Configuration category**

Campaign|partitions|partition[n]|server|logging

**Description**

This property allows users to change the log path for each campaign flowchart that generates flowchart-specific logging information when it is run.

A setting of True allows users to change the path through the user interface or when using `unica_svradm` to run the flowchart.

A setting of False prevents users from changing the path to which the flowchart log file is written.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### Campaign | partitions | partition[n] | server | flowchartRun

Properties in this category specify how many errors are allowed in a Campaign Snapshot export, what files are saved when you save a flowchart, and the maximum number of IDs for each top-level process in a test run.

#### maxDataErrorsAllowed

##### Description

The `maxDataErrorsAllowed` property specifies the maximum number of data conversion errors allowed in an Campaign Snapshot export.

##### Default value

0 (zero), which allows no errors

#### saveRunResults

##### Description

This property lets you save Campaign flowchart run results in the temporary folder and database temp tables. You can adjust this option for individual flowcharts by using **Admin > Advanced Settings** when editing a flowchart.

For flowcharts that create artifacts that you want to save, you must set `saveRunResults` to TRUE. For example, if you have flowcharts that include `CreateSeg` processes, you must save run results. If you do not save run results, strategic segments do not persist.

When the value is TRUE, the flowchart ("underscore") files are saved and, if you are using `useInDbOptimization`, database temp tables persist.

When the value is FALSE, only the .ses file is saved. Therefore, you cannot view intermediate results if you reload the flowchart.

IBM Campaign creates many temporary files in the temporary directory, which can cause file systems to be highly utilized or even full. Setting this property to FALSE makes the flowchart clean up those files after run completion. However, using a setting of FALSE is not always feasible because it prevents you from doing partial flowchart runs.

To save disk space, you can create your own script to delete files in the temporary folder, but you must never delete files for flowcharts that are currently running. To avoid flowchart failures, never delete any files from the temporary folder that are being updated or created today. For maintenance purposes, you can delete files from the temp folder if they are older than 2 days.

##### Default value

TRUE

#### Valid Values

TRUE | FALSE

## **testRunDefaultSize**

### **Description**

The `testRunDefaultSize` property specifies the default maximum number of IDs for each top-level process in a Campaign test run. A value of 0 (zero) removes the limitation on the number of IDs.

### **Default value**

0 (zero)

## **Campaign | partitions | partition[n] | server | profile**

Properties in this category specify the maximum number of categories that are created during profiling for numeric and text values in Campaign.

## **profileMaxTextCategories**

### **Description**

The `profileMaxTextCategories` and `profileMaxNumberCategories` properties specify the maximum number of categories created in Campaign during profiling for text and numeric values, respectively.

These values are different from the setting for the number of bins displayed to the user, which can be modified through the user interface.

### **Default value**

1048576

## **profileMaxNumberCategories**

### **Description**

The `profileMaxNumberCategories` and `profileMaxTextCategories` properties specify the maximum number of categories created in Campaign during profiling for numeric and text values, respectively.

These values are different from the setting for the number of bins displayed to the user, which can be modified through the user interface.

### **Default value**

1024

## **Campaign | partitions | partition[n] | server | internal**

Properties in this category specify integration settings and the `internalID` limits for the selected Campaign partition. If your Campaign installation has multiple partitions, set these properties for each partition that you want to affect.

## **internalIdLowerLimit**

### **Configuration category**

Campaign|partitions|partition[n]|server|internal

### **Description**

The `internalIdUpperLimit` and `internalIdLowerLimit` properties constrain the Campaign internal IDs to be within the specified range. Note that the values are inclusive: that is, Campaign may use both the lower and upper limit.

### **Default value**

0 (zero)

## **internalIdUpperLimit**

### **Configuration category**

Campaign|partitions|partition[n]|server|internal

### **Description**

The internalIdUpperLimit and internalIdLowerLimit properties constrain the Campaign internal IDs to be within the specified range. The values are inclusive: that is, Campaign may use both the lower and upper limit. If Distributed Marketing is installed, set the value to 2147483647.

### **Default value**

4294967295

## **eMessageInstalled**

### **Configuration category**

Campaign|partitions|partition[n]|server|internal

### **Description**

Indicates that eMessage is installed. When you select Yes, eMessage features are available in the Campaign interface.

The IBM installer sets this property to Yes for the default partition in your eMessage installation. For additional partitions where you installed eMessage, you must configure this property manually.

### **Default value**

No

### **Valid Values**

Yes | No

## **interactInstalled**

### **Configuration category**

Campaign|partitions|partition[n]|server|internal

### **Description**

After installing the Interact design environment, this configuration property should be set to Yes to enable the Interact design environment in Campaign.

If Interact is not installed, set to No. Setting this property to No does not remove Interact menus and options from the user interface. To remove menus and options, you must manually unregister Interact using the configTool utility.

### **Default value**

No

### **Valid Values**

Yes | No

### **Availability**

This property is applicable only if you installed Interact.

## **MO\_UC\_integration**

### **Configuration category**

Campaign|partitions|partition[n]|server|internal

## Description

Enables integration with Marketing Operations for this partition, if the integration is enabled in the **Platform** configuration settings. For more information, see the *IBM Marketing Operations and Campaign Integration Guide*.

## Default value

No

## Valid Values

Yes | No

## MO\_UC\_BottomUpTargetCells

### Configuration category

Campaign|partitions|partition[n]|server|internal

## Description

For this partition, allows bottom-up cells for Target Cell Spreadsheets, if **MO\_UC\_integration** is enabled. When set to Yes, both top-down and bottom-up target cells are visible, but bottom-up target cells are read-only. For more information, see the *IBM Marketing Operations and Campaign Integration Guide*.

## Default value

No

## Valid Values

Yes | No

## Legacy\_campaigns

### Configuration category

Campaign|partitions|partition[n]|server|internal

## Description

For this partition, enables access to campaigns created before Marketing Operations and Campaign were integrated. Applies only if **MO\_UC\_integration** is set to Yes. Legacy campaigns also include campaigns created in Campaign 7.x and linked to Plan 7.x projects. For more information, see the *IBM Marketing Operations and Campaign Integration Guide*.

## Default value

No

## Valid Values

Yes | No

## IBM Marketing Operations - Offer integration

### Configuration category

Campaign|partitions|partition[n]|server|internal

## Description

Enables the ability to use Marketing Operations to perform offer lifecycle management tasks on this partition, if **MO\_UC\_integration** is enabled for this partition. Offer integration must be enabled in your **Platform** configuration settings. For more information, see the *IBM Marketing Operations and Campaign Integration Guide*.

## Default value

No

#### Valid Values

Yes | No

### **UC\_CM\_integration**

#### Configuration category

Campaign|partitions|partition[n]|server|internal

#### Description

Enables Digital Analytics online segment integration for a Campaign partition. If you set this value to Yes, the Select process box in a flowchart provides the option to select **Digital Analytics Segments** as input. To configure the Digital Analytics integration for each partition, choose **Settings > Configuration > Campaign | partitions | partition[n] | Coremetrics**.

#### Default value

No

#### Valid Values

Yes | No

### **numRowsReadToParseDelimitedFile**

#### Configuration category

Campaign|partitions|partition[n]|server|internal

#### Description

This property is used when mapping a delimited file as a user table. It is also used by the Score process box when importing a score output file from IBM SPSS Modeler Advantage Enterprise Marketing Management Edition. To import or map a delimited file, Campaign needs to parse the file to identify the columns, data types (field types), and column widths (field lengths).

The default value of 100 means Campaign examines the first 50 and the last 50 line entries in the delimited file. Campaign then allocates the field length based on the largest value it finds within those entries. In most cases, the default value is sufficient to determine field lengths. However, in very large delimited files, a later field might exceed the estimated length that Campaign computes, which can cause an error during flowchart runtime. Therefore, if you are mapping a very large file, you can increase this value to make Campaign examine more line entries. For example, a value of 200 makes Campaign examine the first 100 line entries and the last 100 line entries of the file.

A value of 0 examines the entire file. Typically, this is necessary only if you are importing or mapping files that have variable data widths of fields which cannot be identified by reading the first and last few lines. Reading the entire file for extremely large files can increase the required processing time for table mapping and Score process box runs.

#### Default value

100

#### Valid Values

0 (all lines) or any positive integer

### **Campaign | partitions | partition[n] | server | fileDialog**

Properties in this category specify the default directories for Campaign input and output data files.

### **defaultOutputDirectory**

#### Description

The defaultOutputDirectory property specifies the path used to initialize the Campaign File Selection dialog. The defaultOutputDirectory property is used when an output data file is mapped into Campaign. If no value is specified, the path is read from the environment variable UNICA\_ACDFDIR.

#### Default value

No default value defined.

### **defaultInputDirectory**

#### Description

The defaultInputDirectory property specifies the path used to initialize the Campaign File Selection dialog. The defaultInputDirectory property is used when an input data file is mapped into Campaign. If no value is specified, the path is read from the environment variable UNICA\_ACDFDIR.

#### Default value

No default value defined.

### **Campaign | partitions | partition[n] | offerCodeGenerator**

Properties in this category specify the class, classpath, and configuration string for the offer code generator, and also the cell code generator used to assign a contact process to a Target Cell Spreadsheet cell.

### **offerCodeGeneratorClass**

#### Description

The offerCodeGeneratorClass property specifies the name of the class Campaign uses as its offer code generator. The class must be fully qualified with its package name.

#### Default value

Note that line breaks have been added for print.

com.unica.campaign.core.codegenerator.samples. ExecutableCodeGenerator

### **offerCodeGeneratorConfigString**

#### Description

The offerCodeGeneratorConfigString property specifies a string that is passed into the offer code generator plug-in when it is loaded by Campaign. By default, the ExecutableCodeGenerator (shipped with Campaign) uses this property to indicate the path (relative to Campaign application home directory) to the executable to run.

#### Default value

./bin

### **defaultGenerator**

#### Description

The defaultGenerator property specifies the generator for the cell codes that appear in contact-style process boxes and are used to assign cells to Target Control Spreadsheet cells. The Target Control Spreadsheet manages cell and offer mappings for campaigns and flowcharts.

#### Default value

uacoffercodegen.exe

## **offerCodeGeneratorClasspath**

### **Description**

The offerCodeGeneratorClasspath property specifies the path to the class Campaign uses as its offer code generator. It can be either a full path or a relative path.

If the path ends in a slash (forward slash / for UNIX or backslash \ for Windows), Campaign assumes it to be a path to a directory that contains the Java plug-in class that should be used. If the path does not end in a slash, Campaign assumes it is the name of a jar file that contains the Java class.

If the path is relative, Campaign assumes it is relative to the Campaign application home directory.

### **Default value**

codeGenerator.jar (packaged in the Campaign.war file)

## **Campaign | partitions | partition[n] | Coremetrics**

The properties in this category specify integration settings for Digital Analytics and Campaign for the selected partition.

If your Campaign installation has multiple partitions, set these properties for each partition that you want to affect. For these properties to take effect, UC\_CM\_integration must be set to Yes for the partition (under partitions | partition[n] | server | internal).

### **ServiceURL**

#### **Description**

The ServiceURL specifies the location of the Digital Analytics integration service that provides the integration point between Digital Analytics and Campaign. Note that the default port for https is 443.

#### **Default value**

<https://export.coremetrics.com/eb/segmentapi/1.0/api.do>

#### **Valid values**

The only supported value for this release is the default value shown above.

### **CoremetricsKey**

#### **Description**

Campaign uses the CoreMetricsKey to map IDs exported from Digital Analytics to the corresponding Audience ID in Campaign. The value defined for this property must exactly match the value used in the translation table.

#### **Default value**

registrationid

#### **Valid values**

The only supported value for this release is registrationid.

### **ClientID**

#### **Description**

Set this value to the unique Digital Analytics Client ID assigned to your company.

#### **Default value**

No default value defined.

## TranslationTableName

### Description

Specify the name of the translation table being used to translate Digital Analytics keys to Campaign Audience IDs. For example, Cam\_CM\_Trans\_Table. If you do not specify a table name, an error will occur if users run a flowchart that uses Digital Analytics segments as input, because without the table name, Campaign does not know how to map IDs from one product to the other.

**Note:** When you map or re-map a translation table, the **IBM Table Name** assigned in the Table Definition dialog must exactly match (including case) the TranslationTableName defined here.

### Default value

No default value defined.

## ASMUserForCredentials

### Description

The ASMUserForCredentials property specifies which IBM EMM account is allowed to access the Digital Analytics integration service. See below for additional information.

If no value is specified, Campaign checks the currently logged-in user's account to see if the ASMDatasourceForCredentials value is specified as a data source. If it is, then access is allowed. If not, access is denied.

### Default value

asm\_admin

## ASMDatasourceForCredentials

### Description

The ASMDatasourceForCredentials property identifies the data source assigned to the Marketing Platform account specified in the **ASMUserForCredentials** setting. The default is UC\_CM\_ACCESS. This "data source for credentials" is the mechanism that Marketing Platform uses to store the credentials that provide access to the integration service.

Although a default value of UC\_CM\_ACCESS is supplied, a data source of that name is not provided, nor do you have to use that name.

**Important:** You must choose **Settings > Users**, select the user specified in **ASMUserForCredentials**, click the **Edit Data Sources** link, and add a new data source whose name exactly matches the value defined here (for example, UC\_CM\_ACCESS). For Data Source Login and Data Source Password, use the credentials associated with your Digital Analytics Client ID. For information about data sources, user accounts, and security, see the *IBM Marketing Platform Administrator's Guide*.

### Default value

UC\_CM\_ACCESS

## Campaign | monitoring

Properties in the this category specify whether the Operational Monitoring feature is enabled, the URL of the Operational Monitoring server, and caching behavior. Operational Monitoring displays and allows you to control active flowcharts.

## **cacheCleanupInterval**

### **Description**

The `cacheCleanupInterval` property specifies the interval, in seconds, between automatic cleanups of the flowchart status cache.

This property is not available in versions of Campaign earlier than 7.0.

### **Default value**

600 (10 minutes)

## **cacheRunCompleteTime**

### **Description**

The `cacheRunCompleteTime` property specifies the amount of time, in minutes, that completed runs are cached and display on the Monitoring page.

This property is not available in versions of Campaign earlier than 7.0.

### **Default value**

4320

## **monitorEnabled**

### **Description**

The `monitorEnabled` property specifies whether the monitor is turned on.

This property is not available in versions of Campaign earlier than 7.0.

### **Default value**

FALSE

### **Valid values**

TRUE | FALSE

## **serverURL**

### **Description**

The `Campaign > monitoring > serverURL` property specifies the URL of the Operational Monitoring server. This is a mandatory setting; modify the value if the Operational Monitoring server URL is not the default.

If Campaign is configured to use Secure Sockets Layer (SSL) communications, set the value of this property to use HTTPS. For example: `serverURL=https://host:SSL_port/Campaign/OperationMonitor` where:

- `host` is the name or IP address of the machine on which the web application is installed
- `SSL_Port` is the SSL port of the web application.

Note the `https` in the URL.

### **Default value**

`http://localhost:7001/Campaign/OperationMonitor`

## **monitorEnabledForInteract**

### **Description**

If set to TRUE, enables Campaign JMX connector server for Interact. Campaign has no JMX security.

If set to FALSE, you cannot connect to the Campaign JMX connector server.

This JMX monitoring is for the Interact contact and response history module only.

#### **Default value**

FALSE

#### **Valid Values**

TRUE | FALSE

#### **Availability**

This property is applicable only if you have installed Interact.

### **protocol**

#### **Description**

Listening protocol for the Campaign JMX connector server, if monitorEnabledForInteract is set to yes.

This JMX monitoring is for the Interact contact and response history module only.

#### **Default value**

JMXMP

#### **Valid Values**

JMXMP | RMI

#### **Availability**

This property is applicable only if you have installed Interact.

### **port**

#### **Description**

Listening port for the Campaign JMX connector server, if monitorEnabledForInteract is set to yes.

This JMX monitoring is for the Interact contact and response history module only.

#### **Default value**

2004

#### **Valid Values**

An integer between 1025 and 65535.

#### **Availability**

This property is applicable only if you have installed Interact.

## **Campaign | ProductReindex**

The creator of an offer can specify the products that are associated with that offer. When the list of products available for association with offers changes, the offer/product associations must be updated. Properties in the Campaign > ProductReindex category specify the frequency of these updates and the time of day that the first update runs.

### **startTime**

#### **Description**

The `startTime` property specifies the time of day when offer/product associations are updated for the first time. The first update occurs on the day after the Campaign server is started, and subsequent updates occur at intervals specified in the `interval` parameter. The format is `HH:mm:ss`, using a 24-hour clock.

Note that when Campaign first starts up, the `startTime` property is used according to the following rules:

- If the time of day specified by `startTime` is in the future, the first offer/product associations update will occur at `startTime` of the current day.
- If `startTime` is in the past for the current day, the first update will occur at `startTime` tomorrow, or at `interval` minutes from the current time, whichever is earlier.

#### Default value

12:00:00 (noon)

#### interval

##### Description

The `interval` property specifies the time, in minutes, between updates of offer/product associations. The update occurs for the first time at the time specified in the `startTime` parameter, on the day after the Campaign server is started.

#### Default value

3600 (60 hours)

## Campaign | unicaACListener

The `Campaign | unicaACListener` properties specify logging levels, some access privileges, language encodings, number of operating system threads, and the protocol, host, and port of the Campaign listener. These properties must be set only once per instance of Campaign; they do not need to be set for every partition.

## enableWindowsImpersonation

##### Description

The `enableWindowsImpersonation` property specifies whether Windows impersonation is enabled in Campaign.

Set the value to `TRUE` if you are using Windows impersonation. You must configure Windows impersonation separately if you want to leverage the Windows-level security permissions for file access.

Set the value to `FALSE` if you are not using Windows impersonation.

#### Default value

`FALSE`

#### Valid Values

`TRUE` | `FALSE`

## enableWindowsEventLogging

##### Description

The `Campaign > unicaACListener > enableWindowsEventLogging` property controls logging to the Windows event log. Set this property to `TRUE` to log to the Windows event log.

#### Default value

FALSE

#### Valid Values

TRUE | FALSE

### serverHost

#### Description

The serverHost property specifies the name or IP address of the machine where the Campaign listener is installed. If the Campaign listener is not installed on the same machine where IBM EMM is installed, change the value to the machine name or IP address of the machine where the Campaign listener is installed.

#### Default value

localhost

### logMaxBackupIndex

#### Description

The logMaxBackupIndex property specifies how many backup files can exist before the oldest one is deleted. If you set this property to 0 (zero), Campaign does not create any backup files and the log file stops logging when it reaches the size you specified in the logMaxFileSize property.

If you specify a number (N) for this property, when the log file (File) reaches the size you specified in the logMaxFileSize property, Campaign renames the existing backup files (File.1 ... File.N-1) to File.2 ... File.N , renames the current log file File.1, closes it, and starts a new log file named File.

#### Default value

1 (creates one backup file)

### logStringEncoding

#### Description

The logStringEncoding property controls the encoding used for all log files. This value must match the encoding used on the operating system. For multi-locale environments, UTF-8 is the preferred setting.

If you change this value, you should empty or remove all affected log files to prevent writing multiple encodings into a single file.

**Note:** WIDEUTF-8 is not supported for this setting.

#### Default value

native

#### Valid Values

See "Character encodings in Campaign" in the *Campaign Administrator's Guide*.

### systemStringEncoding

#### Description

The systemStringEncoding property indicates which encodings Campaign uses to interpret values received from and sent to the operating system, such as file system paths and filenames. In most cases, you can set this value to native. For multi-locale environments, use UTF-8.

You can specify more than one encoding, separated by commas. For example:

UTF-8, ISO-8859, CP950

**Note:** WIDEUTF-8 is not supported for this setting.

**Default value**

native

**Valid Values**

See *Character encodings in Campaign* in the *Campaign Administrator's Guide*.

## loggingLevels

**Description**

The Campaign > unicaACListener > loggingLevels property controls the amount of detail written to the log file.

**Default value**

MEDIUM

**Valid Values**

- LOW
- MEDIUM
- HIGH

## maxReuseThreads

**Description**

The Campaign > unicaACListener > maxReuseThreads property sets the number of operating system threads cached by the Campaign listener process (unica\_aclsnr) for reuse.

It is a best practice to use the cache when you want to reduce the overhead of thread allocation, or with operating systems that can exhibit an inability to release threads when asked to do so by an application.

**Default value**

0 (zero), which disables the cache

## logMaxFileSize

**Description**

The logMaxFileSize property specifies the maximum size, in bytes, that the log file can reach before rolling into the backup file.

**Default value**

10485760 (10 MB)

## windowsEventLoggingLevels

**Description**

The windowsEventLoggingLevels property controls the amount of detail written to the Windows event log file based on severity.

**Default value**

MEDIUM

**Valid Values**

- LOW
- MEDIUM
- HIGH
- ALL

The ALL level includes trace messages intended for diagnostic purposes.

## **serverPort**

### **Description**

The serverPort property specifies the port where the Campaign listener is installed.

### **Default value**

4664

## **useSSL**

### **Description**

The useSSL property specifies whether to use Secure Sockets Layer for communications between the Campaign listener and the Campaign web application.

Also see the description for the serverPort2 property, in this category.

### **Default value**

no

### **Valid Values**

yes | no

## **serverPort2**

### **Description**

The serverPort2 property, in conjunction with the useSSLForPort2 property, also in this category, enables you to specify the use of SSL for communication between the Campaign listener and flowchart processes, separately from the communication between the Campaign web application and listener, which is specified by the serverPort and useSSL properties in this category.

All communication between Campaign components, (between the web application and listener and between the listener and server) use the mode specified by the useSSL property under any of the following conditions.

- serverPort2 is set to its default value of 0, **or**
- serverPort2 is set to the same value as serverPort, **or**
- useSSLForPort2 is set to the same value as useSSL

In these cases, a second listener port is not enabled, and communication between the Campaign listener and the flowchart (server) processes and communication between the listener and the Campaign web application use the same mode: either both non-SSL or both SSL, depending on the value of the useSSL property.

The listener uses two different modes of communication when both of the following conditions exist.

- serverPort2 is set to a non-0 value different from the value of serverPort, **and**
- useSSLForPort2 is set to a value different from the value of useSSL

In this case, a second listener port is enabled, and the listener and flowchart processes use the mode of communication specified by useSSLForPort2.

The Campaign web application always uses the communication mode specified by `useSSL` when communicating to the listener.

When SSL is enabled for communication between the Campaign listener and flowchart processes, set the value of this property (`serverPort2`) to an appropriate port.

**Default value**

0

## **useSSLForPort2**

**Description**

See the description for the `serverPort2` property, in this category.

**Default value**

FALSE

**Valid Values**

TRUE, FALSE

## **keepalive**

**Description**

Use the `keepalive` property to specify, in seconds, the frequency with which the Campaign web application server sends keep alive messages on otherwise-inactive socket connections to the Campaign listener.

Using the `keepalive` configuration parameter enables socket connections to remain open through extended periods of application inactivity in environments configured to close inactive connections between the web application and the listener (for example, a firewall).

When there is activity on a socket, the keep alive period is automatically reset. At the DEBUG logging level in the web application server, the `campaignweb.log` will show evidence of the keep alive messages as they are sent to the listener.

**Default value**

0, which disables the `keepalive` feature

**Valid Values**

positive integers

## **Campaign | unicaACOptAdmin**

These configuration properties define settings for the `unicaACOptAdmin` tool.

## **getProgressCmd**

**Description**

Specifies a value that is used internally. Do not change this value.

**Default value**

`optimize/ext_optimizeSessionProgress.do`

**Valid Values**

`optimize/ext_optimizeSessionProgress.do`

## **runSessionCmd**

### **Description**

Specifies a value that is used internally. Do not change this value.

### **Default value**

optimize/ext\_runOptimizeSession.do

### **Valid Values**

optimize/ext\_runOptimizeSession.do

## **loggingLevels**

### **Description**

The loggingLevel property controls the amount of detail that is written to the log file for the Contact Optimization command-line tool, which is based on severity. Available levels are LOW, MEDIUM, HIGH, and ALL, with LOW providing the least detail (that is, only the most severe messages are written). The ALL level includes trace messages and is intended primarily for diagnostic purposes.

### **Default value**

HIGH

### **Valid Values**

LOW | MEDIUM | HIGH | ALL

## **cancelSessionCmd**

### **Description**

Specifies a value that is used internally. Do not change this value.

### **Default value**

optimize/ext\_stopOptimizeSessionRun.do

### **Valid Values**

optimize/ext\_stopOptimizeSessionRun.do

## **logoutCmd**

### **Description**

Specifies a value that is used internally. Do not change this value.

### **Default value**

optimize/ext\_doLogout.do

### **Valid Values**

optimize/ext\_doLogout.do

## **getProgressWaitMS**

### **Description**

Set this value to the number (integer) of milliseconds between two successive polls to the web application to get progress information. This value is not used if you do not set getProgressCmd.

### **Default value**

1000

## **Valid Values**

An integer greater than zero

## **Campaign | server**

The property in this category specifies a URL that is used internally, and does not need to be changed.

### **fullContextPath**

#### **Description**

The `fullContextPath` specifies the URL that Campaign flowcharts use to communicate to the application server Listener proxy. This property is undefined by default, which causes the system to determine the URL dynamically. When the Marketing Platform is integrated with the IBM Tivoli® web access control platform, you must set this property to the Campaign URL in Tivoli.

#### **Default value**

No default value defined.

## **Campaign | logging**

The property in this category specifies the location of the Campaign log properties file.

### **log4jConfig**

#### **Description**

The `log4jConfig` property specifies the location of the Campaign log properties file, `campaign_log4j.properties`. Specify the path relative to the `Campaignhome` directory, including the file name. Use forward slashes (/) for UNIX and backslashes (\) for Windows.

#### **Default value**

`./conf/campaign_log4j.properties`

---

## **Report configuration properties**

The report configuration properties for IBM EMM are at **Settings > Configuration > Reports**.

To generate reports, the IBM EMM suite integrates with IBM Cognos, a third-party business intelligence application. You use the **Integrations > Cognos** properties to identify your IBM Cognos system. Then, for Campaign, eMessage, and Interact, there are additional configuration properties to set up and customize the reporting schemas.

## **Reports | Integrations | Cognos [version]**

The IBM EMM suite integrates with IBM Cognos to generate reports.

This page displays properties that specify URLs and other parameters that are used by the IBM system.

### **Integration Name**

#### **Description**

Read-only. Specifies that IBM Cognos is the third-party reporting or analytical tool that is used by the IBM EMM to display the reports.

#### **Default value**

Cognos

## **Vendor**

### **Description**

Read-only. Specifies that IBM Cognos is the name of the company that provides the application that is specified by the Integration Name property.

### **Default value**

Cognos

## **Version**

### **Description**

Read-only. Specifies the product version of the application that is specified by the Integration Name property.

### **Default value**

*<version>*

## **Enabled**

### **Description**

Specifies whether IBM Cognos is enabled for the suite.

### **Default value**

False

### **Valid Values**

True | False

## **Integration Class Name**

### **Description**

Read-only. Specifies the fully qualified name of the Java class that creates the integration interface that is used to connect to the application specified by the Integration Name property.

### **Default value**

`com.unica.report.integration.cognos.CognosIntegration`

## **Domain**

### **Description**

Specifies the fully qualified company domain name in which your Cognos server is running. For example, `myCompanyDomain.com`.

If your company uses subdomains, the value in this field must include the appropriate subdomain as well.

### **Default value**

[CHANGE ME]

### **Valid Values**

A string no longer than 1024 characters.

## **Portal URL**

### **Description**

Specifies the URL of the IBM Cognos Connection portal. Use a fully qualified host name, including the domain name (and subdomain, if appropriate) that is specified in the **Domain** property. For example: `http://MyReportServer.MyCompanyDomain.com/cognos<version>/cgi-bin/cognos.cgi`

You can find the URL in IBM Cognos Configuration at: **Local Configuration > Environment**.

#### Default value

`http://[CHANGE ME]/cognos<version>/cgi-bin/cognos.cgi`

#### Valid Values

A well-formed URL.

### Dispatch URL

#### Description

Specifies the URL of the IBM Cognos Content Manager. Use a fully qualified host name, including the domain name (and subdomain, if appropriate) specified in the **Domain** property. For example: `http://MyReportServer.MyCompanyDomain.com:9300/p2pd/servlet/dispatch`

You can find the URL in Cognos Configuration at: **Local Configuration > Environment**.

#### Default value

`http://[CHANGE ME]:9300/p2pd/servlet/dispatch`

9300 is the default port number for the Cognos Content Manager. Be sure that the port number specified matches that used in the Cognos installation.

#### Valid Values

A well-formed URL.

### Authentication mode

#### Description

Specifies whether the IBM Cognos application is using the IBM Authentication Provider, which means it relies on the Marketing Platform for authentication.

#### Default value

`anonymous`

#### Valid Values

- `anonymous`: means that authentication is disabled.
- `authenticated`: means that the communications between the IBM system and the Cognos system are secured at the machine level. You configure a single system user and configure it with the appropriate access rights. By convention, this user is named "cognos\_admin."
- `authenticatedPerUser`: means that the system evaluates individual user credentials.

### Authentication namespace

#### Description

Read only. The namespace of the IBM Authentication Provider.

#### Default value

`UNICA`

### Authentication user name

#### Description

Specifies the login name for the reporting system user. The IBM applications log in to Cognos as this user when Cognos is configured to use the Unica Authentication provider. This user also has access to IBM EMM.

This setting applies only when the **Authentication mode** property is set to **authenticated**.

#### Default value

cognos\_admin

### Authentication datasource name

#### Description

Specifies the name of the data source for the reporting system user that holds the Cognos login credentials.

#### Default value

Cognos

### Enable form authentication

#### Description

Specifies whether form-based authentication is enabled. You set this property to True when either of the following condition is true:

- When the IBM EMM is not installed in the same domain as the IBM Cognos applications.
- When IBM Cognos accessed by using an IP address (within the same network domain) instead of the Fully Qualified Hostname (which is being used to access the IBM EMM applications), even if both the IBM EMM applications and the IBM Cognos installation are on the same machine.

However, when the value is True, the login process to Cognos Connection passes the login name and password in clear text and therefore is not secure unless IBM Cognos and the IBM EMM are configured to use SSL communication.

Even with SSL configured, the user name and password appear as clear text in the HTML source code when you "view source" in a displayed report. For this reason, you must install IBM Cognos and IBM EMM in the same domain.

#### Default value

False

#### Valid Values

True | False

## Reports | Schemas | [product] | [schema name] | SQL Configuration

The SQL script creates views or tables for the reporting schemas. The **Reports | Schemas | [product] | [schema name] | SQL Configuration** property provides information about the name of the views or tables.

### Table/View Name

#### Description

Specifies the name of the view or table that the SQL script you generate for this reporting schema creates. As a best practice, you should not change the name for any of the standard or default Table/View names. If you do, you must also change the name of the view in the Cognos model in IBM Cognos Framework Manager.

When you create a new reporting schema for a new audience level, you must specify the names of all the new reporting tables/views.

#### Default value

Varies by schema

#### Valid Values

A string with the following restrictions.

- It can be no longer than 18 characters
- It must use all uppercase letters

You must use the following naming convention:

- Start the name with the letter "UAR"
- Add a one-letter code to represent the IBM EMM application. See the list of codes, below.
- Add an underscore character
- Add the table name, including a one or two letter code to indicate the audience level
- Finish with an underscore character.

The SQL generator appends a time dimension code, if appropriate. See the following list of codes:

For example: UARC\_COPERF\_DY is the name of the reporting view or table for Campaign Offer Performance by Day.

Following is the list of IBM EMM application codes.

- Campaign: C
- eMessage: E
- Interact: I
- Distributed Marketing: X
- Marketing Operations: P
- Leads: L

Following is the list of the Time Dimension Codes added by the generator.

- Hour: HR
- Day: DY
- Week: WK
- Month: MO
- Quarter: QU
- Year: YR

## Reports | Schemas | Campaign

The **Reports | Schemas | Campaign** property provides information about the data source that identifies the Campaign database.

### Input Datasource (JNDI)

#### Description

Specifies the name of the JNDI data source that identifies the Campaign database, specifically, the system tables. This data source must exist if you want to use the SQL generation tool to generate scripts that create reporting tables. The SQL generation tool can generate scripts that create reporting views without this data source, but it cannot validate them.

The database type of this data source must match the database type that you select when you generate the SQL scripts for the Campaign views or reporting tables.

**Default value**

campaignPartition1DS

## Reports | Schemas | Campaign | Offer Performance

The Offer Performance Schema yields contact and response history metrics for all offers and for offers by campaign. By default, the schema is configured to generate a "summary" view (or table) across all time.

### Audience Key

**Description**

Specifies the name of the column that is the Audience Key for the audience level that is supported by this reporting schema.

**Default value**

CustomerID

**Valid Values**

A string value no longer than 255 characters

If the key includes more than one column, use commas between the column names. For example, ColumnX,ColumnY.

## Contact History Table

**Description**

Specifies the name of the Contact History table for the audience level that is supported by this reporting schema.

**Default value**

UA\_ContactHistory

## Detailed Contact History Table

**Description**

Specifies the name of the Detailed Contact History table for the audience level that is supported by this reporting schema.

**Default value**

UA\_DtlContactHist

## Response History Table

**Description**

Specifies the name of the Response History table for the audience level that is supported by this reporting schema.

**Default value**

UA\_ResponseHistory

## Over Time Variations

**Description**

Specifies the calendar time periods that are used by the "over time" reports supported by this schema.

**Default value**

Day, Month

#### Valid Values

Day, Week, Month, Quarter, Year

## Reports | Schemas | Campaign | [schema name] | Columns | [Contact Metric]

Use the Reports | Schemas | Campaign | [schema name] | Columns | [Contact Metric] property to add contact metrics to the Campaign Performance or Offer Performance reporting schemas.

### Column Name

#### Description

Specifies the name to use in the reporting view or table for the column that is specified in the Input Column Name field.

#### Default value

[CHANGE ME]

#### Valid Values

The name can be no longer than 18 characters, it must be in all uppercase letters, and it cannot have spaces.

### Function

#### Description

Specifies how the contact metric is determined or calculated.

#### Default value

count

#### Valid Values

count, count distinct, sum, min, max, average

### Input Column Name

#### Description

The name of the column that provides the contact metric you are adding to this reporting schema.

#### Default value

[CHANGE ME]

#### Valid Values

The name of the column in the Contact History and Detailed Contact History tables.

### Control Treatment Flag

#### Description

If you use the sample IBM Cognos reports or create your own custom reports that include control groups, then each contact metric must have two columns in the reporting schema. One column represents the metric for the control group and the other column represents the metric for the target group. The value in **Control Treatment Flag** specifies whether the column in the view represents the control group or the target group.

If your reports do not include control groups, you do not need the second column for the control group.

#### **Default value**

0

#### **Valid Values**

- 0: the column represents the target group
- 1: the column represents the control group

### **Reports | Schemas | Campaign | [schema name] | Columns | [Response Metric]**

Use the **Reports | Schemas | Campaign | [schema name] | Columns | [Response Metric]** property to add the response metrics that you want to include in your reports to the Campaign Performance or Offer Performance reporting schemas.

#### **Column Name**

##### **Description**

Specifies the name to use in the reporting view or table for the column that is specified in the **Input Column Name** field.

##### **Default value**

[CHANGE ME]

##### **Valid Values**

The name can be no longer than 18 characters, it must be in all uppercase letters, and it cannot have spaces.

#### **Function**

##### **Description**

Specifies how the response metric is determined or calculated.

##### **Default value**

count

##### **Valid Values**

count, count distinct, sum, min, max, average

#### **Input Column Name**

##### **Description**

The name of the column that provides the response metric you are adding to this reporting schema.

##### **Default value**

[CHANGE ME]

##### **Valid Values**

The name of the column in the Response History table.

#### **Control Treatment Flag**

##### **Description**

If you use the standard IBM Cognos reports or create your own custom reports that include control groups, then each response metric must have two columns in the reporting schema. One column represents the response from the control group and the other column represents the response from the target group. The value in **Control Treatment Flag** specifies whether the column in the view represents the control group or the target group.

If your reports do not include control groups, you do not need the second column for the control group.

#### Default value

0

#### Valid Values

- 0: the column represents the target group
- 1: the column represents the control group

## Reports | Schemas | Campaign | Campaign Performance

The Campaign Performance schema yields contact and response history metrics at the campaign, campaign-offer, and campaign-cell level.

### Audience Key

#### Description

Specifies the name of the column that is the Audience Key for the audience level that is supported by this reporting schema.

#### Default value

CustomerID

#### Valid Values

A string value no longer than 255 characters.

If the key includes more than one column, use commas between the column names. For example, ColumnX,ColumnY.

### Contact History Table

#### Description

Specifies the name of the Contact History table for the audience level that is supported by this reporting schema.

#### Default value

UA\_ContactHistory

### Detailed Contact History Table

#### Description

Specifies the name of the Detailed Contact History table for the audience level that is supported by this reporting schema.

#### Default value

UA\_DtlContactHist

### Response History Table

#### Description

Specifies the name of the Response History table for the audience level that is supported by this reporting schema.

**Default value**

UA\_ResponseHistory

## Over Time Variations

**Description**

Specifies the calendar time periods that are used by the "over time" reports supported by this schema.

**Default value**

Day, Month

**Valid Values**

Day, Week, Month, Quarter, Year

## Reports | Schemas | Campaign | Campaign Offer Response Breakout

The Campaign Offer Response Breakout schema supports reporting on campaign-detailed responses, which are broken out by response type and by offer data. This schema template gives different response counts for each custom Response Type for campaigns and offers grouped by campaign.

This schema

### Response History Table

**Description**

Specifies the name of the Response History table for the audience level that is supported by this reporting schema.

**Default value**

UA\_ResponseHistory

## Reports | Schemas | Campaign | Campaign Offer Response Breakout | Columns | [Response Type]

Use the Reports | Schemas | Campaign | Campaign Offer Response Breakout | Columns | [Response Type] property to add any custom response types that you want to include in your reports to the reporting schema.

### Column Name

**Description**

Specifies the name to use in the reporting view or table for the column that is specified in the Response Type Code field.

**Default value**

[CHANGE ME]

**Valid Values**

The name can be no longer than 18 characters, it must be in all uppercase letters, and it cannot have spaces.

## **Response Type Code**

### **Description**

The response type code for the specified response type. This value is held in the ResponseTypeCode column in the UA\_UsrResponseType table.

### **Default value**

[CHANGE ME]

### **Valid Values**

The example response type codes are as follows:

- EXP (explore)
- CON (consider)
- CMT (commit)
- FFL (fulfill)
- USE (use)
- USB (unsubscribe)
- UKN (unknown)

Your Campaign installation may have additional custom response type codes.

## **Control Treatment Flag**

### **Description**

If you use the standard IBM Cognos reports provided in the IBM EMM Reports Pack or custom reports that include control groups, then each response type must have two columns in the reporting schema. One column represents the response type from the control group and the other column represents the response type from the target group. The value in **Control Treatment Flag** specifies whether the column in the view represents the control group or the target group.

If your reports do not include control groups, you do not need the second column for the control group.

### **Default value**

0

### **Valid Values**

- 0: the column represents the target group
- 1: the column represents the control group

## **Reports | Schemas | Campaign | Campaign Offer Contact Status Breakout**

The Campaign Offer Contact Status Breakout schema supports reporting on campaign-detailed contacts, which are broken out by contact status type and by offer data. This schema template gives different contact counts for each custom Contact Status Type for campaigns and offers grouped by campaign.

By default, none of the example Campaign reports use this schema.

## **Audience Key**

### **Description**

Specifies the name of the column that is the Audience Key for the audience level that is supported by this reporting schema.

### **Default value**

CustomerID

#### Valid Values

A string value no longer than 255 characters.

If the key includes more than one column, use commas between the column names. For example, ColumnX,ColumnY.

### Contact History Table

#### Description

Specifies the name of the Contact History table for the audience level that is supported by this reporting schema.

#### Default value

UA\_ContactHistory

### Detailed Contact History Table

#### Description

Specifies the name of the Detailed Contact History table for the audience level that is supported by this reporting schema.

#### Default value

UA\_DtlContactHist

## Reports | Schemas | Campaign | Campaign Offer Contact Status Breakout | Columns | [Contact Status]

Use the Reports | Schemas | Campaign | Campaign Offer Contact Status Breakout | Columns | [Contact Status] to add the contact status that you want to include in your reports to the reporting schemas.

### Column Name

#### Description

Specifies the name to use in the reporting view or table for the column that is specified in the Contact Status field.

#### Default value

[CHANGE ME]

#### Valid Values

The name can be no longer than 18 characters, it must be in all uppercase letters, and it cannot have spaces.

### Contact Status Code

#### Description

The name of the contact status code. This value is held in the ContactStatusCode column in the UA\_ContactStatus table.

#### Default value

[CHANGE ME]

#### Valid Values

The example contact status types are as follows.

- CSD (campaign send)
- DLV (delivered)
- UNDLV (undelivered)
- CTR (control)

Your Campaign installation may have additional custom contact status types.

## **Reports | Schemas | Campaign | Campaign Custom Attributes | Columns | [Campaign Custom Column]**

Use the **Reports | Schemas | Campaign | Campaign Custom Attributes | Columns | [Campaign Custom Column]** property to add any custom campaign attributes that you want to include in your reports to the reporting schema.

### **Column Name**

#### **Description**

Specifies the name to use in the reporting view or table for the attribute that is identified in the **Attribute ID** field.

#### **Default value**

[CHANGE ME]

#### **Valid Values**

The name can be no longer than 18 characters, it must be in all uppercase letters, and it cannot have spaces.

### **Attribute ID**

#### **Description**

The value from the attribute's AttributeID column in the **UA\_CampAttribute** table.

#### **Default value**

0

### **Value Type**

#### **Description**

The data type of the campaign attribute.

#### **Default value**

StringValue

#### **Valid Values**

StringValue, NumberValue, DatetimeValue

If this campaign attribute holds a currency value, select **NumberValue**.

If this campaign attribute's **Form Element Type** was set to **Select Box - String** in Campaign, select **StringValue**.

## **Reports | Schemas | Campaign | Campaign Custom Attributes | Columns | [Offer Custom Column]**

Use the **Reports | Schemas | Campaign | Campaign Custom Attributes | Columns | [Offer Custom Column]** property to add any custom offer attributes that you want to include in your reports to the reporting schema.

Use this form to add

## Column Name

### Description

Specifies the name to use in the reporting view or table for the attribute that is identified in the **Attribute ID** field.

### Default value

[CHANGE ME]

### Valid Values

The name can be no longer than 18 characters, it must be in all uppercase letters, and it cannot have spaces.

## Attribute ID

### Description

The value from the attribute's AttributeID column in the **UA\_OfferAttribute** table.

### Default value

0

## Value Type

### Description

The data type of the offer attribute.

### Default value

StringValue

### Valid Values

StringValue, NumberValue, DatetimeValue

If this offer attribute holds a currency value, select NumberValue.

If this offer attribute's **Form Element Type** was set to Select Box - String in Campaign, select StringValue.

## Reports | Schemas | Campaign | Campaign Custom Attributes | Columns | [Cell Custom Column]

Use the **Reports | Schemas | Campaign | Campaign Custom Attributes | Columns | [Cell Custom Column]** property to add any custom cell attributes that you want to include in your reports to the reporting schema.

## Column Name

### Description

Specifies the name to use in the reporting view or table for the attribute that is identified in the **Attribute ID** field.

### Default value

[CHANGE ME]

### Valid Values

The name can be no longer than 18 characters, it must be in all uppercase letters, and it cannot have spaces.

## Attribute ID

### Description

The value from the attribute's AttributeID column in the **UA\_CellAttribute** table.

### Default value

0

## Value Type

### Description

The data type of the cell attribute.

### Default value

StringValue

### Valid Values

StringValue, NumberValue, DatetimeValue

## Reports | Schemas | Interact

The Interact reporting schemas reference three separate databases: the design time, runtime, and learning databases. Use the **Reports | Schemas | Interact** property to specify the JNDI names of the data sources for those databases.

The data sources that are specified on this page must exist if you want to use the Reporting SQL generation tool to generate scripts that create reporting tables. The SQL generation tool can generate scripts that create reporting views without these data sources, but it cannot validate the scripts.

The database type of the data sources must match the database type that you select when you generate the SQL scripts for the views or reporting tables.

## Interact Design Datasource (JNDI)

### Description

Specifies the name of the JNDI data source that identifies the Interact design time database, which is also the Campaign system tables.

### Default value

campaignPartition1DS

## Interact Runtime Datasource (JNDI)

### Description

Specifies the name of the JNDI data source that identifies the Interact runtime database.

### Default value

InteractRTDS

## Interact Learning Datasource (JNDI)

### Description

Specifies the name of the JNDI data source that identifies the Interact learning database.

**Default value**

InteractLearningDS

## Reports | Schemas | Interact | Interact Performance

The Interact Performance schema yields contact and response history metrics at the channel, channel-offer, channel-segment, channel-interaction point, interactive cell, interactive cell-offer, interactive cell-interaction point, interactive offer, interactive offer-cell, and interactive offer-interaction point levels.

**Audience Key****Description**

Specifies the name of the column that is the Audience Key for the audience level that is supported by this reporting schema.

**Default value**

CustomerID

**Valid Values**

A string value no longer than 255 characters.

If the key includes more than one column, use commas between the column names. For example, ColumnX,ColumnY.

## Detailed Contact History Table

**Description**

Specifies the name of the Detailed Contact History table for the audience level that is supported by this reporting schema.

**Default value**

UA\_DtlContactHist

## Response History Table

**Description**

Specifies the name of the Response History table for the audience level that is supported by this reporting schema.

**Default value**

UA\_ResponseHistory

## Over Time Variations

**Description**

Specifies the calendar time periods that are used by the "over time" reports supported by this schema.

**Default value**

Hour, Day

**Valid Values**

Hour, Day, Week, Month, Quarter, Year

## **Reports | Schemas | eMessage**

The Reports | Schemas | eMessage property specifies the name of the data source that identifies the eMessage tracking tables, which are in the Campaign system tables.

### **eMessage Tracking Datasource (JNDI)**

#### **Description**

Specifies the name of the JNDI data source that identifies the eMessage tracking tables, which are in the Campaign system tables. This data source must exist if you want to use the Reports SQL generation tool to validate scripts that create reporting tables. The SQL generation tool can generate scripts that create reporting views without this data source, but it cannot validate them.

The database type of this data source must match the database type that you select when you generate the SQL scripts for the views or reporting tables.

#### **Default value**

`campaignPartition1DS`



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## Chapter 19. Special characters in IBM Campaign object names

Some special characters are not supported in any IBM Campaign object names. In addition, some objects have specific naming restrictions.

**Note:** If you pass object names to your database (for example, if you use a user variable that contains a flowchart name), you must ensure that the object name contains only characters supported by your particular database. Otherwise, you will receive a database error.

---

### Special characters not supported

The following special characters are not supported in the names of campaigns, flowcharts, folders, offers, offer lists, segments, or sessions.

*Table 57. Special characters not supported*

| Character | Description           |
|-----------|-----------------------|
| %         | Percent               |
| *         | Asterisk              |
| ?         | Question mark         |
|           | Pipe (vertical bar)   |
| :         | Colon                 |
| ,         | Comma                 |
| <         | Less than symbol      |
| >         | Greater than symbol   |
| &         | Ampersand             |
| \         | Backward slash        |
| /         | Forward slash         |
| "         | Double quotation mark |
| Tab       | Tab                   |

---

### Objects with no naming restrictions

The following objects in Campaign have no restrictions for characters used in their names:

- audience levels (audience level *field* names have naming restrictions)
- custom attribute *display* names (custom attribute *internal* names have naming restrictions)
- offer templates

---

### Objects with specific naming restrictions

The following objects in Campaign have specific restrictions on their names:

- Custom attribute *internal* names (custom attribute *display* names have no naming restrictions)
- Audience level *field* names (audience level names have no naming restrictions)
- Cells
- Derived fields
- User table and field names

For these objects, names must:

- Contain only alphabetic or numeric characters, or the underscore (\_) character
- Start with an alphabetic character

For non-Latin-based languages, Campaign supports all the characters that are supported by the string encoding configured.

**Note:** Derived field names have additional restrictions. For details, see “Naming restrictions for derived fields.”

## Naming restrictions for derived fields

Derived field names have the following restrictions:

- They cannot be the same as either of the following types of names:
  - A database keyword (such as INSERT, UPDATE, DELETE, or WHERE)
  - A field in a mapped database table
- They cannot use the words Yes or No.

If you do not follow these naming restrictions, database errors and disconnects may result when these derived fields are called.

**Note:** Derived field names also have specific character restrictions. For details, see Chapter 19, “Special characters in IBM Campaign object names,” on page 317

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## Chapter 20. Internationalization and encodings

This section provides information on character encodings and language-sensitive database considerations, and lists the encodings supported by Campaign.

### Character encodings in Campaign

This topic describes the encodings that Campaign supports.

On most operating systems, Campaign uses the GNU iconv library. Note that **IBM does not ship an iconv for AIX installations**. For an AIX system, you must obtain the appropriate character sets. For a list, see the National Language Support Guide and Reference:

- [http://moka.ccr.jussieu.fr/doc\\_link/en\\_US/a\\_doc\\_lib/aixprggd/nlsgdrf/iconv.htm#d722e3a267mela](http://moka.ccr.jussieu.fr/doc_link/en_US/a_doc_lib/aixprggd/nlsgdrf/iconv.htm#d722e3a267mela)
- <http://publib.boulder.ibm.com/infocenter/pseries/v5r3/index.jsp?topic=/com.ibm.aix.nls/doc/nlsgdrf/nlsgdrf.htm>

This section lists the encodings that are supported by Campaign. The values in these lists are valid values for setting the Campaign internationalization parameters listed in “Set Campaign language and locale property values” on page 185. Note the following:

- Each bullet within an encoding group is a space-separated list of different names for the same encoding. Each name in a bullet with multiple names is an alias for the other encodings in the group. You can set the Campaign configuration parameters to any of the values in a group, depending on how your system uses the encodings.
- When setting values for the Campaign StringEncoding configuration parameters, the pseudo-encoding WIDEUTF-8 is the recommended value in most cases. However, you can use one of the encodings included in the following lists. Additionally, if the database is DB2 or SQL Server, you should use a code page rather than one of the encodings in this list. For details, see the context help or the *Marketing Platform Administrator’s Guide*.
- Campaign uses two character encodings that are treated slightly differently than other encodings: "ASCII" and "UTF-8." Both are case-sensitive. These encodings are accepted on all platforms including AIX. They have slightly different behaviors in Campaign for column widths during table mapping, and for transcoding operations.

Some possible locale abbreviations are shown in parentheses: Arabic (ar), Armenian (hy), Chinese (zh), English (en), French (fr), Georgian (ka), Greek (el), Hebrew (he), Icelandic (is), Japanese (ja), Korean (ko), Lao (lo), Romanian (ro), Thai (th), Turkish (tr), Vietnamese (vi).

### Western Europe

- CP819 IBM819 ISO-8859-1 ISO-IR-100 IS08859-1 ISO\_8859-1 ISO\_8859-1:1987 L1 LATIN1 CSISOLATIN1
- CP1252 MS-ANSI WINDOWS-1252
- 850 CP850 IBM850 CSPC850MULTILINGUAL
- MAC MACINTOSH MACROMAN CSMACINTOSH
- NEXTSTEP
- HP-ROMAN8 R8 ROMAN8 CSHROMAN8

### Unicode encodings

- ISO-10646-UCS-2 UCS-2 CSUNICODE
- UCS-2BE UNICODE-1-1 UNICODEBIG CSUNICODE11

- UCS-2LE UNICODELITTLE
- ISO-10646-UCS-4 UCS-4 CSUCS4
- UTF-8
- UCS-4BE
- UCS-4LE
- UTF-16
- UTF-16BE
- UTF-16LE
- UTF-32
- UTF-32BE
- UTF-32LE
- UNICODE-1-1-UTF-7 UTF-7 CSUNICODE11UTF7
- UCS-2-INTERNAL
- UCS-2-SWAPPED
- UCS-4-INTERNAL
- UCS-4-SWAPPED
- JAVA
- C99

## **Arabic**

- ARABIC ASMO-708 ECMA-114 ISO-8859-6 ISO-IR-127 IS08859-6 ISO\_8859-6 ISO\_8859-6:1987 CSISOLATINARABIC
- CP1256 MS-ARAB WINDOWS-1256
- MACARABIC
- CP864 IBM864 CSIBM864

## **Armenian**

- ARMSCII-8

## **Baltic Rim**

- CP1257 WINBALTRIM WINDOWS-1257
- CP775 IBM775 CSPC775BALTIC
- ISO-8859-13 ISO-IR-179 IS08859-13 ISO\_8859-13 L7 LATIN7

## **Celtic**

- ISO-8859-14 ISO-CELTIC ISO-IR-199 IS08859-14 ISO\_8859-14 ISO\_8859-14:1998 L8 LATIN8

## **Central Europe**

- ISO-8859-2 ISO-IR-101 IS08859-2 ISO\_8859-2 ISO\_8859-2:1987 L2 LATIN2 CSISOLATIN2CP1250 MS-EE WINDOWS-1250
- MACCENTRALEUROPE
- 852 CP852 IBM852 CSPCP852
- MACCROATIAN

## **Chinese (both Simplified and Traditional)**

- ISO-2022-CN CSISO2022CN
- ISO2022CNISO-2022-CN-EXT

## **Chinese (Simplified)**

- CN GB\_1988-80 ISO-IR-57 ISO646-CN CSIS057GB1988
- CHINESE GB\_2312-80 ISO-IR-58 CSIS058GB231280
- CN-GB-ISOIR165 ISO-IR-165
- CN-GB EUC-CN EUCCN GB2312 CSGB2312
- CP936 GBK
- GB18030
- HZ HZ-GB-2312

## **Chinese (Traditional)**

- EUC-TW EUCTW CSEUCTWB
- IG-5 BIG-FIVE BIG5 BIGFIVE CN-BIG5 CSBIG5
- CP950
- BIG5-HKSCS BIG5HKSCS

## **Cyrillic**

- CYRILLIC ISO-8859-5 ISO-IR-144 ISO8859-5 ISO\_8859-5 ISO\_8859-5:1988 CSISOLATINCYRILLIC
- CP1251 MS-CYRL WINDOWS-1251
- MACCYRILLIC
- KOI8-R CSKOI8R
- KOI8-U
- KOI8-RU
- KOI8-T
- 866 CP866 IBM866 CSIBM866
- 855 CP855 IBM855 CSIBM855
- CP1125 ("PC, Cyrillic, Ukrainian")
- MACUKRAINE

## **English**

- ANSI\_X3.4-1968 ANSI\_X3.4-1986 ASCII CP367 IBM367 ISO-IR-6 ISO646-US ISO\_646.IRV:1991 US
- US-ASCII CSASCII
- 437 CP437 IBM437 CSPC8CODEPAGE437

## **Georgian**

- GEORGIAN-ACADEMY
- GEORGIAN-PS

## **Greek**

- CP1253 MS-GREEK WINDOWS-1253
- ECMA-118 ELOT\_928 GREEK GREEK8 ISO-8859-7 ISO-IR-126 ISO8859-7 ISO\_8859-7 ISO\_8859-7:1987
- CSISOLATINGREEK
- MACGREEK

- CP737869 CP-GR CP
- 869 IBM869 CSIBM869

## **Hebrew**

- HEBREW ISO-8859-8 ISO-IR-138 IS08859-8 ISO\_8859-8 ISO\_8859-8:1988 CSISOLATINHEBREW
- CP1255 MS-HEBR WINDOWS-1255
- 862 CP862 IBM862 CSPC862LATINHEBREW
- MACHEBREW

## **Icelandic**

- MACICELAND
- 861 CP-IS CP861 IBM861 CSIBM861

## **Japanese**

- JISX0201-1976 JIS\_X0201 X0201 CSHALFWIDTHKATAKANA
- ISO-IR-87 JIS0208 JIS\_C6226-1983 JIS\_X0208 JIS\_X0208-1983 JIS\_X0208-1990 X0208 CSIS087JISX0208
- ISO-IR-159 JIS\_X0212 JIS\_X0212-1990 JIS\_X0212.1990-0 X0212 CSIS0159JISX02121990
- EUC-JP EUCJP EXTENDED\_UNIX\_CODE\_PACKED\_FORMAT\_FOR\_JAPANESE CSEUCPKDFMTJAPANESE
- MS\_KANJI SHIFT-JIS SHIFT\_JIS SJIS CSSHIFTJI
- ISO-IR-14 ISO646-JP JIS\_C6220-1969-RO JP CSIS014JISC6220R0
- CP932
- ISO-2022-JP CSIS02022JP
- ISO-2022-JP-1
- ISO-2022-JP-2 CSIS02022JP2

## **Korean**

- EUC-KR EUCKR CSEUCKR
- CP949 UHC
- ISO-IR-149 KOREAN KSC\_5601 KS\_C\_5601-1987 KS\_C\_5601-1989 CSKSC56011987
- CP1361 JOHAB
- ISO-2022-KR CSIS02022KR

## **Lao**

Note that Lao uses the same alphabet as Thai.

- MULELAO-1
- CP1133 IBM-CP1133

## **Northern Europe**

- ISO-8859-4 ISO-IR-110 IS08859-4 ISO\_8859-4 ISO\_8859-4:1988 L4 LATIN4 CSISOLATIN4
- ISO-8859-10 ISO-IR-157 IS08859-10 ISO\_8859-10 ISO\_8859-10:1992 L6 LATIN6 CSISOLATIN6

## **Romanian**

- MACROMANIA

## Southern Europe

- ISO-8859-3 ISO-IR-109 ISO8859-3 ISO\_8859-3 ISO\_8859-3:1988 L3 LATIN3 CSISOLATIN3
- CP853

## Thai

- MACTHAI
- ISO-IR-166 TIS-620 TIS620 TIS620-0 TIS620.2529-1 TIS620.2533-0 TIS620.2533-1
- CP874 WINDOWS-874

## Turkish

- CP1254 MS-TURK WINDOWS-1254
- MACTURKISH
- 857 CP857 IBM857 CSIBM857
- ISO-8859-9 ISO-IR-148 ISO8859-9 ISO\_8859-9 ISO\_8859-9:1989 L5 LATIN5 CSISOLATIN5

## Vietnamese

- CP1258 WINDOWS-1258
- TCVN TCVN-5712 TCVN5712-1 TCVN5712-1:1993
- VISCII VISCI1.1-1 CSVVISCI

## Miscellaneous

- ISO-8859-15 ISO-IR-203 ISO8859-15 ISO\_8859-15 ISO\_8859-15:1998
- ISO-8859-16 ISO-IR-226 ISO8859-16 ISO\_8859-16 ISO\_8859-16:2000
- CP858(IBM:"Multilingual with euro")
- 860 (IBM: "Portugal - Personal Computer")CP860 IBM860 CSIBM860
- 863 (IBM: "Canadian French - Personal Computer") CP863 IBM863 CSIBM863
- 865 (IBM: "Nordic - Personal Computer")CP865 IBM865 CSIBM865

---

## Date and time formats

Use the information in the following sections to determine how to configure the date and time format configuration properties `DateFormat`, `DateOutputFormatString`, `DateTimeFormat`, and `DateTimeOutputFormatString`.

## Formats for `DateFormat` and `DateTimeFormat`

If you are not configuring Campaign for multiple locales, you can set the values for `DateFormat` and `DateTimeFormat` configuration parameters for any of the formats specified in the DATE macro, as shown in the following table.

However, if you need to configure Campaign for multiple locales (if you have users with various languages and locales), DO NOT use date formats that contain 3-letter months (MMM), %b (abbreviated month name), or %B (full month name). Instead, use a delimited or fixed format that has a numeric value for the month. For more details about the multi-locale feature, see “About the multi-locale feature” on page 182.

*Table 58. Date formats*

| Format | Description   | Example(s)          |
|--------|---------------|---------------------|
| MM     | 2-digit month | 01, 02, 03, ..., 12 |

*Table 58. Date formats (continued)*

| Format                                               | Description                                   | Example(s)                     |
|------------------------------------------------------|-----------------------------------------------|--------------------------------|
| MMDD                                                 | 2-digit month and 2-digit day                 | March 31 is 0331               |
| MMDDYY                                               | 2-digit month, 2-digit day, and 2-digit year  | March 31, 1970 is 033170       |
| MMDDYYYY                                             | 2-digit month, 2-digit day, and 4-digit year  | March 31, 1970 is 03311970     |
| DELIM_M_D<br>For DateFormat, use<br>DT_DELIM_M_D     | Any delimited month followed by day           | March 31, 3/31, or 03-31       |
| DELIM_M_D_Y<br>For DateFormat, use<br>DT_DELIM_M_D_Y | Any delimited month, day, and year            | March 31, 1970 or 3/31/70      |
| DELIM_Y_M<br>For DateFormat, use<br>DT_DELIM_Y_M     | Any delimited year followed by month          | 1970 March, 70-3, 1970/3       |
| DELIM_Y_M_D<br>For DateFormat, use<br>DT_DELIM_Y_M_D | Any delimited year, month, and day            | 1970 Mar 31 or 70/3/31         |
| YYMMM                                                | 2-digit year and 3-letter month               | 70MAR                          |
| YYMMMD                                               | 2-digit year, 3-letter month, and 2-digit day | 70MAR31                        |
| YY                                                   | 2-digit year                                  | 70                             |
| YYMM                                                 | 2-digit year and 2-digit month                | 7003                           |
| YYMMDD                                               | 2-digit year, 2-digit month, and 2-digit day  | 700331                         |
| YYYYMM                                               | 4-digit year and 3-letter month               | 1970MAR                        |
| YYYYMMDD                                             | 4-digit year, 3-letter month, and 2-digit day | 1970MAR31                      |
| YYYY                                                 | 4-digit year                                  | 1970                           |
| YYYYMM                                               | 4-digit year and 2-digit month                | 197003                         |
| YYYYMMDD                                             | 4-digit year, 2-digit month, and 2-digit day  | 19700331                       |
| DELIM_M_Y<br>For DateFormat, use<br>DT_DELIM_M_Y     | Any delimited month followed by year          | 3-70, 3/70, Mar 70, March 1970 |
| DELIM_D_M<br>For DateFormat, use<br>DT_DELIM_D_M     | Any delimited day followed by month           | 31-3, 31/3, 31 March           |

Table 58. Date formats (continued)

| Format                                               | Description                                   | Example(s)                                                      |
|------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------|
| DELIM_D_M_Y<br>For DateFormat, use<br>DT_DELIM_D_M_Y | Any delimited day, month, and year            | 31-MAR-70, 31/3/1970, 31 03 70                                  |
| DD                                                   | 2-digit day                                   | 31                                                              |
| DDMMM                                                | 2-digit day and 3-letter month                | 31MAR                                                           |
| DDMMYY                                               | 2-digit day, 3-letter month, and 2-digit year | 31MAR70                                                         |
| DDMMYYYY                                             | 2-digit day, 3-letter month, and 4-digit year | 31MAR1970                                                       |
| DDMM                                                 | 2-digit day and 2-digit month                 | 3103                                                            |
| DDMMYY                                               | 2-digit day, 2-digit month, and 2-digit year  | 310370                                                          |
| DDMMYYYY                                             | 2-digit day, 2-digit month, and 4-digit year  | 31031970                                                        |
| MMYY                                                 | 2-digit month and 2-digit year                | 0370                                                            |
| MMYYYY                                               | 2-digit month and 4-digit year                | 031970                                                          |
| MMM                                                  | 3-letter month                                | MAR                                                             |
| MMMD                                                 | 3-letter month and 2-digit day                | MAR31                                                           |
| MMMDYY                                               | 3-letter month, 2-digit day, and 2-digit year | MAR3170                                                         |
| MMMDYYYY                                             | 3-letter month, 2-digit day, and 4-digit year | MAR311970                                                       |
| MMYY                                                 | 3-letter month and 2-digit year               | MAR70                                                           |
| MMYYYY                                               | 3-letter month and 4-digit year               | MAR1970                                                         |
| MONTH                                                | Month of the year                             | January, February, March, and so on or Jan, Feb, Mar, and so on |
| WEEKDAY                                              | Day of the week                               | Sunday, Monday, Tuesday, and so on (Sunday = 0)                 |
| WKD                                                  | Abbreviated day of the week                   | Sun, Mon, Tues, and so on (Sun = 0)                             |

## Formats for DateOutputFormatString and DateTimeOutputFormatString

If you are not configuring Campaign for multiple locales, you can set the values for DateOutputFormat and DateTimeOutputFormatConfiguration parameters for any of the formats specified for format\_str in the DATE\_FORMAT macro, as shown in the following table.

However, if you need to configure Campaign for multiple locales (that is, if you have users with various languages and locales), DO NOT use date formats that contain 3-letter months (MMM), %b (abbreviated month name), or %B (full month name). Instead, you should use one of the delimited or fixed formats that have a numeric value for the month. For more details about the multi-locale feature, see “About the multi-locale feature” on page 182.

%a - Abbreviated weekday name

%A - Full weekday name

%b - Abbreviated month name

%B - Full month name

%c - Date and time representation appropriate for locale

%d - Day of month (01 - 31)

%H - Hour in 24-hour format (00 - 23)

%I - Hour in 12-hour format (01 - 12)

%j - Day of year (001 - 366)

%m - Month number (01 - 12)

%M - Minute (00 - 59)

%p - Current locale's AM/PM indicator for 12-hour clock

%S - Second (00 - 59)

%U - Week of year, with Sunday as first day of week (00 - 51)

%w - Weekday (0 - 6; Sunday is 0)

%W - Week of year, with Monday as first day of week (00 - 51)

%x - Date representation for current locale

%X - Time representation for current locale

%y - 2-digit year (00 - 99)

%Y - 4-digit year

%z, %Z - Time zone name or abbreviation; no output if time zone is unknown

%% - Percent sign

**Note:** Characters that are part of the format and are not preceded by a percent sign (%) are copied unchanged to the output string. The formatted string must fit in 16 bytes or less. Use the # character to eliminate any leading 0. For example, %d produces 2-digit numbers in the range (01 - 31), while %#d produces 1- or 2-digit numbers as appropriate (1 - 31). Similarly, %m gives (01 - 12) while %#m gives (1 - 12).

---

## Chapter 21. Campaign Error Codes

Campaign notifies users of error events when they occur with error messages that consist of a code number and error text.

Campaign is a Web-based client-server application with two servers and a number of environment variables that you must configure for it to work properly.

If you see an error message that says you have invalid user access rights, you may not have the correct privileges assigned in Marketing Platform to perform that action. For more information, see the *Marketing Platform Administrator's Guide*.

If you encounter errors while using Campaign, try reading the descriptions and applying the solutions in this section before contacting IBM Technical Support. If an error does not appear here, or if a solution fails, contact your administrator or contact IBM Technical Support.

---

### List of IBM Campaign error codes

The following table lists the error messages that are generated by IBM Campaign.

*Table 59. IBM Campaign error codes*

| Code | Error Description                                                 |
|------|-------------------------------------------------------------------|
| 301  | Unable to allocate requested memory.                              |
| 303  | Name conflicts with a built-in function name operator or keyword. |
| 304  | Name is too long or contains invalid character(s).                |
| 305  | Named variable has no value assigned.                             |
| 306  | Syntax error in expression.                                       |
| 308  | Error loading saved expression from file (large mem).             |
| 309  | Error loading saved expression from file (unknown function).      |
| 310  | Error loading saved expression from file (rand obj).              |
| 311  | Error loading saved object from file (invalid ID).                |
| 312  | Error loading saved expression from file (stack).                 |
| 314  | Error saving object to file (invalid ID).                         |
| 315  | Error saving expression to file (large mem).                      |
| 316  | Consecutive operators in expression.                              |
| 317  | Operator syntax error.                                            |

*Table 59. IBM Campaign error codes (continued)*

| Code | Error Description                                               |
|------|-----------------------------------------------------------------|
| 318  | Parenthesis missing.                                            |
| 319  | Parentheses mismatched.                                         |
| 320  | Unknown expression.                                             |
| 321  | No name given.                                                  |
| 322  | No expression following an equal sign.                          |
| 323  | Ambiguous field name.                                           |
| 324  | Can't sort more than $2^{16}$ points.                           |
| 325  | Error accessing virtual memory (stat=0).                        |
| 328  | Matrix multiply dimension mismatch.                             |
| 329  | Matrix multiply dimension too big.                              |
| 330  | Singular matrix error.                                          |
| 331  | Invalid number of arguments.                                    |
| 332  | Argument(s) must be scalar number(s).                           |
| 333  | Argument must be greater than 0.                                |
| 334  | Values of argument(s) are invalid.                              |
| 335  | Values of argument(s) must be between -1 and 1.                 |
| 336  | Dimensionality of argument(s) is invalid for the function.      |
| 338  | Length of arguments must be equal.                              |
| 339  | Dimensionality of arguments must be equal.                      |
| 341  | Standard deviation or other statistical calculation is invalid. |
| 342  | Only vector is allowed for the 1st argument.                    |
| 343  | Supplied argument must be integer.                              |
| 345  | Expression is mathematically undefined.                         |
| 346  | Unable to get training pattern.                                 |
| 348  | Supplied keyword is not appropriate for this function.          |

Table 59. IBM Campaign error codes (continued)

| Code | Error Description                                               |
|------|-----------------------------------------------------------------|
| 349  | Floating pointer value overflow error.                          |
| 350  | Trying to take square root of negative number.                  |
| 353  | Function's total returned string size is too large.             |
| 354  | String type not allowed in one or more arguments.               |
| 356  | Row/column index is not valid.                                  |
| 357  | Mixing numbers and text columns not allowed.                    |
| 358  | String quote mismatch.                                          |
| 359  | Expression is too complex.                                      |
| 360  | String length too long.                                         |
| 361  | Number parsing code not valid.                                  |
| 362  | This function cannot process numbers.                           |
| 363  | String quote mismatched or missing.                             |
| 364  | This function generates too much data.                          |
| 365  | Too many outputs from this function.                            |
| 367  | Multiple-column outputs not allowed in recursive expressions.   |
| 368  | Recursive function trying to access future values (not causal). |
| 369  | Inputs from the first row contains error.                       |
| 370  | Output column(s) too long.                                      |
| 371  | Input/Output dimension of algorithm is corrupted.               |
| 372  | Recursive variable invalid                                      |
| 373  | Internal Only: Null ParseTree!                                  |
| 377  | Unknown value in substitution                                   |
| 381  | Error encountered interpreting variable type: 'Money'           |
| 382  | Error encountered interpreting Variable Type: 'Telephone'       |
| 383  | Error encountered interpreting Variable Type: 'Date'            |

*Table 59. IBM Campaign error codes (continued)*

| Code | Error Description                                                             |
|------|-------------------------------------------------------------------------------|
| 384  | Error encountered interpreting Variable Type: 'Time'                          |
| 393  | Boolean expression may be compared only to 1 or 0                             |
| 394  | Values out of range for one or more arguments.                                |
| 395  | A numeric column must be specified with any keyword other than CountOf.       |
| 396  | BETWEEN syntax is: <val> BETWEEN <val1> AND <val2>                            |
| 397  | SUBSTR[ING] syntax is: SUBSTR[ING](<string><offset><size>)                    |
| 398  | Option [OutputValue] is only allowed for MinOf, MaxOf, and MedianOf keywords. |
| 399  | Null value found.                                                             |
| 450  | Unable to change file permissions (chmod).                                    |
| 451  | Unable to retrieve file attributes (stat).                                    |
| 452  | Unable to remove file.                                                        |
| 453  | Unable to create memory object; check log file for memory or file errors.     |
| 454  | Unable to lock memory object page; check log file for memory or file errors.  |
| 455  | Unable to load memory object; check log file for memory or file errors.       |
| 456  | Unable to create I/O object; check log file for memory or file errors.        |
| 457  | Unable to create I/O object; check log file for memory errors.                |
| 458  | Invalid supporting file extension; this may indicate a corrupted file.        |
| 459  | Invalid UTF-8 character encountered.                                          |
| 460  | Unable to convert from wide character to native encoding.                     |
| 461  | Unable to convert from native encoding to wide character.                     |
| 462  | Unable to create directory.                                                   |
| 463  | Unable to remove directory.                                                   |
| 500  | Internal parse tree construction error.                                       |
| 600  | Internal error: Configuration root not specified.                             |
| 601  | Configuration server URL is not specified.                                    |

*Table 59. IBM Campaign error codes (continued)*

| Code | Error Description                                                            |
|------|------------------------------------------------------------------------------|
| 602  | Specified configuration category not found.                                  |
| 603  | Specified configuration property must have absolute file path.               |
| 604  | Invalid response from configuration server.                                  |
| 605  | INTERNAL ERROR: Requested configuration path is different from current root. |
| 606  | Configuration categories and properties cannot have empty name.              |
| 607  | Configuration category name cannot contain forward slash.                    |
| 608  | Specified configuration property must have relative file path.               |
| 609  | INTERNAL ERROR: Partition name not specified.                                |
| 610  | Cannot determine default partition.                                          |
| 611  | No partition with the given name.                                            |
| 612  | No partitions defined at all.                                                |
| 614  | Invalid parameters specified in config.xml.                                  |
| 620  | INTERNAL ERROR: Security manager is already initialized.                     |
| 621  | INTERNAL ERROR: Failed to initialize security manager; Invalid parameters.   |
| 622  | INTERNAL ERROR: Invalid result set name specified.                           |
| 623  | User is not mapped to any partition.                                         |
| 624  | User is mapped to multiple partitions.                                       |
| 625  | User is not mapped to the specified partition.                               |
| 626  | User is not authorized to access the application.                            |
| 700  | Out of memory.                                                               |

*Table 59. IBM Campaign error codes (continued)*

| Code | Error Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 701  | <p>Cannot open file.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> <li>IBM Campaign could not transcode a non-ASCII file name.</li> <li>IBM Campaign could not locate the specified file.</li> <li>IBM Campaign cannot open the file properly.</li> <li>A file could not be copied because it could not be opened.</li> </ul> <p>Suggested solutions:</p> <ul style="list-style-type: none"> <li>Verify the file exists in the expected location.</li> <li>Examine the log file for the name of the file causing the error.</li> <li>Ask your system administrator for assistance.</li> </ul> |
| 702  | File seek error.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 703  | File read error.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 704  | File write error.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 710  | Flowchart file data corrupted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 711  | File create error.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 723  | Error in one or more input variables to this function.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 761  | Out of disk space.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 768  | Error saving file.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 773  | Access denied.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 774  | INTERNAL HMEM ERROR: cannot flush memory when swapping is disabled.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 778  | Numerical error: Unknown floating point error.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 779  | Numerical error: Explicit generation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 780  | Numerical error: Invalid number.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 781  | Numerical error: Denormal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 782  | Numerical error: Division by zero.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 783  | Numerical error: Floating point overflow.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 784  | Numerical error: Floating point underflow.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

*Table 59. IBM Campaign error codes (continued)*

| Code | Error Description                                        |
|------|----------------------------------------------------------|
| 785  | Numerical error: Floating point round-off.               |
| 786  | Numerical error: Floating point unemulated.              |
| 787  | Numerical error: Square root of negative number.         |
| 788  | Numerical error: Stack overflow.                         |
| 789  | Numerical error: Stack underflow.                        |
| 790  | Internal Error.                                          |
| 967  | Data dictionary contains an invalid definition.          |
| 997  | Internal error: GIO stack overflow.                      |
| 998  | Error loading object: size check failed.                 |
| 999  | Extended Error                                           |
| 1400 | Row offset not found for given row                       |
| 1500 | Insufficient memory for this operation.                  |
| 1501 | Maximum histogram range exceeded                         |
| 1550 | Internal Error 1550:                                     |
| 1649 | Vector is not allowed for any argument.                  |
| 1650 | First parameter cannot be vector if COL keyword is used. |
| 1709 | Client/Server version mismatch.                          |
| 1710 | Unable to initialize sockets.                            |
| 1711 | Unable to create a socket.                               |

*Table 59. IBM Campaign error codes (continued)*

| Code | Error Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1712 | <p>Unable to connect to the specified server.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> <li>Your browser cannot connect to the Campaign server.</li> <li>Your browser cannot find the host name.</li> </ul> <p>Suggested solutions:</p> <ul style="list-style-type: none"> <li>Ask your network administrator to check that the server and client machines can 'ping' each other.</li> <li>Ask your Campaign administrator to check that the Campaign server machine does not use the port assigned to the Campaign listener process for another application.</li> <li>Try the steps that caused the error again. If the error occurs again, reboot your client machine, and ask your system administrator to reboot the Campaign server machine.</li> </ul>                                                                                                        |
| 1713 | Unable to send socket data.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1714 | <p>Unable to receive socket data.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> <li>The number of bytes received from socket does not match the expected number.</li> <li>IBM Campaign timed out waiting for data from the socket.</li> <li>There was a socket error when sending messages.</li> </ul> <p>Suggested solutions:</p> <ul style="list-style-type: none"> <li>Ask your network administrator to check that the server and client machines can 'ping' each other.</li> <li>Ask your IBM Campaign administrator to check that the IBM Campaign server machine does not use the port assigned to the IBM Campaign listener process for another application.</li> <li>Try the steps that caused the error again. If the error occurs again, reboot your client machine, and ask your system administrator to reboot the IBM Campaign server machine.</li> </ul> |
| 1715 | Unable to bind socket to specified port.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1716 | Unable to perform socket listen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1717 | Communication request has timed out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1719 | INTERNAL ERROR: Communication request has timed out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1729 | Client/Server library: Error retrieving drive information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1731 | INTERNAL ERROR: Invalid argument index specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1733 | Listener unable to create semaphore.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

*Table 59. IBM Campaign error codes (continued)*

| Code | Error Description                                                                                                                                                                                                                                                                                                                                                                                |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1734 | Listener: invalid File Block server port.                                                                                                                                                                                                                                                                                                                                                        |
| 1735 | Listener unable to invoke specified command.                                                                                                                                                                                                                                                                                                                                                     |
| 1736 | Listener: invalid UDME server port.                                                                                                                                                                                                                                                                                                                                                              |
| 1737 | Listener: invalid Shannon server port.                                                                                                                                                                                                                                                                                                                                                           |
| 1738 | Listener: unable to communicate with server process.                                                                                                                                                                                                                                                                                                                                             |
| 1739 | Listener: internal data integrity error.                                                                                                                                                                                                                                                                                                                                                         |
| 1741 | Unable to create thread.                                                                                                                                                                                                                                                                                                                                                                         |
| 1742 | Unable to wait for thread.                                                                                                                                                                                                                                                                                                                                                                       |
| 1743 | Client/Server library: Invalid process. Possible causes: A process, such as trigger, bulk loader, or the UDISvr, no longer exists. Suggested solutions: Examine the log file to determine if one of these processes ended abnormally. Ask your IBM Campaign administrator to restart the process that ended abnormally. If the error occurs again, ask your system administrator for assistance. |
| 1744 | Client/Server library: Invalid semaphore.                                                                                                                                                                                                                                                                                                                                                        |
| 1745 | Client/Server library: Invalid mutex.                                                                                                                                                                                                                                                                                                                                                            |
| 1746 | Client/Server library: Insufficient memory.                                                                                                                                                                                                                                                                                                                                                      |
| 1747 | INTERNAL ERROR: Client/Server library: Timeout elapsed object not signaled.                                                                                                                                                                                                                                                                                                                      |
| 1748 | Client/Server library: Wait for object failed.                                                                                                                                                                                                                                                                                                                                                   |
| 1749 | Client/Server library: Invalid directory specified.                                                                                                                                                                                                                                                                                                                                              |
| 1750 | INTERNAL ERROR: Requested server function unsupported.                                                                                                                                                                                                                                                                                                                                           |
| 1751 | Server shutting down; request refused.                                                                                                                                                                                                                                                                                                                                                           |
| 1773 | UDMEEsvr: flowchart requested for deletion is in use.                                                                                                                                                                                                                                                                                                                                            |
| 1783 | Someone else is already in EDIT or RUN mode.                                                                                                                                                                                                                                                                                                                                                     |
| 1784 | Edit before run is completed is not allowed                                                                                                                                                                                                                                                                                                                                                      |
| 1785 | Requested flowchart is active for another user.                                                                                                                                                                                                                                                                                                                                                  |
| 1786 | Server process has exited.<br>Possible causes: The IBM Campaign listener cannot start the IBM Campaign server process.<br>Suggested solutions: Ask your system administrator for assistance.                                                                                                                                                                                                     |

*Table 59. IBM Campaign error codes (continued)*

| Code | Error Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1787 | Maximum number of flowchart instances is already in use.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1788 | Requested flowchart is active for IBM Distributed Marketing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1789 | Requested flowchart is in use by an IBM Campaign user.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1790 | <p>Unable to authenticate user.</p> <p>Possible causes:</p> <p>The password you provided does not match the password stored in the IBM Marketing Platform.</p> <p>The user name or password field for accessing the database or other object is empty in the IBM Marketing Platform.</p> <p>The user name or password field for accessing the database or other object is empty in the IBM Marketing Platform.</p> <p>Suggested solutions:</p> <p>Check that the user name and password you provided are correct.</p> <p>Ask your IBM Campaign administrator to check that your user names and passwords stored in the IBM Marketing Platform are complete and correct.</p> |
| 1791 | Invalid group name specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1792 | Invalid file mode specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1793 | INTERNAL ERROR: Exit status requested for active process.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1794 | Evaluation period has expired.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1795 | Invalid License Code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1796 | Flowchart name has been changed by the writer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1797 | Flowchart name has been changed by the writer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1823 | INTERNAL ERROR: Mismatch in request parameter count.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1824 | INTERNAL ERROR: Mismatch in request parameter type.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1825 | INTERNAL ERROR: Mismatch in request scalar or vector count.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 1830 | Unsupported protocol type encountered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1831 | Invalid API.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1832 | No server process found for specified run. Run may be completed already.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2000 | HTTP session object is invalid.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                                                                                                                     |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2001  | HTTP connection object is invalid.                                                                                                                                                                    |
| 2002  | HTTP request object is invalid.                                                                                                                                                                       |
| 2003  | Error adding HTTP request headers.                                                                                                                                                                    |
| 2004  | Error setting HTTP proxy credentials.                                                                                                                                                                 |
| 2005  | Error setting HTTP server credentials.                                                                                                                                                                |
| 2006  | Error sending HTTP request.                                                                                                                                                                           |
| 2007  | Error receiving HTTP response.                                                                                                                                                                        |
| 2008  | Error querying HTTP response headers.                                                                                                                                                                 |
| 2009  | Error reading HTTP response data.                                                                                                                                                                     |
| 2010  | Error status returned in HTTP response.                                                                                                                                                               |
| 2011  | Error querying HTTP authentication schemes.                                                                                                                                                           |
| 2012  | No matching HTTP authentication schemes.                                                                                                                                                              |
| 2013  | Proxy server authentication failure. You must provide a valid proxy server username and password in a data source named "proxy" in the Marketing Platform before re-attempting to log into Campaign.  |
| 2014  | Web server authentication failure. You must provide a valid web server username and password in a data source named "webserver\" in the Marketing Platform before re-attempting to log into Campaign. |
| 2015  | HTTP request error after PAC file authentication failure.                                                                                                                                             |
| 2016  | HTTP request error after PAC file scheme failure.                                                                                                                                                     |
| 10001 | Internal Error.                                                                                                                                                                                       |
| 10022 | Internal Error: Cannot find Process.                                                                                                                                                                  |
| 10023 | Internal Error: Cannot find Connection.                                                                                                                                                               |
| 10024 | Internal Error: Cannot find Process.                                                                                                                                                                  |
| 10025 | Internal Error: Cannot find Connection.                                                                                                                                                               |
| 10026 | Internal Error: Unknown function tag.                                                                                                                                                                 |
| 10027 | Flowchart contains cycles.                                                                                                                                                                            |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                                                             |
|-------------|------------------------------------------------------------------------------------------------------|
| 10030       | Internal Error: Cannot get memory buffer from GIO.                                                   |
| 10031       | flowchart is running.                                                                                |
| 10032       | Internal Error: Unknown copy state.                                                                  |
| 10033       | Error modifying system table.                                                                        |
| 10034       | One or more Processes are not configured.                                                            |
| 10035       | Process has multiple Schedule inputs.                                                                |
| 10036       | Internal Error: Cannot find Process.                                                                 |
| 10037       | One or more pasted Processes have derived fields defined. They may need to be redefined.             |
| 10038       | Branch has one or more input processes outside of the branch.                                        |
| 10039       | flowchart DOM creation error.                                                                        |
| 10040       | flowchart DOM parse error.                                                                           |
| 10041       | Flowchart is recovered from auto-save file.                                                          |
| 10042       | The Flowchart that creates the Global Suppression Segment needed by this run is currently executing. |
| 10043       | The Global Suppression Segment is missing.                                                           |
| 10044       | The Global Suppression Segment is at the wrong audience level.                                       |
| 10046       | Only one process box of this type is allowed.                                                        |
| 10047       | Only one branch is allowed.                                                                          |
| 10048       | Flowchart must begin with an Interaction process box.                                                |
| 10049       | Unable to find treatment in the Treatment Cache.                                                     |
| 10116       | Internal Error: Process not registered.                                                              |
| 10119       | Internal Error: Unknown function tag.                                                                |
| 10120       | Process is running.                                                                                  |
| 10121       | Process run results will be lost.                                                                    |
| 10122       | Internal Error.                                                                                      |
| 10125       | Process is not configured.                                                                           |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                                |
|-------|------------------------------------------------------------------------------------------------------------------|
| 10126 | Process input is not ready.                                                                                      |
| 10127 | Process name not unique.                                                                                         |
| 10128 | Internal Error: Invalid Process index.                                                                           |
| 10129 | Internal Error: Invalid Report ID.                                                                               |
| 10130 | Internal Error: Invalid Table ID.                                                                                |
| 10131 | Internal Error: Invalid Field index.                                                                             |
| 10132 | Internal Error: Invalid Cell ID.                                                                                 |
| 10133 | Internal Error: Invalid Field index.                                                                             |
| 10134 | Internal Error: Invalid Process for registration.                                                                |
| 10136 | Process run stopped by user.                                                                                     |
| 10137 | Changes are not allowed while the Process is queued.                                                             |
| 10138 | Changes are not allowed while the Process is running.                                                            |
| 10139 | Changes are not allowed while a subsequent Process is running or queued.                                         |
| 10140 | The source of the Process has been changed. Derived fields and subsequent Processes may need to be reconfigured. |
| 10141 | One or more selected Tables don't exist.                                                                         |
| 10142 | Changes are not allowed while the flowchart is running.                                                          |
| 10143 | Process DOM creation error.                                                                                      |
| 10144 | Process DOM parse error.                                                                                         |
| 10145 | Unknown Process Parameter.                                                                                       |
| 10146 | Process name contains invalid character.                                                                         |
| 10147 | Output Cell Name is empty.                                                                                       |
| 10148 | Accumulate ID's option must be turned off for schedule process to run on queue.                                  |
| 10149 | Command not allowed in Reader mode.                                                                              |
| 10150 | Cannot open Segment data file.                                                                                   |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                                             |
|-------|-------------------------------------------------------------------------------------------------------------------------------|
| 10151 | Segment data file error: Invalid header.                                                                                      |
| 10152 | Internal Error: Invalid Segment (Data file name is blank).                                                                    |
| 10153 | Undefined user variable referenced in path.                                                                                   |
| 10154 | Critical error encountered.                                                                                                   |
| 10155 | A preceding process has not been run in production mode.                                                                      |
| 10156 | Cell name conflict detected in flowchart.                                                                                     |
| 10157 | Cell code conflict detected in flowchart.                                                                                     |
| 10158 | Topdown target cell is linked more than once.                                                                                 |
| 10159 | Linked topdown cell missing or already linked to another                                                                      |
| 10161 | Invalid field name.                                                                                                           |
| 10162 | Target cell is not yet approved to run in production.                                                                         |
| 10163 | In order to run in production, all input cells for this process must be linked to cells in the target cell spreadsheet (TCS). |
| 10164 | This process cannot handle topdown cells that are control cells or have control cells.                                        |
| 10165 | Cannot open Segment TempTable.                                                                                                |
| 10166 | Internal Error: Invalid Segment (Segment TempTable DB is blank).                                                              |
| 10167 | Internal Error: Invalid Segment (Segment TempTable name is blank).                                                            |
| 11167 | Inputs have different audience levels.                                                                                        |
| 11168 | Specified flowchart template not found in the system.                                                                         |
| 11169 | Interact base table mapping not found.                                                                                        |
| 10200 | Internal Error: Invalid 'From' Process                                                                                        |
| 10201 | Internal Error: Invalid 'To' Process                                                                                          |
| 10206 | Internal Error: Invalid 'From' Process                                                                                        |
| 10207 | Internal Error: Invalid 'To' Process                                                                                          |
| 10208 | Internal Error: Invalid connection index.                                                                                     |
| 10209 | Internal Error: DOM creation error.                                                                                           |
| 10210 | Internal Error: DOM parse error.                                                                                              |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                                                                                         |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10211 | Conflicting cell code ignored.                                                                                                                                            |
| 10300 | ServerComm out of memory.                                                                                                                                                 |
| 10301 | INTERNAL ERROR: No function registered for class.                                                                                                                         |
| 10302 | INTERNAL ERROR: Requested function not supported.                                                                                                                         |
| 10303 | Another flowchart connection has been established; reconnect not allowed.                                                                                                 |
| 10304 | All communication ports in the range specified in UNICA_ACSVR.CFG are in use.                                                                                             |
| 10305 | Requested flowchart is already in use.                                                                                                                                    |
| 10306 | Command not allowed in reader mode                                                                                                                                        |
| 10307 | Flowchart is in use. Not enough privileges to takeover.                                                                                                                   |
| 10350 | INTERNAL ERROR: flowchart not running.                                                                                                                                    |
| 10351 | INTERNAL ERROR: Client connected to flowchart.                                                                                                                            |
| 10352 | Unrecognized command.                                                                                                                                                     |
| 10353 | Invalid syntax.                                                                                                                                                           |
| 10354 | INTERNAL ERROR: SUSPEND RUN in progress.                                                                                                                                  |
| 10355 | No sessions were affected. The operation cannot be performed at this time. Please review the flowchart log for the probable cause and try again later.                    |
| 10356 | New connections have been disabled. An administrator must use unica_svradm's UNCAP command to re-enable.                                                                  |
| 10357 | flowchart run completed with errors.                                                                                                                                      |
| 10358 | Cached data not found                                                                                                                                                     |
| 10359 | Flowcharts need to be specified with relative, not absolute, pathnames to the partitionHome property defined in the central configuration repository provided by IBM EMM. |
| 10401 | INTERNAL ERROR: Client already connected.                                                                                                                                 |
| 10402 | Client is not connected to a server.                                                                                                                                      |
| 10403 | Connection to server has been lost. Retry?                                                                                                                                |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10404 | <p>Unable to communicate with server process; it may have exited.</p> <p>Possible causes</p> <p>The IBM Campaign server process:</p> <ul style="list-style-type: none"> <li>• cannot start when you log in, or when you create or open a flowchart.</li> <li>• no longer exists when you re-connect to the server.</li> <li>• terminated abnormally.</li> </ul> <p>Suggested solutions</p> <p>Ask your IBM Campaign administrator to check that the:</p> <ul style="list-style-type: none"> <li>• IBM Campaign listener process is running.</li> <li>• same version of the IBM Campaign web application, listener, and server are running on your system.</li> <li>• port number is properly configured in the IBM Marketing Platform.</li> </ul> <p>Ask your system administrator to examine the system log for additional information related to this error.</p> |
| 10405 | Server process is unresponsive; RETRY to wait or CANCEL to disconnect.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 10406 | INTERNAL ERROR: Communication with server already in progress.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 10407 | You have been disconnected; an administrator has suspended this flowchart.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 10408 | You have been disconnected; an administrator has killed this flowchart.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 10409 | You have been disconnected; an administrator has stopped this flowchart.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 10410 | You have been disconnected; an administrator has removed this flowchart.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 10411 | You have been disconnected; an administrator has taken control of this flowchart.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 10412 | HTTP SessionID is invalid, or HTTP Session has timed out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 10440 | Windows impersonation failure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 10441 | Continue sending windows authentication messages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 10442 | Stop sending windows authentication messages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 10443 | Failed to generate TYPE-1 message                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 10444 | Failed to generate TYPE-2 message                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 10445 | Failed to generate TYPE-3 message                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 10450 | Server process is unresponsive; unable to connect at this time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 10451 | Server process is unresponsive; unable to send trigger to all specified flowcharts at this time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                                                                                                                                                                                                                                               |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10452 | Server process is unresponsive; unable to reconnect at this time.                                                                                                                                                                                                                                                               |
| 10453 | <p>Server process is unresponsive; unable to complete requested action at this time.</p> <p>Possible causes</p> <p>The Campaign server is busy processing another request.</p> <p>Suggested solutions</p> <p>Ask your system administrator to check that the IBM Campaign server machine has enough CPU or memory resource.</p> |
| 10454 | Server process is updating flowchart data; unable to complete requested action at this time                                                                                                                                                                                                                                     |
| 10501 | INTERNAL ERROR: SRunMgr RunProcess thread already running.                                                                                                                                                                                                                                                                      |
| 10502 | Process's run was cancelled by Run Manager destruction.                                                                                                                                                                                                                                                                         |
| 10530 | Invalid Campaign Code format.                                                                                                                                                                                                                                                                                                   |
| 10531 | Invalid Offer Code format.                                                                                                                                                                                                                                                                                                      |
| 10532 | Failed to generate Campaign Code.                                                                                                                                                                                                                                                                                               |
| 10533 | Failed to generate Offer Code.                                                                                                                                                                                                                                                                                                  |
| 10534 | Invalid Treatment Code format.                                                                                                                                                                                                                                                                                                  |
| 10535 | Failed to generate Treatment Code.                                                                                                                                                                                                                                                                                              |
| 10536 | Invalid Cell Code format.                                                                                                                                                                                                                                                                                                       |
| 10537 | Failed to generate Cell Code.                                                                                                                                                                                                                                                                                                   |
| 10538 | Invalid Version Code format.                                                                                                                                                                                                                                                                                                    |
| 10539 | Failed to generate Version Code.                                                                                                                                                                                                                                                                                                |
| 10540 | Campaign code format contains invalid characters.                                                                                                                                                                                                                                                                               |
| 10541 | Cell code format contains invalid characters.                                                                                                                                                                                                                                                                                   |
| 10542 | Treatment code format contains invalid characters.                                                                                                                                                                                                                                                                              |
| 10550 | HTTP communication error.                                                                                                                                                                                                                                                                                                       |
| 10551 | Invalid response from ASM Server.                                                                                                                                                                                                                                                                                               |
| 10552 | ASM Server: unknown error.                                                                                                                                                                                                                                                                                                      |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                          |
|-------------|-------------------------------------------------------------------|
| 10553       | ASM Server: Login is invalid.                                     |
| 10554       | ASM Server: Error while inserting into db.                        |
| 10555       | ASM Server: Error while trying to map ASM objects.                |
| 10556       | ASM Server: Error because object already exists.                  |
| 10557       | ASM Server: Password Expired.                                     |
| 10558       | ASM Server: Password is too short.                                |
| 10559       | ASM Server: Password not properly formed.                         |
| 10560       | Internal Error: parsing data returned from ASM Server.            |
| 10561       | ASM Server: Valid login required.                                 |
| 10562       | ASM Server: Group name required.                                  |
| 10563       | ASM Server: Action not supported.                                 |
| 10564       | ASM Server: Exceeded maximum allowable pw attempts.               |
| 10565       | ASM Server: Password does not contain minimum number of numerics. |
| 10566       | ASM Server: Password cannot be same as login.                     |
| 10567       | ASM Server: Password cannot be reused from before.                |
| 10568       | ASM Server: User logon is disabled.                               |
| 10569       | ASM Server: Password does not contain minimum number of letters.  |
| 10570       | ASM Server: Password cannot be blank.                             |
| 10571       | ASM Server: Password is incorrect.                                |
| 10572       | This action requires proper privileges.                           |
| 10573       | ASM Server: Internal System Error.                                |
| 10576       | Internal Error: ASM client module is not initialized.             |
| 10577       | Login required to query for db credentials.                       |
| 10578       | Security data integrity error.                                    |
| 10580       | HTTP communication error                                          |

Table 59. IBM Campaign error codes (continued)

| Code  | Error Description                                                                                                                                                                                                                                                                                                           |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10581 | Invalid response from eMessage Server                                                                                                                                                                                                                                                                                       |
| 10582 | eMessage Server: unknown error                                                                                                                                                                                                                                                                                              |
| 10583 | eMessage Server: Internal System Error                                                                                                                                                                                                                                                                                      |
| 10584 | eMessage server url is not set.                                                                                                                                                                                                                                                                                             |
| 10585 | Internal Error: parsing data returned from eMessage Server                                                                                                                                                                                                                                                                  |
| 10586 | Error returned from eMessage Server.                                                                                                                                                                                                                                                                                        |
| 10590 | setuid failed.                                                                                                                                                                                                                                                                                                              |
| 10591 | setgid failed                                                                                                                                                                                                                                                                                                               |
| 10600 | Internal Error: Cell already initialized                                                                                                                                                                                                                                                                                    |
| 10601 | Internal Error: Source Cell not initialized                                                                                                                                                                                                                                                                                 |
| 10603 | Internal Error: Invalid cell ID.                                                                                                                                                                                                                                                                                            |
| 10604 | Internal Error: Invalid field index.                                                                                                                                                                                                                                                                                        |
| 10605 | Audience ID field not defined.                                                                                                                                                                                                                                                                                              |
| 10606 | Internal Error: Cannot find table manager.                                                                                                                                                                                                                                                                                  |
| 10607 | Invalid Table ID.                                                                                                                                                                                                                                                                                                           |
| 10608 | Operation not allowed while cell is being accessed.                                                                                                                                                                                                                                                                         |
| 10612 | Internal Error: Derived Field not found.                                                                                                                                                                                                                                                                                    |
| 10613 | <p>Field not found.</p> <p>Possible causes:</p> <ul style="list-style-type: none"> <li>The field no longer exists because of table mapping change.</li> <li>The audience level changed.</li> <li>The field was deleted.</li> </ul> <p>Suggested solutions: Re-configure the process box to reference a different field.</p> |
| 10616 | Internal Error: Derived variable not initialized.                                                                                                                                                                                                                                                                           |
| 10617 | Internal Error: Expression returns multiple columns.                                                                                                                                                                                                                                                                        |
| 10619 | Internal Error: Invalid row index.                                                                                                                                                                                                                                                                                          |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                                                                               |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10620 | Ambiguous field name.                                                                                                                                           |
| 10621 | Internal Error: selected fields not yet computed.                                                                                                               |
| 10624 | Internal Error: Access object became invalid.                                                                                                                   |
| 10625 | Internal Error: No Data Source selected for Raw SQL Query.                                                                                                      |
| 10629 | Error writing temporary file on Campaign server.                                                                                                                |
| 10630 | Operations not allowed on different audience levels.                                                                                                            |
| 10632 | Reference to stored query not found.                                                                                                                            |
| 10633 | Internal Error: Derived variable should not contain data.                                                                                                       |
| 10634 | Incompatible sort order detected. Set \enable_select_order_by=FALSE\ in dbconfig.lis.                                                                           |
| 10635 | Cannot resolve reference to stored query: Stored Query table not yet mapped.                                                                                    |
| 10636 | User Variable not defined.                                                                                                                                      |
| 10637 | Cell results are missing; preceding processes must be rerun.                                                                                                    |
| 10638 | Invalid value in 'counts' field.                                                                                                                                |
| 10639 | Internal Error: Bad STCell _Select State.                                                                                                                       |
| 10641 | Derived variable name conflicts with an existing Persistent Derived Field.                                                                                      |
| 10642 | Temp table not available for <TempTable> token.                                                                                                                 |
| 10643 | Temp table has too many rows                                                                                                                                    |
| 10644 | Temp table does not have enough rows                                                                                                                            |
| 10645 | <OutputTempTable> token used, but data source configuration does not allow temp tables.                                                                         |
| 10646 | Cannot create temp table on system database. Check datasource configuration to make sure temp tables are allowed and bulk insert or database loader is enabled. |
| 10661 | HTTP communication error with Instance Manager                                                                                                                  |
| 10700 | Incompatible field type or width.                                                                                                                               |
| 10800 | Duplicate parameter name for Custom Macro.                                                                                                                      |
| 10801 | Missing parameter name for Custom Macro.                                                                                                                        |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                              |
|-------|--------------------------------------------------------------------------------|
| 10802 | Incorrect number of parameters for Custom Macro.                               |
| 10803 | Illegal parameter name for Custom Macro.                                       |
| 10804 | Name conflicts with an existing Custom Macro.                                  |
| 10805 | Missing parameter for Custom Macro.                                            |
| 10806 | Parameter name is a reserved word.                                             |
| 10807 | Illegal Custom Macro name.                                                     |
| 10808 | Name conflicts with an existing IBM Macro.                                     |
| 10809 | Parameter used within Custom Macro expression is not part of Macro definition. |
| 10810 | Audience level is not defined in selected ACO session.                         |
| 10811 | Proposed contact table is not defined in selected ACO session.                 |
| 10812 | Proposed offer attribute table is not defined in selected ACO session.         |
| 10813 | Optimized contact table is not defined in selected ACO session.                |
| 10820 | INTERNAL DYNAMIC CAST ERROR                                                    |
| 10821 | Invalid configuration for ODS Campaign.                                        |
| 11001 | Internal Error: SendMessage error.                                             |
| 11004 | Internal Error.                                                                |
| 11005 | Internal Error: Unknown report type.                                           |
| 11006 | The flowchart is being accessed by another user.                               |
| 11100 | Memory allocation error.                                                       |
| 11101 | Internal Error: Unknown function tag.                                          |
| 11102 | Internal Error: Unknown class name in IDtoPtr.                                 |
| 11104 | Internal Error: Bad magic number in SCampaignContextConfig.                    |
| 11105 | File name not specified.                                                       |
| 11107 | Server campaign context internal error.                                        |
| 11108 | Internal Error: Cannot lock report.                                            |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                                       |
|-------------|--------------------------------------------------------------------------------|
| 11109       | Table is not defined.                                                          |
| 11110       | Environment variables not set.                                                 |
| 11111       | Internal Error: Error getting field info.                                      |
| 11112       | Invalid Password.                                                              |
| 11113       | Flowchart name not unique or empty.                                            |
| 11114       | Campaign code not unique.                                                      |
| 11115       | Active flowchart Cannot be deleted.                                            |
| 11116       | The specified file is not a Campaign flowchart file.                           |
| 11117       | Deletion of an old flowchart file is not supported. Please delete it manually. |
| 11119       | Unable to write unica_tbmgr.tmp file in tmp directory.                         |
| 11120       | Unable to rename unica_tbmgr.bin in conf directory.                            |
| 11121       | Unable to copy unica_tbmgr.tmp to unica_tbmgr.bin file.                        |
| 11122       | Unable to read unica_tbmgr.bin file in conf directory.                         |
| 11128       | Operation disallowed in configuration.                                         |
| 11131       | Invalid template file format.                                                  |
| 11132       | XML initialization error.                                                      |
| 11133       | DOM creation error.                                                            |
| 11134       | DOM parse error.                                                               |
| 11135       | Internal Error: Unknown user variable                                          |
| 11136       | Server campaign context cell locking error.                                    |
| 11137       | Server campaign context file open error.                                       |
| 11138       | The named user exists already.                                                 |
| 11139       | No user list table is mapped to the admin. session.                            |
| 11140       | User not found.                                                                |
| 11141       | Wrong password.                                                                |

Table 59. IBM Campaign error codes (continued)

| Code  | Error Description                                                                                 |
|-------|---------------------------------------------------------------------------------------------------|
| 11142 | File read error.                                                                                  |
| 11143 | Empty user variable.                                                                              |
| 11144 | Flowchart name and Campaign code not unique.                                                      |
| 11145 | authentication_server_url missing in unica_acsvr.cfg file.                                        |
| 11146 | Invalid user variable.                                                                            |
| 11147 | User Variable not found.                                                                          |
| 11148 | Changes to the virtual memory setting are not allowed.                                            |
| 11150 | Unable to create folder file. Please check your OS privilege.                                     |
| 11151 | Unable to delete folder file. Please check your OS privilege.                                     |
| 11152 | Unable to rename folder/campaign/session file. Please check your operating system privilege.      |
| 11153 | Unable to create campaign/session file. Please check your OS privilege.                           |
| 11154 | Unable to delete campaign/session file. Please check your OS privilege.                           |
| 11155 | Unable to move folder/campaign/session file. Please check your OS privilege.                      |
| 11156 | Failed to authenticate datasource.                                                                |
| 11157 | Effective date is later than expiration date                                                      |
| 11158 | Unable to open campaign/session file. Please check your OS privilege.                             |
| 11159 | Unable to read Log file. Please check your OS privilege.                                          |
| 11160 | Cannot display log. Log file name not specified                                                   |
| 11161 | Operation is not allowed while the flowchart is running.                                          |
| 11162 | Log file does not exist. Change logging levels if you would like to see more logging information. |
| 11163 | Campaign/session file does not exist in the file system.                                          |
| 11164 | Server Stored List Internal Error.                                                                |
| 11165 | Stored List unknown function tag.                                                                 |
| 11166 | Invalid security policy.                                                                          |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                           |
|-------------|--------------------------------------------------------------------|
| 11201       | Container internal error (1).                                      |
| 11202       | Container internal error (2).                                      |
| 11203       | Container data loading error.                                      |
| 11230       | Unable to create transcoders between specified encoding and UTF-8. |
| 11231       | Unable to transcode text value.                                    |
| 11232       | Cannot determine name of local host.                               |
| 11251       | New passwords mismatched. Please re-type.                          |
| 11253       | Stack overflow during sort operation.                              |
| 11254       | Too many arguments passed to command-line parser.                  |
| 11255       | Unbalanced quotes in command or config-file parameter.             |
| 11256       | Unable to open flowchart LOG file for append.                      |
| 11257       | Unable to write to flowchart LOG file.                             |
| 11258       | Unable to rename flowchart LOG file.                               |
| 11259       | Invalid Multibyte or Unicode character encountered.                |
| 11260       | Illegal or duplicate campaign code.                                |
| 11261       | Invalid old password                                               |
| 11262       | New read/write passwords mismatched.                               |
| 11263       | New read-only passwords mismatched.                                |
| 11264       | Invalid read/write password.                                       |
| 11265       | Invalid read-only password.                                        |
| 11266       | Password must contain at least 6 characters.                       |
| 11267       | Report registered.                                                 |
| 11268       | Report name missing.                                               |
| 11269       | New passwords mismatched.                                          |
| 11270       | Cannot create temporary file on client computer.                   |

Table 59. IBM Campaign error codes (continued)

| Code  | Error Description                                                                                                                                                                                                                                                                                                                                             |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11271 | Error reading temporary file on client computer.                                                                                                                                                                                                                                                                                                              |
| 11272 | Error writing temporary file on client computer.                                                                                                                                                                                                                                                                                                              |
| 11273 | Set new configuration as default?                                                                                                                                                                                                                                                                                                                             |
| 11274 | Unmap the selected table(s)?                                                                                                                                                                                                                                                                                                                                  |
| 11275 | No fields selected.                                                                                                                                                                                                                                                                                                                                           |
| 11276 | No flowchart name. Execution Checkpoints will not be performed.                                                                                                                                                                                                                                                                                               |
| 11280 | Server version is newer than client version. Upgrade client installation?                                                                                                                                                                                                                                                                                     |
| 11281 | Server version is older than client version. Downgrade client installation?                                                                                                                                                                                                                                                                                   |
| 11282 | Installation executable retrieved but unable to execute.                                                                                                                                                                                                                                                                                                      |
| 11283 | About to clear flowchart log. Are you sure?                                                                                                                                                                                                                                                                                                                   |
| 11284 | Help topic not found.                                                                                                                                                                                                                                                                                                                                         |
| 11285 | Error parsing help topics file.                                                                                                                                                                                                                                                                                                                               |
| 11286 | flowchart is recovered from auto-save file.                                                                                                                                                                                                                                                                                                                   |
| 11287 | Error loading bitmap.                                                                                                                                                                                                                                                                                                                                         |
| 11288 | Settings changed. Save catalog now?                                                                                                                                                                                                                                                                                                                           |
| 11289 | Flowchart is already open. Disconnect current user and connect?                                                                                                                                                                                                                                                                                               |
| 11290 | Flowchart must be saved before this operation can proceed.                                                                                                                                                                                                                                                                                                    |
| 11300 | <p>Invalid field name. Look at the end of message for invalid field name.</p> <p>Possible causes:</p> <p>The field no longer exists because of table mapping change.</p> <p>The audience level changed.</p> <p>The field was deleted.</p> <p>Suggested solutions: Re-configure the process box to reference a different field.</p> <p>Invalid Field Name=</p> |
| 11301 | Invalid field index.                                                                                                                                                                                                                                                                                                                                          |
| 11302 | No more records.                                                                                                                                                                                                                                                                                                                                              |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                                                                                                                                                                                                                                                                                                                                      |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11303       | Operation not allowed while table is being accessed.                                                                                                                                                                                                                                                                                                                          |
| 11304       | Locked tables cannot be removed.                                                                                                                                                                                                                                                                                                                                              |
| 11305       | Invalid table ID.                                                                                                                                                                                                                                                                                                                                                             |
| 11306       | ParseTree context in use.                                                                                                                                                                                                                                                                                                                                                     |
| 11307       | Random access of basetable by parsetree not allowed.                                                                                                                                                                                                                                                                                                                          |
| 11308       | Invalid table index.                                                                                                                                                                                                                                                                                                                                                          |
| 11309       | Invalid key index.                                                                                                                                                                                                                                                                                                                                                            |
| 11310       | Index key not initialized.                                                                                                                                                                                                                                                                                                                                                    |
| 11311       | Entry not found in dimension table.                                                                                                                                                                                                                                                                                                                                           |
| 11312       | ID field not specified.                                                                                                                                                                                                                                                                                                                                                       |
| 11313       | Invalid Table access.                                                                                                                                                                                                                                                                                                                                                         |
| 11314       | Data already imported.                                                                                                                                                                                                                                                                                                                                                        |
| 11315       | Internal error: VFSYSTEM missing                                                                                                                                                                                                                                                                                                                                              |
| 11316       | Input files not yet specified.                                                                                                                                                                                                                                                                                                                                                |
| 11317       | No data.                                                                                                                                                                                                                                                                                                                                                                      |
| 11318       | Modification not yet started.                                                                                                                                                                                                                                                                                                                                                 |
| 11319       | Entry into index field is not unique.                                                                                                                                                                                                                                                                                                                                         |
| 11320       | Unable to create lock file in conf directory.<br><br>Possible causes: The Campaign server cannot lock the dummy_lock.dat file<br><br>Suggested solutions: Ask your system administrator to check that the file is not locked by another process. If another process is not locking the file, ask the Campaign administrator to reboot the Campaign server to remove the lock. |
| 11321       | Internal table error                                                                                                                                                                                                                                                                                                                                                          |
| 11322       | Unknown function tag                                                                                                                                                                                                                                                                                                                                                          |
| 11323       | Data Dictionary file name not specified.                                                                                                                                                                                                                                                                                                                                      |
| 11324       | Function or Operation not supported.                                                                                                                                                                                                                                                                                                                                          |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                           |
|-------|-------------------------------------------------------------|
| 11325 | 'dbconfig.lis' file not found.                              |
| 11326 | Dimension table does not have a key field.                  |
| 11327 | ID of new version conflicts with existing versions.         |
| 11328 | Cannot open table catalog file.                             |
| 11329 | Too many duplicate ID's to perform table join.              |
| 11330 | Unable to delete template file                              |
| 11331 | Unable to delete catalog file.                              |
| 11332 | Error parsing Data Dictionary file: invalid format.         |
| 11333 | Error converting text data to numeric.                      |
| 11334 | Field width too small to hold converted numeric value.      |
| 11335 | Field width too small to hold source text data.             |
| 11336 | Accessed table not mapped.                                  |
| 11337 | Duplicate ID encountered in normalized table.               |
| 11338 | Internal error: Invalid temp table.                         |
| 11339 | Audience definition not compatible: wrong number of fields. |
| 11340 | Audience definition not compatible: type mismatch.          |
| 11341 | Name of new version conflicts with existing versions.       |
| 11342 | Field not found. Data dictionary has changed.               |
| 11343 | XML table catalog file is invalid.                          |
| 11344 | Loader command exited with an error status.                 |
| 11345 | Table schema has changed; please remap the table.           |
| 11346 | No results for queue table.                                 |
| 11347 | Internal error, wrong return format.                        |
| 11348 | Internal error loading catalog.                             |
| 11349 | No catalog loaded.                                          |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                                       |
|-------------|--------------------------------------------------------------------------------|
| 11350       | Internal error connecting to table.                                            |
| 11351       | Not connected to a table.                                                      |
| 11352       | Invalid keyword in dbconfig.lis file.                                          |
| 11353       | Invalid UDI connection.                                                        |
| 11354       | Internal Error: base table not set.                                            |
| 11355       | Invalid table name.                                                            |
| 11356       | DOM creation error.                                                            |
| 11357       | DOM parse error.                                                               |
| 11358       | Unable to import duplicate system table entry.                                 |
| 11359       | Unable to lock system table.                                                   |
| 11360       | PACKED DECIMAL field type is supported for export only.                        |
| 11361       | This operation is not supported.                                               |
| 11362       | Too many fields returned by SQL expression.                                    |
| 11363       | Data field returned by SQL expression does not agree with user specification.  |
| 11364       | Unknown database specification in raw SQL Custom Macro.                        |
| 11365       | Raw SQL Custom Macro returning only ID list is not allowed in this context.    |
| 11366       | Segment not found.                                                             |
| 11367       | Temp table not available for <TempTable> token.                                |
| 11368       | Contact History Table is not yet defined for this audience level.              |
| 11369       | Response History Table is not yet defined for this audience level.             |
| 11370       | Dimension Element expression is missing.                                       |
| 11371       | Ambiguous bin definition.                                                      |
| 11372       | Custom Macro returned wrong number of fields.                                  |
| 11373       | Custom Macro result fields are not compatible with the current audience level. |
| 11374       | Dimension Element name is not unique across all levels.                        |

Table 59. IBM Campaign error codes (continued)

| Code  | Error Description                                                                                                                               |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 11375 | Unknown Dimension Name.                                                                                                                         |
| 11376 | Unknown Dimension Element.                                                                                                                      |
| 11377 | Missing database specification for raw SQL Custom Macro.                                                                                        |
| 11378 | Campaign code not unique.                                                                                                                       |
| 11379 | Root dimension element missing in XML file.                                                                                                     |
| 11380 | Error converting date from one format to another.                                                                                               |
| 11381 | Not enough privileges to use RAW SQL in Dimensions.                                                                                             |
| 11382 | Syntax error: Missing AND/OR operator.                                                                                                          |
| 11383 | Syntax error: Extra AND/OR operator at end of selection criteria.                                                                               |
| 11384 | Field not compatible: Numeric field expected.                                                                                                   |
| 11385 | Field not compatible: Date field expected.                                                                                                      |
| 11386 | Error returned from UDI server.                                                                                                                 |
| 11387 | Internal ID would exceed limit.                                                                                                                 |
| 11388 | Cannot open Segment data file.                                                                                                                  |
| 11389 | Segment data file error: Invalid header.                                                                                                        |
| 11390 | Internal Error: Invalid Segment (Data file name is blank)                                                                                       |
| 11391 | Error accessing segment data.                                                                                                                   |
| 11392 | Cannot perform table join unless tables are on the same database.                                                                               |
| 11393 | Unable to add entry to non-persistent queue                                                                                                     |
| 11394 | Audience level is reserved, cannot add.                                                                                                         |
| 11395 | Audience level is reserved, cannot remove.                                                                                                      |
| 11396 | Internal Error: Invalid optimized contact table name.                                                                                           |
| 11397 | Field data exceeded the table mapping width for this field. Remap the table and manually increase the field width before running the flowchart. |
| 11398 | Post temp table create run script completed with error(s).                                                                                      |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                                                                     |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11399 | Cannot allocate an ID for a new object because the allocator is busy.                                                                                 |
| 11400 | Temp table not available for <OutputTempTable> token.                                                                                                 |
| 11401 | Invalid audience level definition.                                                                                                                    |
| 11402 | Missing audience field definition.                                                                                                                    |
| 11403 | Invalid or missing audience field name.                                                                                                               |
| 11404 | Duplicate audience field name.                                                                                                                        |
| 11405 | Invalid or missing audience field type.                                                                                                               |
| 11408 | INTERNAL ERROR: Invalid ID.                                                                                                                           |
| 11409 | INTERNAL ERROR: Wrong DAO type.                                                                                                                       |
| 11410 | DAO INTERNAL ERROR.                                                                                                                                   |
| 11411 | INTERNAL ERROR: System DAO factory is not initialized yet.                                                                                            |
| 11412 | INTERNAL ERROR: Unknown DAO implementation requested.                                                                                                 |
| 11413 | INTERNAL ERROR: Invalid type detected in DAO transfer.                                                                                                |
| 11414 | Insert operation only supported on single table.                                                                                                      |
| 11415 | Update operation only supported on single table.                                                                                                      |
| 11416 | Delete operation only supported on single table.                                                                                                      |
| 11417 | SQL query returned multiple records when unique record is expected.                                                                                   |
| 11418 | Default contact status not found in ContactStatus table.                                                                                              |
| 11419 | Contact History table must be mapped before Detailed Contact History table.                                                                           |
| 11420 | Offer not found in the system.                                                                                                                        |
| 11435 | Delimited file record length exceeds allowable maximum. Remap the table and manually increase field widths as necessary before running the flowchart. |
| 11500 | Internal Error: Not a valid table in the database.                                                                                                    |
| 11501 | Internal Error: No table has been selected.                                                                                                           |
| 11502 | Selected table has no field entries.                                                                                                                  |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                          |
|-------|------------------------------------------------------------|
| 11503 | Invalid column index.                                      |
| 11504 | Invalid column name.                                       |
| 11505 | Invalid data source.                                       |
| 11506 | Selected table is invalid or corrupted.                    |
| 11507 | Insufficient memory.                                       |
| 11508 | Database row deletion error.                               |
| 11509 | Error in processing SQL query.                             |
| 11510 | No data returned - check query.                            |
| 11511 | No matching row was found in the query result.             |
| 11512 | No more rows in the database.                              |
| 11513 | Error inserting row into database table.                   |
| 11514 | Bad database ID column.                                    |
| 11515 | Error updating database table.                             |
| 11516 | Error creating new database table.                         |
| 11517 | Number of columns not correct for this type of query.      |
| 11518 | Database connection error.                                 |
| 11519 | Error in getting results from database.                    |
| 11520 | Unknown database type for dataSources.                     |
| 11521 | Internal Error: Incorrect state for query results.         |
| 11522 | Invalid database connection (user is not logged in to DB). |
| 11523 | First unique ID not set.                                   |
| 11524 | Invalid data type for this column.                         |
| 11525 | Query has no FROM clause.                                  |
| 11526 | Query uses alias.                                          |
| 11527 | Internal Error: Error in database temporary table.         |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                                                                                                          |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 11528       | Database Error.                                                                                                                                   |
| 11529       | INTERNAL ERROR: No threads available to run query.                                                                                                |
| 11530       | Invalid property for dataSources                                                                                                                  |
| 11531       | Catalog/Template contains different DB login(s).                                                                                                  |
| 12000       | Contact History Table not specified.                                                                                                              |
| 12001       | Customer ID not specified.                                                                                                                        |
| 12002       | Offer ID not specified.                                                                                                                           |
| 12003       | Channel field not specified.                                                                                                                      |
| 12004       | Date field not specified.                                                                                                                         |
| 12005       | No proposed contacts table templates.                                                                                                             |
| 12006       | No tables available for template. Template tables must be mapped at Customer level and must contain the required Offer, Channel, and Date fields. |
| 12007       | No tables available for opt-in/opt-out tables. Opt-in/opt-out tables must be mapped at Customer level.                                            |
| 12008       | Opt-in/Opt-out tables not specified. \"Customer In...\" rules will not be available.                                                              |
| 12009       | Offer Table not specified.                                                                                                                        |
| 12010       | Offer Name field not specified. Offer ID will be used for display.                                                                                |
| 12011       | Channel Table not specified.                                                                                                                      |
| 12012       | Channel Name field not specified. Channel ID will be used for display.                                                                            |
| 12015       | Field name(s) of Offer audience level in template table does not agree with Contact History Table.                                                |
| 12016       | Field name(s) of Offer audience level in offer table does not agree with Contact History Table.                                                   |
| 12017       | No tables available for offer table. Offer table must be mapped at Offer level.                                                                   |
| 12018       | No tables available for channel table. Channel table must be mapped at the Channel level.                                                         |
| 12019       | Killing the server process will lose all work since the last save. Are you sure?                                                                  |
| 12020       | Window creation failed.                                                                                                                           |
| 12021       | Remove the following tables associated with this audience level?                                                                                  |

Table 59. IBM Campaign error codes (continued)

| Code  | Error Description                                                                                                                                                                                                                          |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12022 | Remove the selected dimension hierarchies?                                                                                                                                                                                                 |
| 12023 | Flowchart is in use. Do you still want to continue?<br>If you click Yes, changes made by other user will be lost.                                                                                                                          |
| 12024 | Remove the selected audience level?                                                                                                                                                                                                        |
| 12025 | Audience name already exists.                                                                                                                                                                                                              |
| 12026 | This flowchart has been modified or removed by another user. You will be switched to Summary tab now. All changes after the last save will be discarded.                                                                                   |
| 12027 | This flowchart needs to be updated. Click OK to update now. You will need to redo the last action after update is completed.                                                                                                               |
| 12028 | Object is either initializing or has failed to initialize. You may try this operation again.                                                                                                                                               |
| 12029 | Remove the selected items?                                                                                                                                                                                                                 |
| 12030 | You have chosen to cancel connection to Campaign system tables. You will be switched to Summary tab now.                                                                                                                                   |
| 12031 | Cannot proceed without connection to Campaign system tables.                                                                                                                                                                               |
| 12032 | This table is only supported when Interact is installed.                                                                                                                                                                                   |
| 12033 | Failed to load flowchart. Retry?                                                                                                                                                                                                           |
| 12034 | HTTP Session has timed out. Click OK to log back in.                                                                                                                                                                                       |
| 12035 | Flowchart control is not compatible. Browsers need to close to download the lower version. Please close all other browsers manually and click OK to close this browser. On browser restart, the control will get downloaded automatically. |
| 12036 | There are still other browsers running. Please close them before clicking OK.                                                                                                                                                              |
| 12037 | Field name contains illegal character.                                                                                                                                                                                                     |
| 12038 | Audience level name not specified.                                                                                                                                                                                                         |
| 12039 | Audience field(s) not specified.                                                                                                                                                                                                           |
| 12040 | No errors detected in flowchart configuration.                                                                                                                                                                                             |
| 12041 | This running flowchart has been paused by another user.                                                                                                                                                                                    |
| 12206 | Cannot navigate up a directory: already at root.                                                                                                                                                                                           |
| 12207 | Cannot create directory; check log file for detailed error information.                                                                                                                                                                    |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                        |
|-------|----------------------------------------------------------|
| 12301 | Merge process internal error.                            |
| 12303 | Merge process connecting from process error.             |
| 12304 | Merge process cell locking error.                        |
| 12305 | Merge process stopped by user.                           |
| 12306 | Merge process cell operation error.                      |
| 12307 | Merge process getting source cell error.                 |
| 12308 | Merge process not configured.                            |
| 12309 | No input cell is chosen.                                 |
| 12310 | No input cell is used.                                   |
| 12311 | Selected input cells have different audience levels.     |
| 12312 | Missing source cell(s). Input connection may be invalid. |
| 12401 | Execute Internal Error (1)                               |
| 12600 | INTERNAL ERROR: SReport                                  |
| 12601 | Report in use; unable to delete.                         |
| 12602 | INTERNAL ERROR: Invalid report ID.                       |
| 12603 | INTERNAL ERROR: Invalid report type saved.               |
| 12604 | INTERNAL ERROR: Invalid report cell ID.                  |
| 12605 | INTERNAL ERROR: Report not initialized before run.       |
| 12606 | INTERNAL ERROR: Missing value.                           |
| 12607 | INTERNAL ERROR: Unable to lock report.                   |
| 12608 | INTERNAL ERROR: Invalid field specified.                 |
| 12609 | Report cannot be created without any cells.              |
| 12610 | INTERNAL ERROR: No more cell records available.          |
| 12611 | Report name conflicts with another registered report.    |
| 12612 | Cannot open HTML file for write.                         |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                 |
|-------|-----------------------------------------------------------------------------------|
| 12613 | Field type does not match internal setting. Table may need to be remapped.        |
| 12614 | Report name is empty.                                                             |
| 12615 | Command not allowed in Reader mode                                                |
| 13000 | An error occurred while parsing the response from the webapp.                     |
| 13001 | The client id is missing in the response from the webapp.                         |
| 13002 | The resolution id is missing in the response from the webapp.                     |
| 13003 | The <code>iscomplete</code> flag in the response from the webapp, has a bad value |
| 13004 | An unknown error code has been returned from the webapp.                          |
| 13005 | HTTP communication error                                                          |
| 13006 | The response required an <code>iscomplete</code> flag, but it was missing.        |
| 13101 | Internal error.                                                                   |
| 13104 | Cell locking error.                                                               |
| 13110 | Process not configured.                                                           |
| 13111 | Unknown function tag.                                                             |
| 13113 | Report locking error.                                                             |
| 13114 | Profile report generation error.                                                  |
| 13115 | Table locking error.                                                              |
| 13116 | No input cell.                                                                    |
| 13117 | No input selected.                                                                |
| 13118 | Missing selection criteria.                                                       |
| 13119 | No data source is selected.                                                       |
| 13120 | Selected tables have different audience levels.                                   |
| 13121 | Audience level not specified.                                                     |
| 13122 | DOM creation error.                                                               |
| 13123 | DOM parse error.                                                                  |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                                                             |
|-------------|------------------------------------------------------------------------------------------------------|
| 13124       | Unknown parameter.                                                                                   |
| 13125       | Invalid parameter value.                                                                             |
| 13131       | Database authentication required.                                                                    |
| 13132       | String conversion error.                                                                             |
| 13133       | No fields are selected for extract.                                                                  |
| 13134       | Duplicate output name in fields to extract.                                                          |
| 13135       | No skip duplicate field selected.                                                                    |
| 13136       | Command not allowed in Reader mode                                                                   |
| 13137       | No source table selected.                                                                            |
| 13138       | Error selecting based on dimension hierarchy: No tables mapped at selected Segment's audience level. |
| 13139       | Missing table mapping for selected optimize session.                                                 |
| 13140       | Missing CustomerInsight Selection.                                                                   |
| 13141       | Selected CustomerInsight Selection is not valid.                                                     |
| 13145       | Missing NetInsight Selection.                                                                        |
| 13146       | Selected NetInsight Selection is not valid.                                                          |
| 13200       | Contact process memory allocation error.                                                             |
| 13201       | Contact process internal error.                                                                      |
| 13203       | Contact process connecting from process error.                                                       |
| 13204       | Contact process locking cell error.                                                                  |
| 13205       | Contact process stopped by user.                                                                     |
| 13206       | Contact process locking contact table error.                                                         |
| 13207       | Contact process locking version table error.                                                         |
| 13208       | Contact process getting cell information error.                                                      |
| 13209       | Contact process getting table information error.                                                     |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                 |
|-------|---------------------------------------------------|
| 13210 | Contact process locking table error.              |
| 13211 | Contact process unknown function tag error.       |
| 13212 | Contact process GIO open error.                   |
| 13213 | Contact process locking report error.             |
| 13214 | More information is needed for a creative piece.  |
| 13215 | Exactly one variable cost item should be chosen.  |
| 13216 | Conflict variable cost items.                     |
| 13217 | More information is needed for a version.         |
| 13218 | At least one creative piece have to be chosen.    |
| 13219 | At least one response channel have to be chosen.  |
| 13220 | One contact channel has to be chosen.             |
| 13221 | The chosen ID is not unique.                      |
| 13223 | Contact ID is not unique.                         |
| 13224 | Treatment page: No source cell.                   |
| 13225 | Treatment page: Contact ID is not selected.       |
| 13226 | Treatment page: No version is selected.           |
| 13227 | Contact list page: No export table is selected.   |
| 13228 | Contact list page: No summary file is chosen.     |
| 13229 | Contact list page: No export fields are chosen.   |
| 13230 | Tracking page: Frequency of update is not chosen. |
| 13231 | Tracking page: Monitor period cannot be zero.     |
| 13232 | Responders page: No responder table is chosen.    |
| 13233 | Unreachable page: No unreachable table is chosen. |
| 13234 | Log page: No table is chosen to log contacts.     |
| 13235 | Log page: No fields are chosen to log contacts.   |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                     |
|-------|---------------------------------------------------------------------------------------|
| 13236 | Log page: No table is chosen to log responders.                                       |
| 13237 | Log page: No fields are chosen to log responders.                                     |
| 13238 | Log page: No table is chosen to log unreachable.                                      |
| 13239 | Log page: No fields are chosen to log unreachable.                                    |
| 13240 | Contact process getting cell field infomation error.                                  |
| 13241 | Contact list page: No trigger is specified.                                           |
| 13242 | Contact list page: no sort field is chosen.                                           |
| 13244 | Invalid field.                                                                        |
| 13246 | Double to string conversion error.                                                    |
| 13248 | Contact list page: No export file is chosen.                                          |
| 13249 | Contact list page: No delimiter is specified.                                         |
| 13250 | Selected tables have different audience levels.                                       |
| 13251 | Contact list page: No export dictionary file is chosen.                               |
| 13252 | Log page: No file is chosen to log contacts.                                          |
| 13253 | Log page: No delimiter is specified for contacts.                                     |
| 13254 | Log page: No dictionary file is specified for contacts.                               |
| 13255 | Log page: No file is chosen to log responders.                                        |
| 13256 | Log page: No delimiter is specified for responders.                                   |
| 13257 | Log page: No dictionary file is specified for responders.                             |
| 13258 | Log page: No file is chosen to log unreachable.                                       |
| 13259 | Log page: No delimiter is specified for unreachable.                                  |
| 13260 | Log page: No dictionary file is specified for unreachable.                            |
| 13261 | Contact List Page: Selected Data Export Filename contains Invalid Path                |
| 13262 | Contact List Page: Selected Data Dictionary for Export File contains an Invalid Path. |
| 13263 | Contact List Page: No skip duplicate field is chosen.                                 |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                      |
|-------|----------------------------------------------------------------------------------------|
| 13264 | Contact List Page: Update Records require a base table with audience same as input.    |
| 13265 | Log Page Contact: Update Records require a base table with audience same as input.     |
| 13266 | Log Page Responders: Update Records require a base table with audience same as input.  |
| 13267 | Log Page Unreachable: Update Records require a base table with audience same as input. |
| 13268 | Tracking page: No trigger is specified.                                                |
| 13269 | Responders page: No responder query is specified.                                      |
| 13270 | Responders page: No data source is selected.                                           |
| 13271 | Unreachable page: No unreachable query is specified.                                   |
| 13272 | Unreachable page: No data source is selected.                                          |
| 13273 | Selected source cells have different audience levels.                                  |
| 13274 | Unknown parameter for Contact Process.                                                 |
| 13275 | Invalid parameter value for Contact Process.                                           |
| 13276 | Version Name is not unique.                                                            |
| 13277 | Empty or Duplicate Cell Codes.                                                         |
| 13278 | About to modify a version used by another flowchart.                                   |
| 13279 | Log Page Contact: No skip duplicate field is chosen.                                   |
| 13280 | Log Page Responders: No skip duplicate field is chosen.                                |
| 13281 | Log Page Unreachable: No skip duplicate field is chosen.                               |
| 13282 | Contact process DOM creation error.                                                    |
| 13283 | No data source is selected.                                                            |
| 13284 | Contact List Page: Selected Data Dictionary File does not exist.                       |
| 13285 | Log page: No fields are chosen to log contacts.                                        |
| 13286 | Command not allowed in Reader mode                                                     |
| 13301 | Internal error.                                                                        |
| 13304 | Cell locking error.                                                                    |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                         |
|-------|-------------------------------------------|
| 13310 | Profile report generation error.          |
| 13311 | Unknown function tag.                     |
| 13312 | Report locking error.                     |
| 13313 | No input is selected.                     |
| 13314 | No field is selected.                     |
| 13315 | No query is specified.                    |
| 13316 | No data source is specified.              |
| 13317 | Name not unique.                          |
| 13318 | No table is selected.                     |
| 13320 | Unknown parameter.                        |
| 13321 | Invalid parameter value.                  |
| 13322 | Name not specified.                       |
| 13323 | Invalid name.                             |
| 13324 | Command not allowed in Reader mode        |
| 13400 | Schedule process memory allocation error. |
| 13401 | Schedule process internal error.          |
| 13403 | Connecting from process error.            |
| 13404 | Cell locking error.                       |
| 13405 | Process stopped by user.                  |
| 13408 | Date format error.                        |
| 13409 | Time format error.                        |
| 13410 | Total schedule period is zero.            |
| 13411 | No schedule to run is chosen.             |
| 13412 | Run on time needs times.                  |
| 13413 | Run on triggers needs triggers.           |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                  |
|-------|--------------------------------------------------------------------|
| 13414 | Need output triggers.                                              |
| 13415 | Elapsed time is zero.                                              |
| 13416 | Additional wait must work with one of the first three run options. |
| 13417 | Schedule run time(s) outside the schedule period.                  |
| 13418 | Invalid time format.                                               |
| 13419 | At least one of the custom run options has to be selected.         |
| 13420 | Delay exceeds the total schedule period.                           |
| 13421 | Invalid time. Start time has expired.                              |
| 13422 | Input queue table not selected.                                    |
| 13423 | Selected queue table is invalid.                                   |
| 13424 | Cannot use 'Run Selected Process' on this process                  |
| 13501 | Sample process internal error.                                     |
| 13503 | Sample process connecting from process error.                      |
| 13504 | Sample process cell locking error.                                 |
| 13505 | Sample process stopped by user.                                    |
| 13506 | Sample process locking sample table error.                         |
| 13507 | Sample process locking version table error.                        |
| 13508 | Sample process getting source cell error.                          |
| 13510 | Sample process unknown function tag.                               |
| 13511 | Sample process not configured.                                     |
| 13512 | Sample process output cell size exceeding input cell size.         |
| 13513 | No source cell is chosen.                                          |
| 13514 | No ordering field is chosen.                                       |
| 13515 | Name not unique.                                                   |
| 13516 | Unknown parameter for Sample Process.                              |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                            |
|-------|----------------------------------------------|
| 13517 | Invalid parameter value for Sample Process.  |
| 13518 | Sample name not specified.                   |
| 13519 | Invalid sample name.                         |
| 13520 | Command not allowed in Reader mode           |
| 13521 | Sample size not specified.                   |
| 13601 | Internal error.                              |
| 13602 | GIO open error.                              |
| 13603 | The named trigger doesn't exist.             |
| 13604 | Trigger name not specified                   |
| 13605 | Trigger completed with error(s).             |
| 13701 | Score process internal error.                |
| 13703 | Score process connecting from process error. |
| 13704 | Score process cell locking error.            |
| 13705 | Score process stopped by user.               |
| 13706 | Score process cell operation error.          |
| 13707 | Number of models can't be zero.              |
| 13708 | Score process GIO open error.                |
| 13709 | Environment variables not set.               |
| 13716 | Score field prefix is missing.               |
| 13717 | An internal model is not selected.           |
| 13718 | An external model is not chosen.             |
| 13719 | Model variables are not completely matched.  |
| 13720 | No input is selected.                        |
| 13721 | The number of models is zero.                |
| 13723 | Score field prefix not unique.               |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                               |
|-------|---------------------------------------------------------------------------------|
| 13724 | The external model (rtm) file is incompatible with current SCORE configuration. |
| 13725 | Invalid field.                                                                  |
| 13726 | dbscore process completed with error(s).                                        |
| 13727 | Unknown parameter for Score Process.                                            |
| 13728 | Cannot find external model file.                                                |
| 13729 | Cannot get model information. Model file may be invalid.                        |
| 13730 | Command not allowed in Reader mode                                              |
| 13801 | SelectOpt process internal error.                                               |
| 13803 | SelectOpt process connecting from process error.                                |
| 13804 | SelectOpt process cell locking error.                                           |
| 13805 | SelectOpt process stopped by user.                                              |
| 13806 | SelectOpt process cell operation error.                                         |
| 13807 | SelectOpt process table locking error.                                          |
| 13809 | SelectOpt process report locking error.                                         |
| 13812 | dbscore process completed with error(s).                                        |
| 13825 | Duplicate Personalization Field Name specified.                                 |
| 13833 | Personalization Field Display Name is blank.                                    |
| 13834 | Personalization Field Display Name contains invalid character.                  |
| 13901 | Internal error.                                                                 |
| 13903 | Connecting from process error.                                                  |
| 13904 | Cell locking error.                                                             |
| 13905 | Process stopped by user.                                                        |
| 13906 | Cell operation error.                                                           |
| 13907 | Table locking error.                                                            |
| 13909 | Unknown function tag error.                                                     |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                  |
|-------|--------------------------------------------------------------------|
| 13910 | Report locking error.                                              |
| 13911 | No input is selected.                                              |
| 13912 | No export table is selected.                                       |
| 13913 | No fields are selected for export.                                 |
| 13914 | No sort field is chosen.                                           |
| 13915 | Invalid field name.                                                |
| 13917 | Invalid field name.                                                |
| 13918 | No export file is selected.                                        |
| 13921 | String conversion error.                                           |
| 13923 | Selected cells have different audience levels.                     |
| 13924 | No delimiter is specified.                                         |
| 13925 | No export data dictionary file name is specified.                  |
| 13926 | Selected Data Export Filename contains Invalid Path                |
| 13927 | Selected Data Dictionary for Export File contains an Invalid Path. |
| 13928 | No skip duplicate field selected.                                  |
| 13929 | Update Records require a base table with audience same as input.   |
| 13930 | Snapshot process DOM creation error.                               |
| 13931 | Unknown parameter for Snapshot Process.                            |
| 13932 | Invalid parameter value for Snapshot Process.                      |
| 13933 | Empty or Duplicate Cell Codes.                                     |
| 13934 | Selected Data Dictionary File does not exist.                      |
| 13935 | Command not allowed in Reader mode                                 |
| 14001 | Model process internal error.                                      |
| 14003 | Model process connecting from process error.                       |
| 14004 | Model process cell locking error.                                  |

Table 59. IBM Campaign error codes (continued)

| Code  | Error Description                                  |
|-------|----------------------------------------------------|
| 14005 | Model process stopped by user.                     |
| 14006 | Model process cell operation error.                |
| 14008 | Model process report locking error.                |
| 14009 | No responder cell is selected.                     |
| 14010 | No non-responder cell is selected.                 |
| 14013 | Model file name is not selected.                   |
| 14014 | At least one variable has to be used for modeling. |
| 14015 | No responder and non-responder cells are selected. |
| 14016 | udmerun process completed with error(s).           |
| 14017 | Selected Model Filename contains Invalid Path      |
| 14018 | Command not allowed in Reader mode                 |
| 14101 | EvalOpt process internal error.                    |
| 14103 | EvalOpt process connecting from process error.     |
| 14104 | EvalOpt process locking cell error.                |
| 14105 | EvalOpt process stopped by user.                   |
| 14106 | EvalOpt process cell operation error.              |
| 14107 | EvalOpt process table locking error.               |
| 14108 | EvalOpt process unknown function tag.              |
| 14110 | EvalOpt process locking report error.              |
| 14111 | No responder cell is chosen.                       |
| 14112 | No non-responder cell is chosen.                   |
| 14113 | No responder field is chosen.                      |
| 14114 | No non-responder field is chosen.                  |
| 14115 | Unknown parameter for EvalOpt Process.             |
| 14116 | Set number not specified.                          |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                             |
|-------------|------------------------------------------------------|
| 14117       | Set number out of range.                             |
| 14118       | Set name is empty.                                   |
| 14119       | Not supported options.                               |
| 14120       | Command not allowed in Reader mode                   |
| 14202       | PopulateSegment internal error.                      |
| 14203       | PopulateSegment cell locking error.                  |
| 14204       | PopulateSegment process unknown function tag.        |
| 14205       | No input is selected.                                |
| 14206       | Segment name not unique within the specified folder. |
| 14207       | Segment name is not specified.                       |
| 14208       | Invalid segment name.                                |
| 14209       | Invalid security policy.                             |
| 14210       | Security policy not specified.                       |
| 14301       | TestOpt process internal error.                      |
| 14303       | TestOpt process connecting from process error.       |
| 14304       | TestOpt process cell locking error.                  |
| 14305       | TestOpt process stopped by user.                     |
| 14306       | TestOpt process cell operation error.                |
| 14307       | TestOpt process table locking error.                 |
| 14308       | No source cell is selected.                          |
| 14309       | Number of tests to be optimized is zero.             |
| 14310       | One of the financials is not configured.             |
| 14317       | Report locking error.                                |
| 14319       | Error to get selected field index.                   |
| 14320       | Probability field value exceeds 1.0.                 |

Table 59. IBM Campaign error codes (continued)

| Code  | Error Description                                                 |
|-------|-------------------------------------------------------------------|
| 14321 | Invalid field.                                                    |
| 14322 | No probability field is selected.                                 |
| 14323 | No treatment is chosen.                                           |
| 14324 | Command not allowed in Reader mode                                |
| 14501 | Custom macros internal error.                                     |
| 14502 | The Custom Macro expression type is not specified.                |
| 14503 | The custom macro name is empty.                                   |
| 14504 | The Custom Macro expression is missing.                           |
| 14505 | Custom Macro unknown function tag.                                |
| 14701 | Stored field internal error.                                      |
| 14703 | No variable name is specified.                                    |
| 14704 | No expression is specified.                                       |
| 14705 | There is already a stored derived field of the same name.         |
| 14706 | Stored field unknown function tag.                                |
| 14901 | List box selection error                                          |
| 14902 | Too many items selected                                           |
| 14903 | No items selected                                                 |
| 14905 | Selection not found                                               |
| 14906 | Unrecognized tree view operation                                  |
| 14907 | No cost information selected                                      |
| 14908 | Dialog initialization error                                       |
| 14909 | Specified cell name (process name + output cell name) is too long |
| 14912 | Creative ID may only contain alphanumerics and underscore         |
| 14913 | Output Cell Names not unique.                                     |
| 14914 | Overwrite current info?                                           |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                          |
|-------------|-------------------------------------------------------------------|
| 15101       | Dialog initialization error                                       |
| 15201       | List box selection error                                          |
| 15202       | Dialog initialization error                                       |
| 15203       | Specified cell name (process name + output cell name) is too long |
| 15204       | Invalid cell size limit.                                          |
| 15301       | Dialog initialization error                                       |
| 15501       | String not found                                                  |
| 15502       | Minimum rate > maximum rate                                       |
| 15503       | Dialog initialization error                                       |
| 15504       | Invalid output cell name                                          |
| 15701       | Dialog initialization error                                       |
| 15702       | Specified cell name (process name + output cell name) is too long |
| 15801       | Selected string not found                                         |
| 15802       | Tree expansion error                                              |
| 15803       | Dialog initialization error                                       |
| 15804       | Segment name not specified                                        |
| 15805       | Segment names Cannot be specified                                 |
| 15901       | Selected string not found                                         |
| 15903       | Dialog initialization error                                       |
| 15904       | Specified cell name (process name + output cell name) is too long |
| 15905       | List box selection error                                          |
| 15906       | Invalid cell/record size limit.                                   |
| 15907       | Existing expression based on tables and fields will be lost.      |
| 15908       | Existing criteria based on dimension hierarchy will be lost.      |
| 16001       | Dialog initialization error                                       |

Table 59. IBM Campaign error codes (continued)

| Code  | Error Description                                                 |
|-------|-------------------------------------------------------------------|
| 16002 | No list box selection found                                       |
| 16051 | Stored trigger internal error.                                    |
| 16053 | The trigger name is empty.                                        |
| 16054 | The trigger command is empty.                                     |
| 16055 | There is already a trigger defined under the same name.           |
| 16056 | Stored trigger unknown function tag.                              |
| 16101 | Selection error                                                   |
| 16102 | Multiple selection error                                          |
| 16103 | No items selected                                                 |
| 16104 | Selection style error                                             |
| 16105 | Selection not found                                               |
| 16106 | Dialog initialization error                                       |
| 16201 | Dialog initialization error                                       |
| 16202 | ListBox selection error                                           |
| 16203 | Specified cell name (process name + output cell name) is too long |
| 16302 | Source table is not yet mapped.                                   |
| 16303 | DimensionInfo Internal Error: Unknown Function.                   |
| 16304 | DimensionInfo Internal Error.                                     |
| 16305 | Illegal number of levels.                                         |
| 16306 | Required field missing in source table. It needs to be remapped.  |
| 16400 | No data base source defined                                       |
| 16401 | No table selected                                                 |
| 16402 | Internal Error: no table manager                                  |
| 16403 | Bad Campaign Table index                                          |
| 16404 | Internal Error                                                    |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                                              |
|-------------|---------------------------------------------------------------------------------------|
| 16405       | Internal Error: New Table Unknown function                                            |
| 16406       | No file name specified                                                                |
| 16407       | No data dictionary specified                                                          |
| 16408       | The selected table has no defined fields                                              |
| 16409       | Internal Error: No table created                                                      |
| 16410       | No name specified for new table                                                       |
| 16411       | Need a user name and password for the database                                        |
| 16412       | The database type is not currently supported                                          |
| 16413       | Table is not a base table -- no relations allowed                                     |
| 16414       | Bad field index                                                                       |
| 16415       | Record table ID not specified                                                         |
| 16416       | Internal Error: No dimension table with this name                                     |
| 16417       | Table is not a dimension or general table                                             |
| 16418       | Internal Error: No base table with this name                                          |
| 16419       | Entry point not valid for this operation                                              |
| 16420       | Mapping to an existing table not valid for this operation                             |
| 16421       | Error creating new Flat File                                                          |
| 16422       | Error - no file/table option selected                                                 |
| 16423       | Error - no database selected                                                          |
| 16424       | Error - table selected is invalid                                                     |
| 16425       | Error - bad key field index                                                           |
| 16426       | Error - blank key field name                                                          |
| 16427       | Error - Table Name is duplicate or invalid                                            |
| 16428       | Field name must begin with a letter and may only contain alphanumerics and underscore |
| 16429       | Dimension table ID not specified                                                      |

Table 59. IBM Campaign error codes (continued)

| Code  | Error Description                                                                     |
|-------|---------------------------------------------------------------------------------------|
| 16430 | Duplicate field names specified                                                       |
| 16431 | Table name must begin with a letter and may only contain alphanumerics and underscore |
| 16432 | Error - Dimension Name is duplicate or invalid                                        |
| 16433 | Error - Folder not found                                                              |
| 16501 | Derived field internal error.                                                         |
| 16503 | Derived field unknown function tag error.                                             |
| 16504 | Derived field not exist.                                                              |
| 16505 | Derived field report locking error.                                                   |
| 16506 | Derived field table locking error.                                                    |
| 16507 | Derived field cell locking error.                                                     |
| 16508 | Derived field already exists.                                                         |
| 16509 | Derived field getting all field information error.                                    |
| 16601 | Internal Error.                                                                       |
| 16603 | The authorized process's schedule period has expired.                                 |
| 16701 | Selected string not found                                                             |
| 16702 | Parent window not found                                                               |
| 16703 | Filename not specified                                                                |
| 16704 | No fields selected                                                                    |
| 16705 | Dialog initialization error                                                           |
| 16706 | Specified Source File does not exist                                                  |
| 16707 | Remapping system table - are you sure?                                                |
| 16708 | Overwrite old definition?                                                             |
| 16709 | Syntax check OK                                                                       |
| 16710 | Discard changes to current expression?                                                |
| 16711 | Specified Dictionary File does not exist                                              |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                                               |
|-------------|----------------------------------------------------------------------------------------|
| 16712       | Derived variable name not specified                                                    |
| 16713       | Query name not specified                                                               |
| 16714       | Trigger name not specified                                                             |
| 16715       | No field selected                                                                      |
| 16716       | Illegal field name                                                                     |
| 16717       | Invalid name: name must begin with a letter and must contain only alphanumerics or '_' |
| 16718       | Remove entry?                                                                          |
| 16719       | Remove folder? All folder information (sub-folders etc.) will be lost.                 |
| 16720       | Name not specified                                                                     |
| 16721       | Invalid Data Dictionary file. It may be a directory.                                   |
| 16722       | Data Dictionary file exists. Do you want to overwrite it?                              |
| 16723       | File Not Found                                                                         |
| 16724       | Overwrite Existing File?                                                               |
| 16725       | Audience level not specified                                                           |
| 16726       | Audience ID Field(s) not specified                                                     |
| 16727       | Duplicate Audience ID Fields                                                           |
| 16728       | Invalid run state - operation will be terminated                                       |
| 16729       | No table(s) selected                                                                   |
| 16730       | No cell(s) selected                                                                    |
| 16731       | Selected tables have different audience levels                                         |
| 16732       | Selected cells have different audience levels                                          |
| 16733       | Audience level is already defined as the table's primary audience                      |
| 16734       | Audience level is already defined for this table                                       |
| 16735       | Base Table's related fields not compatible with Dimension Table's key fields           |
| 16736       | The file path length has exceeded the allowed limit                                    |

Table 59. IBM Campaign error codes (continued)

| Code  | Error Description                                                                              |
|-------|------------------------------------------------------------------------------------------------|
| 16737 | No fields are checked                                                                          |
| 16738 | Table or field name not specified                                                              |
| 16739 | Derived variable name conflicts with Campaign Generated Field                                  |
| 16740 | Required value missing.                                                                        |
| 16741 | Unable to translate existing expression for Point & Click mode. Restart with empty expression? |
| 16742 | Unable to translate expression for Point & Click mode. Switch to Text Builder mode?            |
| 16743 | Current expression is not valid. Switch to Text Builder mode anyway?                           |
| 16744 | Tree expansion error                                                                           |
| 16745 | Folder already exists.                                                                         |
| 16746 | About to execute trigger command. Are you sure?                                                |
| 16747 | Derived variable name conflicts with an existing Persistent Derived Field                      |
| 16748 | No delimiter is specified.                                                                     |
| 16750 | No derived variable name has been specified.                                                   |
| 16751 | Selected segments have different audience levels                                               |
| 16752 | Illegal field name. User Variable values may only be set in a Select process                   |
| 16753 | The full name is too long.                                                                     |
| 16754 | An administrator must define at least one audience level before a new table can be created.    |
| 16755 | Remap of Optimized List table is not permitted.                                                |
| 16756 | Audience ID Field not compatible: type mismatch.                                               |
| 16757 | Output cell name is too long.                                                                  |
| 16758 | Process name is too long.                                                                      |
| 16759 | Output cell name is empty.                                                                     |
| 16760 | Security policy not specified.                                                                 |
| 16761 | Security policy is restored to the original policy.                                            |
| 16762 | Start or end date missing.                                                                     |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                        |
|-------|------------------------------------------------------------------------------------------|
| 16763 | Invalid date specification.                                                              |
| 16764 | No dates selected.                                                                       |
| 16765 | End date cannot be earlier than start date.                                              |
| 16769 | Data Packaging internal error.                                                           |
| 16770 | Package name not specified.                                                              |
| 16771 | View Log permission is required to access log entries.                                   |
| 16772 | Dictionary file name cannot be the same as data file name.                               |
| 16773 | Data Package folder already exists. Existing content within that folder will be deleted. |
| 16901 | Stored template internal error.                                                          |
| 16903 | The template name is empty.                                                              |
| 16906 | Stored template unknown function tag.                                                    |
| 16908 | Templates directory does not exist.                                                      |
| 16909 | Templates directory is invalid.                                                          |
| 16910 | There is already a stored template of the same name.                                     |
| 17001 | Stored catalog internal error.                                                           |
| 17003 | The catalog name is empty.                                                               |
| 17006 | Stored catalog unknown function tag.                                                     |
| 17008 | Catalogs directory does not exist.                                                       |
| 17009 | Catalogs directory is invalid.                                                           |
| 17012 | The catalog file extension is invalid. Only 'cat' and 'xml' are allowed.                 |
| 17013 | Target catalog file extension is not same as original.                                   |
| 17014 | Campaign Data Folder Identifier is empty.                                                |
| 17015 | Campaign Data Folder Path is empty.                                                      |
| 17016 | Duplicate Identifiers in Campaign Data Folders.                                          |
| 17017 | There is already a stored catalog of the same name.                                      |

Table 59. IBM Campaign error codes (continued)

| Code  | Error Description                                                                                           |
|-------|-------------------------------------------------------------------------------------------------------------|
| 17018 | Catalog name conflicts with an existing catalog on another security policy. Please choose a different name. |
| 17101 | Group process internal error.                                                                               |
| 17102 | No input is selected.                                                                                       |
| 17103 | No audience is chosen.                                                                                      |
| 17104 | No query string.                                                                                            |
| 17105 | No filter query string.                                                                                     |
| 17106 | No based-on function is chosen.                                                                             |
| 17107 | No based-on field is chosen.                                                                                |
| 17108 | No level is selected.                                                                                       |
| 17109 | No count operator is chosen.                                                                                |
| 17110 | Group process cell locking error.                                                                           |
| 17112 | Group process unknown function tag.                                                                         |
| 17113 | Group process report locking error.                                                                         |
| 17114 | The chosen audience is not in the selected table.                                                           |
| 17115 | An invalid audience level is chosen.                                                                        |
| 17116 | Unknown parameter for Audience Process.                                                                     |
| 17117 | Command not allowed in Reader mode                                                                          |
| 17201 | List box selection error                                                                                    |
| 17202 | Dialog initialization error                                                                                 |
| 17203 | Tree expansion error                                                                                        |
| 17204 | Combo box insertion error                                                                                   |
| 17205 | Invalid cell size limit.                                                                                    |
| 17302 | Optimize process internal error.                                                                            |
| 17303 | Optimize process cell locking error.                                                                        |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                                        |
|-------------|---------------------------------------------------------------------------------|
| 17304       | Optimize process table locking error.                                           |
| 17306       | Optimize process unknown function tag error.                                    |
| 17307       | Optimize process report locking error.                                          |
| 17308       | No input is selected.                                                           |
| 17309       | No fields are selected for export.                                              |
| 17310       | Invalid field name.                                                             |
| 17311       | String conversion error.                                                        |
| 17312       | Selected input cells have different audience levels.                            |
| 17313       | Empty or Duplicate Cell Codes.                                                  |
| 17314       | Proposed contact table is not defined in selected Contact Optimization session. |
| 17315       | DB source is not defined in selected Contact Optimization session.              |
| 17316       | Required field is missing from proposed contact table.                          |
| 17317       | Selected Contact Optimization session is currently running.                     |
| 17318       | Database authentication required.                                               |
| 17319       | No Contact Optimization session is selected.                                    |
| 17321       | Contact Date is invalid.                                                        |
| 17322       | Contact Date is expired.                                                        |
| 17323       | Command not allowed in Reader mode                                              |
| 17324       | Selected offer not found.                                                       |
| 17325       | Channel not found for selected offer.                                           |
| 17326       | Cell is missing offer assignment.                                               |
| 17327       | Internal Error: Offer is missing.                                               |
| 17328       | Internal Error: Channel is missing.                                             |
| 17329       | Score field is not specified.                                                   |
| 17330       | Missing or retired Offer or Offer List detected.                                |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                               |
|-------|-------------------------------------------------------------------------------------------------|
| 17331 | Tried to run flowchart while associated Contact Optimization session was running.               |
| 17332 | Failed while trying to write to the proposed attribute table.                                   |
| 17333 | One or more export field is unmapped.                                                           |
| 17334 | Tried to delete optimize process box while associated Contact Optimization session was running. |
| 17351 | Selection error                                                                                 |
| 17352 | Selection not found                                                                             |
| 17402 | CreateSeg process internal error.                                                               |
| 17403 | CreateSeg process cell locking error.                                                           |
| 17404 | CreateSeg process unknown function tag.                                                         |
| 17405 | No input is selected.                                                                           |
| 17406 | Segment name not unique within the specified folder.                                            |
| 17407 | Segment name not specified.                                                                     |
| 17408 | Invalid segment name.                                                                           |
| 17409 | Invalid security policy.                                                                        |
| 17410 | Security policy not specified.                                                                  |
| 17411 | Selected input cells have different audience levels.                                            |
| 17412 | Bin file creation is OFF and No Temp Table DS is specified.                                     |
| 17413 | Invalid Data Source Name for Segment Temp Tables                                                |
| 17452 | Segment name not specified                                                                      |
| 17502 | Internal error.                                                                                 |
| 17503 | Cell locking error                                                                              |
| 17504 | Table locking error.                                                                            |
| 17505 | Unknown function tag error.                                                                     |
| 17507 | Report locking error.                                                                           |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                                             |
|-------------|--------------------------------------------------------------------------------------|
| 17509       | No input is selected.                                                                |
| 17510       | Fulfillment page: No export table is selected.                                       |
| 17511       | Personalization page: No export fields are chosen.                                   |
| 17512       | Log page: No table is chosen to log contacts.                                        |
| 17513       | Log page: No fields are chosen to log contacts.                                      |
| 17514       | Getting cell field infomation error.                                                 |
| 17515       | No trigger is specified.                                                             |
| 17516       | Personalization page: no sort field is chosen.                                       |
| 17518       | Invalid field name.                                                                  |
| 17519       | Double to string conversion error.                                                   |
| 17521       | Fulfillment page: No export file is chosen.                                          |
| 17522       | Contact list page: No delimiter is specified.                                        |
| 17523       | Fulfillment page: No export dictionary file is chosen.                               |
| 17524       | Log page: No file is chosen to log contacts.                                         |
| 17525       | Log page: No delimiter is specified for contacts.                                    |
| 17526       | Log page: No dictionary file is specified for contacts.                              |
| 17527       | Fulfillment Page: Selected Data Export Filename contains Invalid Path                |
| 17528       | Fulfillment Page: Selected Data Dictionary for Export File contains an Invalid Path. |
| 17529       | Personalization Page: No skip duplicate field is chosen.                             |
| 17530       | Fulfillment Page: Update Records require a base table with audience same as input.   |
| 17531       | Log Page Contact: Update Records require a base table with audience same as input.   |
| 17532       | Selected input cells have different audience levels.                                 |
| 17533       | Empty or Duplicate Cell Codes.                                                       |
| 17534       | Log page: No skip duplicate field is chosen.                                         |
| 17535       | Fulfillment page: Selected Data Dictionary File does not exist.                      |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                                                    |
|-------|--------------------------------------------------------------------------------------------------------------------------------------|
| 17538 | Offer codes are not unique.                                                                                                          |
| 17539 | Command not allowed in Reader mode                                                                                                   |
| 17540 | Invalid Offer ID in eMessage Document                                                                                                |
| 17541 | Empty audience level.                                                                                                                |
| 17542 | No offers are selected.                                                                                                              |
| 17544 | Cell is missing offer assignment.                                                                                                    |
| 17549 | Error returned from eMessage server during run.                                                                                      |
| 17550 | Internal error: unknown eMessage status.                                                                                             |
| 17552 | List box selection error                                                                                                             |
| 17553 | Selection not found                                                                                                                  |
| 17554 | Offer name or code is empty.                                                                                                         |
| 17555 | The specified records are cleared from Contact History, Detailed Contact History, and Treatment tables.                              |
| 17557 | You are about to permanently delete ALL contact history entries ever created by this process. Are you sure you want to continue?     |
| 17558 | Invalid expiration duration specified.                                                                                               |
| 17559 | Document settings updated from eMessage server.                                                                                      |
| 17560 | Duplicate tracking codes not allowed.                                                                                                |
| 17561 | Cannot determine tracking audience level.                                                                                            |
| 17562 | Invalid number of contacts                                                                                                           |
| 17563 | Invalid number of responses                                                                                                          |
| 17564 | Invalid or missing start/end date                                                                                                    |
| 17565 | Start date is later than end date                                                                                                    |
| 17566 | You are about to permanently delete the selected contact history entries created by this process. Are you sure you want to continue? |
| 17567 | There are no contact history entries created by this process.                                                                        |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                                                                                                   |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17568 | Records for this process are cleared from Contact History, Detailed Contact History tables, and Treatment tables.                                                                   |
| 17570 | Missing field assignment for document PF.                                                                                                                                           |
| 17571 | Missing field assignment for offer parameter.                                                                                                                                       |
| 17572 | Missing field assignment for tracking field.                                                                                                                                        |
| 17573 | eMessage directory is invalid.                                                                                                                                                      |
| 17574 | Missing field assignment for content type.                                                                                                                                          |
| 17575 | eMessage is still completing the last operation. Please try again later.                                                                                                            |
| 17576 | No eMessage document selected.                                                                                                                                                      |
| 17577 | Unknown parameter.                                                                                                                                                                  |
| 17578 | Invalid parameter.                                                                                                                                                                  |
| 17579 | DOM creation error.                                                                                                                                                                 |
| 17580 | Multiple cells selected. Assignment rule will apply to all selected cells.                                                                                                          |
| 17581 | Internal Error: Offer is missing.                                                                                                                                                   |
| 17582 | Internal Error: Channel is missing.                                                                                                                                                 |
| 17583 | Contact History is tracked at a different audience level. All audience ID fields must be specified.                                                                                 |
| 17584 | No output queue selected.                                                                                                                                                           |
| 17585 | Output queue not found.                                                                                                                                                             |
| 17586 | Required field not found in output queue.                                                                                                                                           |
| 17587 | Log page: Contact History Table is not yet defined for this audience level.                                                                                                         |
| 17588 | Output page advanced settings: Contact History Table is not yet defined for this audience level.                                                                                    |
| 17589 | Output page advanced settings: Response History Table is not yet defined for this audience level.                                                                                   |
| 17590 | A new offer parameter name has been added to one of the offer URLs since the process box was configured. You must map a field to this offer parameter before you can begin the run. |
| 17591 | The process box needs to be reconfigured due to a Personalization Field change in the eMessage document.                                                                            |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                      |
|-------|--------------------------------------------------------------------------------------------------------|
| 17592 | Missing or retired Offer or Offer List detected.                                                       |
| 17593 | Assigned Offer List does not contain any offers.                                                       |
| 17595 | Cannot clear contact history. Response history exists for the selected treatments.                     |
| 17596 | No contact history records found.                                                                      |
| 17597 | Contact history exists for current run. History must be cleared before starting branch or process run. |
| 17599 | Specified contact status code is not defined in the system.                                            |
| 17600 | Duplicate field names. Output table cannot be created.                                                 |
| 17602 | Response process internal error.                                                                       |
| 17603 | Response process cell locking error.                                                                   |
| 17604 | Response process table locking error.                                                                  |
| 17605 | Response process unknown function tag error.                                                           |
| 17607 | Response process report locking error.                                                                 |
| 17608 | Response process getting cell field infomation error.                                                  |
| 17611 | Double to string conversion error.                                                                     |
| 17613 | Empty audience level.                                                                                  |
| 17614 | No input is selected.                                                                                  |
| 17615 | Selected input cells have different audience levels.                                                   |
| 17616 | No offers selected.                                                                                    |
| 17617 | One or more offers are missing cell assignments.                                                       |
| 17618 | Offer Code Field is missing.                                                                           |
| 17620 | Campaign Code Field is missing.                                                                        |
| 17621 | Cell Code Field is missing.                                                                            |
| 17622 | Channel Code Field is missing.                                                                         |
| 17623 | Product ID Field is missing.                                                                           |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                                                                   |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 17624 | No table is chosen to log for other destination.                                                                                                    |
| 17625 | Update Records require a base table with audience same as tracking.                                                                                 |
| 17626 | No file is chosen to log for other destination.                                                                                                     |
| 17627 | No delimiter is specified for logging to delimited file.                                                                                            |
| 17628 | No dictionary file is specified for logging.                                                                                                        |
| 17629 | No fields are chosen to log for other destination.                                                                                                  |
| 17630 | Invalid field name.                                                                                                                                 |
| 17631 | Offer with selected response type is already added in this process.                                                                                 |
| 17632 | Response type(s) not specified.                                                                                                                     |
| 17633 | Response channel is not specified.                                                                                                                  |
| 17634 | Response date field is not a date type field.                                                                                                       |
| 17635 | Response date value is not in the specified format.                                                                                                 |
| 17636 | No offer is selected                                                                                                                                |
| 17637 | Internal Error: Offer not found.                                                                                                                    |
| 17638 | Internal Error: Contact channel not found.                                                                                                          |
| 17639 | Internal Error: Campaign not found.                                                                                                                 |
| 17640 | Offer field must be specified to track all incoming responses.                                                                                      |
| 17641 | When tracking at a different audience level from the input cell, all audience ID fields must be specified under 'Additional Fields' in the Log tab. |
| 17642 | Default response type not found in the User Response Type Table                                                                                     |
| 17643 | Default contact status not found in the Contact Status Table                                                                                        |
| 17644 | No treatment mapping specified.                                                                                                                     |
| 17651 | List box selection error                                                                                                                            |
| 17653 | Response name is empty                                                                                                                              |
| 17654 | Records for this Process are cleared from Response History and Tracking tables.                                                                     |

*Table 59. IBM Campaign error codes (continued)*

| Code  | Error Description                                                                                   |
|-------|-----------------------------------------------------------------------------------------------------|
| 17655 | About to clear Response History and Tracking table records for this Process. Are you sure?          |
| 17656 | Response channel is not specified.                                                                  |
| 17657 | Records for this Process are cleared from Contact History and Tracking tables.                      |
| 17658 | About to clear Contact History and Tracking table records for this Process. Are you sure?           |
| 17659 | Contact History is tracked at a different audience level. All audience ID fields must be specified. |
| 17702 | Cube process internal error.                                                                        |
| 17703 | Cube process cell locking error.                                                                    |
| 17704 | Cube process unknown function tag.                                                                  |
| 17705 | No input cell or segment.                                                                           |
| 17706 | Segment name not unique.                                                                            |
| 17713 | No output cube specified.                                                                           |
| 17714 | Dimension no longer exists.                                                                         |
| 17715 | Selected Segment is based on an unknown audience level.                                             |
| 17717 | Report locking error.                                                                               |
| 17718 | Invalid field name.                                                                                 |
| 17752 | Cube name is missing.                                                                               |
| 17753 | There are no dimensions available.                                                                  |
| 17754 | There are no dimensions specified for this cube.                                                    |
| 17755 | Invalid configuration: duplicate dimensions selected.                                               |
| 17800 | Error formatting date for display.                                                                  |
| 17801 | Error parsing user input date.                                                                      |
| 17802 | Error formatting currency value for display.                                                        |
| 17803 | Error parsing user input currency value.                                                            |
| 17804 | Error formatting number for display.                                                                |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                                                                     |
|-------------|--------------------------------------------------------------------------------------------------------------|
| 17805       | Error parsing user input number.                                                                             |
| 17806       | Error formatting time for display.                                                                           |
| 17807       | Client Stored List Internal Error.                                                                           |
| 17808       | Error formatting datetime for display.                                                                       |
| 19000       | Internal Error: Unknown function tag.                                                                        |
| 19001       | Memory error                                                                                                 |
| 19002       | DOM exception                                                                                                |
| 19003       | Pipe open error                                                                                              |
| 19005       | End date specified is earlier than start date                                                                |
| 19006       | Invalid Report name                                                                                          |
| 19007       | Invalid Attribute name                                                                                       |
| 19010       | Invalid character(s) were found in a Numeric Field.                                                          |
| 19011       | Segment is in use. Cannot modify.                                                                            |
| 19013       | Invalid cube specification                                                                                   |
| 19014       | Invalid Effective Date                                                                                       |
| 19015       | Invalid Expiration Date                                                                                      |
| 19016       | Expiration Date specified is earlier than Effective Date                                                     |
| 19018       | Folder names must be unique within the same folder. The specified folder name already exists in this folder. |
| 19019       | Cannot remove folder: folder contents (files/subfolders) must first be removed.                              |
| 19020       | Folder contains in use segment(s). Cannot move.                                                              |
| 19021       | Cannot delete.                                                                                               |
| 19022       | Cannot move.                                                                                                 |
| 19023       | Folder contains active segment(s). Cannot delete.                                                            |
| 19024       | Folder contains inactive segment(s). Cannot delete.                                                          |

Table 59. IBM Campaign error codes (continued)

| Code  | Error Description                                                                                             |
|-------|---------------------------------------------------------------------------------------------------------------|
| 19025 | No destination folder was selected. Please select a destination folder and retry.                             |
| 19026 | Invalid folder ID specified.                                                                                  |
| 19027 | Session name must be unique within the same folder. The specified session name already exists in this folder. |
| 19028 | Cannot move Campaign/Session because it contains an active Flowchart.                                         |
| 19029 | Cannot move. Move will result in duplicate segment names in destination folder.                               |
| 19030 | An object having the destination name already exists.                                                         |
| 19500 | Process internal error.                                                                                       |
| 19501 | String conversion error.                                                                                      |
| 19502 | Selected Contact Optimization session not found.                                                              |
| 20000 | Internal Error: Unknown function tag.                                                                         |
| 20002 | DOM exception                                                                                                 |
| 20003 | Pipe open error                                                                                               |
| 20004 | Offer code not unique                                                                                         |
| 20005 | End date specified is earlier than start date                                                                 |
| 20006 | Invalid Report name                                                                                           |
| 20007 | Invalid Attribute name                                                                                        |
| 20008 | Offer is used. Cannot delete.                                                                                 |
| 20009 | Folder contains used offer(s). Cannot delete.                                                                 |
| 20010 | Invalid character(s) were found in a Numeric Field.                                                           |
| 20011 | Segment is in use. Cannot modify.                                                                             |
| 20012 | Offer version name not unique                                                                                 |
| 20013 | Invalid cube specification                                                                                    |
| 20014 | Invalid Effective Date                                                                                        |
| 20015 | Invalid Expiration Date                                                                                       |

*Table 59. IBM Campaign error codes (continued)*

| <b>Code</b> | <b>Error Description</b>                                                                                     |
|-------------|--------------------------------------------------------------------------------------------------------------|
| 20016       | Expiration Date specified is earlier than Effective Date                                                     |
| 20017       | Offer version code not unique                                                                                |
| 20018       | Folder names must be unique within the same folder. The specified folder name already exists in this folder. |
| 20019       | Cannot remove folder: folder contents (files/subfolders) must first be removed.                              |
| 20020       | Folder contains in use segment(s). Cannot move.                                                              |
| 20021       | Cannot delete.                                                                                               |
| 20022       | Cannot move.                                                                                                 |
| 20023       | Folder contains active segment(s). Cannot delete.                                                            |
| 20024       | Folder contains inactive segment(s). Cannot delete.                                                          |

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If you are not a designated support contact at your company, contact your IBM administrator for information.

**Note:** Technical Support does not write or create API scripts. For assistance in implementing our API offerings, contact IBM Professional Services.

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- A brief description of the nature of your issue.
- Detailed error messages that you see when the issue occurs.
- Detailed steps to reproduce the issue.
- Related log files, session files, configuration files, and data files.
- Information about your product and system environment, which you can obtain as described in "System information."

### System information

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You can access the About page by selecting **Help > About**. If the About page is not accessible, check for a `version.txt` file that is located under the installation directory for your application.

### Contact information for IBM technical support

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**Note:** To enter a support request, you must log in with an IBM account. This account must be linked to your IBM customer number. To learn more about associating your account with your IBM customer number, see **Support Resources > Entitled Software Support** on the Support Portal.



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