Version 8 Release 5
April 13, 2012

Administrator's Guide

IBM

Note

Before using this information and the product it supports, read the information in "Notices" on page 169.

This edition applies to version 8, release 5, modification 0 of IBM Unica Marketing Operations (product number 5725-D24) and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Chapter 7. Forms 79

Chapter 8. Using Form Attributes . . . 99

Chapter 9. Working with Metrics . . . 119

Chapter 1. Contacting IBM Unica technical support

If you encounter a problem that you cannot resolve by consulting the documentation, your company's designated support contact can log a call with IBM® Unica® technical support. Use the information in this section to ensure that your problem is resolved efficiently and successfully.

If you are not a designated support contact at your company, contact your IBM Unica administrator for information.

Information to gather

Before you contact IBM Unica technical support, gather the following information:
- A brief description of the nature of your issue.
- Detailed error messages 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

When you call IBM Unica technical support, you might be asked to provide information about your environment.

If your problem does not prevent you from logging in, much of this information is available on the About page, which provides information about your installed IBM Unica applications.

You can access the About page by selecting **Help > About**. If the About page is not accessible, you can obtain the version number of any IBM Unica application by viewing the `version.txt` file located under the installation directory for each application.

Contact information for IBM Unica technical support

For ways to contact IBM Unica technical support, see the IBM Unica Product Technical Support website: (http://www.unica.com/about/product-technical-support.htm).

Chapter 2. Administering IBM Unica Marketing Operations

With IBM Unica Marketing Operations, you can organize the people, tasks, and budget associated with any marketing program in your organization while reducing costs and time to market.

Marketing Operations is a web-based application.

System requirements

Hardware, operating system, web server, and database requirements are described in the *IBM Unica Marketing Operations Recommended Software Environments and Minimum System Requirements* document.

Client machines

Client machines should meet the following configuration requirements.

- On the Internet Explorer **Tools > Internet Options > Settings** dialog box, in the **Check for newer versions of stored pages** section, **Every visit to the page** should be selected.
- If pop-up blocker (ad blocker) software is installed on the client machine, Marketing Operations may not function properly. We recommend allowing pop-ups for the Marketing Operations URL (for example, `http://myMachine:7001/plan`).

About managing users

You create and manage users and user groups in the IBM Unica Marketing Platform. As a best practice, set the locale preference for IBM Unica Marketing Operations administrators to match the default locale for your Marketing Operations installation. The installation default locale is defined by the defaultlocale parameter under **Settings > Configuration > Marketing Operations.** For details on creating users, logins and groups, setting user locales, and assigning application access, see the *IBM Unica Marketing Platform Administrator's Guide.*

Once you create users in the Marketing Platform, you must synchronize the user tables in Marketing Operations with the platform user tables.

Then you assign access rights for the authorized users by assigning security policies within Marketing Operations.

If you do not see the users you expect in Marketing Operations, make sure the group has application access rights to Marketing Operations and you have synchronized the user tables.

IBM Unica Marketing Operations administration process overview

After you install and set up IBM Unica Marketing Operations, users can sign in and use it by following the procedures in the *IBM Unica Marketing Operations User's Guide*. For best results, all administrators should read the *IBM Unica Marketing Operations User's Guide* to gain an understanding of the product before attempting to set it up. To install and set up Marketing Operations, follow these procedures.

1. Install Marketing Operations.
2. Configure Marketing Operations.

   For more information about installing and configuring Marketing Operations, see the *IBM Unica Marketing Operations Installation Guide*.
3. Create templates. See Chapter 5, "Introducing Templates," on page 35.
4. Set up a security policy and configure alerts. See Chapter 10, "Setting Up Security," on page 127 and Chapter 11, "Setting Up Alerts," on page 139.
5. Set up assets. See Chapter 12, "Setting Up Assets," on page 147.
6. Set up list definitions. See Chapter 14, "Defining Lists," on page 153.

Administrative settings

When you select **Settings > Marketing Operations Settings**, the system displays the Administrative Settings page. This page contains the following links:

Link/Section	Description
User Personalization section	This section contains links for users to customize Marketing Operations in order to view and receive information that is important to them. See the *IBM Unica Marketing Operations User's Guide* for details.

Restricted Options

Link/Section	Description
Security Policy Settings	Contains links to all security policies defined in your system. See "Creating new security policies" on page 132 for details.
User Permissions	Displays a list of all users authorized to use Marketing Operations, organized by the group(s) to which they are assigned. See "To assign security roles" on page 134 for details.
Synchronize Users	Synchronizes the users in Marketing Operations with the users in the IBM Unica Marketing Platform. See "About synchronizing users" on page 6 for details. When you synchronize users in a clustered environment, any changes propagate to the other servers when they next synchronize with Marketing Platform.
Synchronize Menus	Synchronize the menus in the Marketing Platform with the menus defined in Marketing Operations.

Accessible Options

Link/Section	Description
Default Alert Subscriptions	Opens a page for setting up and editing default alert subscriptions for Marketing Operations objects. See "About setting default alert subscriptions" on page 141 for details.

Root-Level Object Definitions

Link/Section	Description
Account Definitions	Contains links for managing Marketing Operations accounts. **Note:** This menu item is only available if you have purchased the Financial Management module for Marketing Operations.
Budget Line Item Columns	Opens a page for adding text columns to the Line Item Details tables on Budget tabs.
Asset Library Definitions	Contains links for managing asset libraries. See Chapter 12, "Setting Up Assets," on page 147 for details.

Other Options

Link/Section	Description
List Definitions	Contains links to the available lists where an administrator can populate or define list values. See "List types" on page 153 for details.
Template Configuration	Contains links to functions concerning template components, template construction, and bulk operations (upgrade, import and export). See Chapter 6, "Administering Templates," on page 47 for details. **Note:** In a clustered environment, administrators should shut down all but one server before performing any template configuration tasks.
Non-working Business Days	Opens a page for updating the set of system-wide non-work dates. See "About system wide non-work dates" on page 6 for details.
Manage Published Searches	Opens a page for publishing searches that have been saved by Marketing Operations users. See "About managing published searches" on page 10 for details.
Marketing Object Type Settings	Opens a page where you can view and manage the marketing object types for your system. See "Adding marketing object types" on page 23 for details. **Note:** In a clustered environment, administrators should shut down all but one server before performing any marketing object configuration tasks.
Trigger Bindings	Opens a page listing triggers defined in the system and details about how they are bound to procedures. See "Triggers" on page 7 for details.
Customize Alerts	Opens a page where you can change the text for alerts for specified events. See Chapter 11, "Setting Up Alerts," on page 139 for details.
Marketing Operations Upgrade	Opens a page where you can select Marketing Operations components to upgrade. See the *IBM Unica Marketing Operations Installation Guide* for details.

About synchronizing users

You can manually synchronize the IBM Unica Marketing Operations user tables with the IBM Unica Marketing Platform user tables. This procedure enables new users to log in to Marketing Operations and for changes to take effect before the next scheduled synchronization as set by the `usermangerSyncTime` parameter under **Settings > Configuration > Marketing Operations > umoConfiguration** file. Synchronizing pulls over all the user information from the Marketing Platform to Marketing Operations.

To synchronize users manually

1. Log into Marketing Operations.
2. Click **Settings**>**Marketing Operations Settings**.
3. Click **Synchronize Users**.

About system wide non-work dates

IBM Unica Marketing Operations allows you account for time where, by default, no work will be done on tasks. Marketing Operations does not include non-work time in task duration calculations.

You can specify non-work time in date ranges or as single dates.

To add a non-work date

1. Select **Settings > Marketing Operations Settings**.
2. In the Other Options section, click **Non-working Business Days**.

   The Non-working Business Days page appears.
3. Enter a start and end date for the new non-work time. The end date defaults to the start date, for easily entering single-date events.
4. Type a name for the non-work time in the **Name** field.
5. Select a type for the event from the **Type** drop-down list.

   Note: Use the List Definitions page in the Administration section to add non-work time types.
6. Click **Accept**.

   A message appears, reminding you to click Save Changes for your changes to take effect.

   Note: You cannot add past dates (that is, dates that have already occurred).
7. Click:
   - **Save Changes** to save your changes.
   - **Revert to Saved** to undo your changes and continue editing.
   - **Cancel** to undo your changes and return the Administration page.
8. If your changes affect any projects, the system displays a summary screen, detailing the projects affected and the name and email address for the project owner.

To remove a non-work date

1. Select **Settings > Marketing Operations Settings**.
2. In the Other Options section, click **Non-working Business Days**.

The Non-working Business Days page appears.

3. Select a date or dates from the list.
4. Click **Remove**.

   A message appears, reminding you to click Save Changes for your changes to take effect.

   Note: You cannot delete past dates (that is, dates that have already occurred).
5. Click:
   - **Save Changes** to save your changes,
   - **Revert to Saved** to undo your changes and continue editing, or
   - **Cancel** to undo your changes and return the Administration page.
6. If your changes affect any projects, the system displays a summary screen, detailing the projects affected and the name and email address for the project owner.

To change the list of non-working business dates

Typically, you define the list of holidays and other non-working dates at the beginning of the calendar year, before marketing calendar details are set. However, you may need to change the set of non-working days after dates for tasks, projects, and programs have already been set. In this case, the process for changing the list of non-working business days is as follows.

1. Make any changes to the list of non-working business days.
2. If your changes affect any projects or tasks, you should use the Non-working Business Dates summary page to notify affected project owners.

Non-working Business Dates summary page

The Non-working Business Dates summary page contains the following fields:

Field	Description
Name	The name of the project owner of the affected project(s).
Email Address	The email address of the project owner of the affected project(s).
Project list	A list of affected projects, and the actual non-working dates that were added or removed that occur during the duration of the project.

Use this page to send email notification to project owners whose projects are affected by your changes. You can cut and paste the text in the project list field into your email, so the project owners can quickly assess the impact of your changes.

Triggers

You can set up triggers so that events related to certain objects cause execution of a procedure.

Assume you want to insert data into a database whenever the state of a particular project changes from draft to active. You can use a trigger to do this by defining the following:

- A procedure to insert a record into an external database table
- A project template, DirectMail

- A trigger binding for the DirectMail template, set to fire when the state of a project changes (for example from draft to active).

If you create a project based on the DirectMail template, the system calls the procedure when the specified state change occurs.

The following trigger rules apply:
- Triggers occur just before or just after an event.
- Triggers are executed on a subset of system events, including those involving projects, requests, marketing objects, approvals, tasks, workflow spreadsheets, grid rows, users, invoices, budgets, accounts, and resources.

In general, define triggers at the most granular level possible. For example, rather than setting a trigger binding for any object, configure a trigger binding for a particular event for a particular project template.

You can view the list of trigger bindings for your installation by selecting **Settings > Marketing Operations Settings** and clicking **Trigger Bindings**.

To add a trigger

You must perform several tasks before a trigger automatically fires when a certain condition is met for an object. These steps describe the process of adding triggers. Note that you must do some of the steps outside of IBM Unica Marketing Operations.

1. Create a procedure in Java, implementing the `IProcedure` interface.
2. Put the procedure into the procedure folder. You specify this folder in the `integrationProcedureDefintionPath` parameter under **Settings > Configuration > Marketing Operations > umoConfiguration > integrationServices**.
3. Build the procedure.
4. Add the procedure to the definition file, `procedure-plugins.xml` (located in the above folder).
5. Restart the web server.
6. Log into Marketing Operations, and navigate to the **Trigger Bindings** screen (**Settings > Marketing Operations Settings > Trigger Bindings**).
7. Click **Add New Trigger Binding**.
8. Fill in the fields in the Add New Trigger screen, and click **Save**.

   Now, when the condition is met for this particular object, the procedure bound to this trigger condition executes.

To add or edit a trigger binding

1. Select **Settings > Marketing Operations Settings** and click **Trigger Bindings** to display the current trigger bindings in the system.
2. Click **Add New Trigger Binding**, or **Edit** for an existing binding.
3. Fill in the details for the trigger binding.

   Note that you must choose **Validating** or **Deferred** (checking one unchecks the other). The default is **Deferred**.
4. Click **Save** to save the binding and return to the Trigger Binding list screen.

Trigger bindings details

When you create a trigger binding, you specify the following information. This information is then displayed in the Triggers table.

Column	Description
Name	Text name for the binding. Names must be unique.
Marketing Operations Object	The object the trigger is defined for. The default is **Any Marketing Operations Object**.
Template	The template to use as a filter. The template provided is a filter that applies to all instances of objects for that template. Projects are objects that have templates. So specifying a filter criterion that restricts the search to a specific template. The default for this criterion is **Any Template**, meaning either that all templates for the object are included in the filter, or that the object specified does not have templates to consider.
Context	The context for the trigger. For example, the context could be a task or workflow. A default of **Any** means that any context is considered for the filter criterion.
Event	An event for the filter operation. Only events that correspond to the selected object, template, and context are displayed, unless **Any Event** was selected for the object, in which case all events are displayed.
Deferred	The procedure runs sometime after the transaction is committed. The transaction that enclosed the trigger it not present in the procedure context. The procedure is provided a separate transaction context.
Validating	A validating trigger invokes a procedure to validate data before the current transaction is committed. The trigger sets up the procedure call with an enclosing context, which contains the database transaction.
Exclusive	Exclusive bindings denote a procedure that may not be executed with other procedures, even if multiple bindings match. (If multiple exclusive bindings match, all the exclusive bindings are executed.) If this box is not checked, the binding is inclusive. Inclusive bindings denote procedures that will be executed with other procedures if more than one trigger's selection criterion matches. If any matching procedure is exclusive, then only an exclusive matching procedure will be executed. Only the most specific exclusive bindings match. So, for example if you have three exclusive triggers, a global one, one on all projects, and one on a particular project template, then if the event fired matches all three, only the one for the particular project template runs.
Procedure	The procedure bound to the trigger; that is, the procedure to execute when the trigger fires.

About customizing the Budget tab

You can add up to three text column to the Line Item Details tables that appear on the Budget tabs for programs and projects. This is a global change; the text columns you specify display on all Line Items Details tables in all programs and projects in your Marketing Operations installation. Changes to the Budget tab apply to both new and existing programs and projects.

Note: Budget tabs require the Financial Management module. If you do not have the module, the Budget Line Item Columns option is not visible.

About disabling and removing text columns

You can remove a text column from the Line Item Details tables without deleting the label from the administration settings by clicking Disable. Once you disable a text column, the Disable option is replaced with Enable.

You can delete a text column from the Line Item Details tables and the administration settings by clicking Remove. When you click Save Changes, the text column fields are renumbered if necessary and new fields are added at the bottom of the screen to keep the total number of text colum fields in the administration settings at three.

To add or edit text columns in the Line Item Details table

1. Select **Settings > Marketing Operations Settings** and click **Budget Line Item Columns**.
2. Enter the column label you want for each column.

   Entering label text automatically enables the column.
3. Click **Save Changes**.

Enabling the vendor column for budgets

If you want the Vendor column to be visible when users are editing budget line items, you must set the configuration parameters `FMPrgmVendorEnabled` and `FMProjVendorEnabled` to `true` under **Settings > Marketing Operations > umoConfiguration**.

About managing published searches

All IBM Unica Marketing Operations users have the ability to save any search they perform. After users specify the search criteria, they can save that criteria for later use. As an administrator, you can then publish these saved searches. Publishing a search makes it available to all Marketing Operations users.

To make a published search private

If someone has previously published a search, and it is no longer needed, you can change it back to a private search.

1. Select **Settings > Marketing Operations Settings**.

   The Administrative Settings page opens.
2. Click **Manage Published Searches**.

   The Published Searches page opens.
3. Use the **<<** button to remove searches from the **Publish Saved Search** list box.
4. Click **Save Changes.**

Any searches you removed from the Published Saved Search list box are now private, and can be deleted if required.

Supporting multiple locales

If your IBM Unica Marketing Operations users work in multiple locales, you can configure various areas of the application to support multiple languages.

- Check to ensure that the parameters `supportedLocales` and `defaultLocale` under **Settings > Configuration > Marketing Operations** were set correctly during installation.
- Localize the template properties.
- Localize the form attributes and metrics.
- Localize lists (including user roles for project templates).

Localized format and symbol settings

Localized format and symbol settings are stored in the `format_symbols.xml` file for each supported locale. The `format_symbols.xml` file for a locale is stored in the `\conf\<locale>` folder under your Marketing Operations installation.

Note: IBM discourages editing the `format_symbols.xml` file.

If you do edit the `format_symbols.xml` file, follow these guidelines:

- In Windows, you must save the file in UTF-8 format, rather than the Windows default of ANSI.
- If you edit the date/time settings, you must use the same format for both `<date-format>` and `<date-time-format>`. Otherwise, you will receive errors while working with Marketing Operations.

Administering IBM Unica Marketing Operations in a clustered environment

If you are running IBM Unica Marketing Operations in a clustered environment, we recommend you shut down all but one Marketing Operations instance when you perform system administration tasks.

Viewing system locks

IBM Unica Marketing Operations includes a tool for viewing the items currently locked within the application. To use the tool, enter the following URL into a browser window, using the hostname and port of your Marketing Operations server:

```
http://<hostname>:<port>/MktOps/affiniumplan.jsp ?cat=adminobjectlocklist
```

In the login screen, enter the credentials for an administrator-level account. The object lock browser screen appears. The lock browser displays information about the current locks, grouped by objects, grids, and grid rows. The screen displays the information about each lock (user holding the lock, the object ID of the locked object, and so on).

Increasing Marketing Operations performance

This section describes configuration parameters you can set or change to increase performance. IBM Unica Marketing Operations configuration properties are located in the IBM Unica Marketing Platform under **Settings > Configuration > Marketing Operations**.

Max result size

You can crop all listing page result sets to a specified value using the `commonDataAccessLayerMaxResultSetSize` parameter under **umoConfiguration > database**. This setting is used to help overcome some database query limitations.

Query batch size

You can set the batch size of some performance-sensitive queries using the `commonDataAccessLayerFetchSize` parameter under **umoConfiguration > database**. The batch size determines how many records in the result set are returned to the application at one time. The default setting for the database is usually 10. The recommended setting for Marketing Operations is 500.

maximumItemsToBeDisplayedInCalendar

If you have a large number of objects (plans, programs, projects and tasks), you may experience performance issues when viewing and exporting the calendar. To improve the speed, increase the value of the `maximumItemsToBeDisplayedInCalendar` parameter under **umoConfiguration > listingPages**. The maximum value is 500.

The displayed or exported calendar entities will be limited to the number you specify. You may need to use a custom search to ensure you see all the desired items.

Customizing the Unica Marketing Operations interface

Marketing Operations enables you to customize the interface in several ways. you can do any or all of the following:

- Rename object types
- Change the wording of approval responses
- Customize the menus

About the sysmodules.xml file

The `sysmodules.xml` file defines items and modules. Items determine the wording on screens and modules determine the wording on menus. Each object type in Marketing Operations has two items and one module defined in the `sysmodules.xml` file.

For example, a project has the following two items and one module:

```
<item id="project">Project</item>
<item id="projects">Projects</item>
<module id="projects">
     <display>Projects</display>
     <description>Projects Module</description>
```

```
    <helptip>Projects</helptip>
    <link>uapprojectservlet?cat=projectlist</link>
    <helpfile>plan.htm</helpfile>
</module>
```

The sysmodules.xml file is in the /conf/<*locale*> folder under your Marketing Operations installation, where <*locale*> is the default locale for your installation.

If you want to rename an object or add a menu item that links to a URL, you must edit the sysmodules.xml file.

When you create a marketing object type, Marketing Operations automatically adds a module for the new type to the sysmodules.xml file.

Sysmodules.xml file elements

You use the following elements to define modules and items in the sysmodules.xml file.

module

The module element is the container element for the elements that define a module. This element has the following attributes:

Attribute	Description
id	Unique name of the module

The <module> element has no value. It can contain the following child elements: <display>, <description>, and <link>.

display

The <display> element defines the name that Marketing Operations uses for this module in the interface. This element has no attributes and no child elements. The element value is the name you want to use.

description

The <description> element defines the description for this module. This element has no attributes and no child elements. The element value is the description you want to use.

link

The <link> element defines the page that displays when users click the menu item for this module. This element has no attributes and no child elements. The element value is the link.

About the sysmenu.xml file

The sysmenu.xml file defines the names and contents of menus.

By default, the menu items get their names from the corresponding module's definition in the sysmodules.xml file, but you can override the display name by using the <display> element.

Every item in the sysmenu.xml file must have a corresponding module in the sysmodules.xml file.

If you want to reorganize menu items in their menus, rename a menu you created, or add a menu item, you must edit the sysmenu.xml file.

Sysmenu.xml elements

You use the following elements to define menus and menu items in the `sysmenu.xml` file.

menugroup

The <menugroup> element defines the menu name and contains the elements that define the menu items. This element has the following attribute:

Attribute	Description
id	Unique name of the module

The <menugroup> element has no value. It can contain the following child elements: <display> and <menuitem>.

display

The <display> element defines the name Marketing Operations uses for this menu in the interface. This element has no attributes and no child elements. The attribute value is the name you want to use.

menuitem

The <menuitem> element defines an item on a menu. This element has the following attributes:

Attribute	Description
id	Unique name of the module that corresponds to this menu item
type	The type of the module that corresponds to this menu item. (optional)

The <menuitem> element has no value or child elements.

Renaming object types

You can change the name of object types. For example, you can change "projects" to "promotions" throughout the interface.

In order to rename an object, you need to edit the following files:
- sysmodules.xml
- <object>sui.xml
- <object>list.xml
- sysmenu.xml (possibly)
- loaddefinitions.sql

You must then synchronize the menus for your changes to take effect.

To rename an object

1. Open the `sysmodules.xml` file.

   Locate the <syscatalogitems> section of this file, where object names are defined.
2. Change the object text to your organization's preferred term.

   Objects have two entries in the items section, one singular and one plural.
3. Find the <module> section for the object you are renaming. Change the values of the elements in that section to your organization's preferred terms.
4. Save and close the `sysmodules.xml` file.
5. Open the `<object>sui.xml` and change all instances of the object name. Save and close the file.
6. Open the `<object>list.xml` file and change all references to the object name. Save and close the file.
7. Open the `sysmenu.xml` file and see if the object's menu item definition overrides the display name in the `sysmodule.xml` file. If it does, change the name.
8. Open the `loaddefinitions.sql` file (located in the `/install/<db>` folder under your Marketing Operations installation and replace all references to the object you are changing. Save and close the file.
9. Start your database manager and run the `loaddefinitions.sql` file from within the database manager.
10. Click **Settings > Marketing Operations Settings > Synchronize Menus**.

Renaming the "Denied" approval response

Users respond to approvals by selecting one of the following responses:

- Approved
- Approved with changes
- Denied

Some organizations feel "Denied" has negative connotations and would rather use a less harsh phrase on the approval response form. You can replace the "Denied" approval response with the response "Changes Required."

To rename the "Denied" approval response

1. Open `approvalsui.xml`.

   This file is in the `conf/<locale>` folder under your Marketing Operations installation, where `<locale>` is the default locale for your installation.
2. Navigate to the bottom of the file and locate the following code block:

```
<!-- Configuring the word 'Deny' to 'Changes Required [begin] -->
<!-- REMOVE THIS LINE TO CONFIGURE --><!--
<column id="DENY"><display>Changes Required</display></column>
<column id="DENY_L"><display>changes required</display></column>
<column id="DENIED"><display>Changes Required</display></column>
<column id="DENIED_L"><display>changes required</display></column>
<column id="DENIED_L_NOTIFICATION">
 <display>marked 'changes required'</display>
</column>
--><!-- REMOVE THIS LINE TO CONFIGURE -->
<!-- [end] Configuring the word 'Deny' to 'Changes Required' -->
```

3. Delete the two comment lines that say REMOVE THIS LINE TO CONFIGURE (shown in bold text in the code block above).
4. Save the file.

5. Open `/install/your_db/loaddefinitions.sql` under your Marketing Operations installation, where *your_db* corresponds to the database you are using.
6. Find the text string "An approval is denied" and change it to "An approval requires changes."
7. Run the `loaddefinitions.sql` script file.

Customizing menus

You can configure the menus and menu options for Marketing Operations based on the needs of your organization. Marketing Operations allows you to make any of the following customizations:

- Create menus
- Reorganize items on menus
- Rename items on menus
- Rename a menu you created earlier
- Add menu items that link to URLs

You cannot rename the default menus (Operations, Analytics, etc.) although you can rename items within those menus.

Reorganizing items on menus

You can reorganize items on menus. You can move items from one menu to another or change the order of items on a menu.

You reorganize items on menus by changing the location of the <menuitem> elements in the `sysmenu.xml` file. When you are through, click **Settings > Marketing Operations Settings > Synchronize Menus.**

To create a menu

Before you can create a menu, the `sysmodules.xml` file must contain a module for the menu and a module for each item you want on the menu.

1. Open the `sysmodules.xml` file.
2. create a module for the menu.
3. Ensure that a module exists for each item you want to add to the menu.
4. Make a note of the values for the id and type attributes of the menu module and menu item modules.

   You must enter them in the `sysmodules.xml` file in a later step.
5. Save and close the `sysmodules.xml` file.
6. Open the `sysmenu.xml` file.
7. Use the <menugroup> element to create the menu.
8. Add one <menuitem> element for each item you want on the menu.
9. Save and close the `sysmenu.xml` file.
10. Click **Settings > Marketing Operations Settings > Synchronize Menus**.

To add a menu item that links to a URL

1. Open the `sysmodules.xml` file.
2. Create a module.

   The value of the <link> element must be the URL to which you want to link.
3. Make a note of the values for the id and type attributes.

You must enter them in the sysmodules.xml file in a later step.

4. Save and close the `sysmodules.xml` file.
5. Open the `sysmenu.xml` file.
6. Find the <menugroup> for the menu to which you want to add the link.
7. Add a <menuitem> element that references the module you created earlier.
8. Save and close the `sysmenu.xml` file.
9. Click **Settings > Marketing Operations Settings > Synchronize Menus**.

To rename a menu or an item on a menu

1. Open the `sysmenu.xml` file.
2. Find the <menugroup> element for the menu you want to rename or the <menuitem> element for the item you want to rename.
3. Do one of the following:
   a. If the element has a <display> child element, change the value of the <display> element to the text you want to display.
   b. If the element does not have a <display> child element, create a <display> child element whose value is the text you want to display.
4. Save and close the `sysmenu.xml` file.
5. Click **Settings > Marketing Operations Settings > Synchronize Menus**.

Synchronizing menus

Anytime you make a change to the menus in Marketing Operations, you must synchronize the menus in order for your changes to display.

Note: Creating a marketing object type counts as a change to the menus. Marketing Operations modifies the `sysmodules.xml` file and the `sysmenu.xml` file automatically, but you must manually synchronize the menus.

To synchronize the menus, click **Settings > Marketing Operations Settings > Synchronize Menus**.

Configuring the markup feature

Marketing Operations provides markup tools for making comments on attachments. When Marketing Operations users send approvals for review, approvers can place their comments directly in the electronic file, where they can be viewed by other users.

Marketing Operations provides two types of markup tools.

- Native Marketing Operations markup: The native markup option provides various markup functions that can be applied to files in PDF, HTML, JPG, PNG, GIF, and BMP format. Users can mark up whole websites if a URL is supplied. The comments can then be saved in Marketing Operations. Native markup is the default option. It does not require Acrobat to be installed on client machines.
- Adobe Acrobat markup: This markup tool requires installation of Adobe Acrobat. Users can apply all Acrobat commenting features, and then save the edited PDF in Marketing Operations.

During installation, one markup option is selected for all Marketing Operations users.

About changing markup tool availability

By default, the native Marketing Operations markup tool is enabled. You can change the type of markup tool available to users by changing the markup configuration parameters under **Settings > Configuration > Marketing Operations > umoConfiguration > markup**. However, changing the markup tool after users have begun viewing and editing markups has serious consequences.

- Switching from Acrobat markup to native markup means that users cannot view or edit markups made using Acrobat.
- Switching from native markup to Acrobat markup means that users cannot view or edit markups made using the native markup tool.

Note: For best results, avoid changing markup configuration after users have begun using the markup tool. Carefully consider the implications for users before changing markup tool availability.

To enable Adobe Acrobat markup

Enabling Adobe Acrobat markup disables the native Marketing Operations markup.

1. Click **Settings > Configuration > Marketing Operations > umoConfiguration > markup**.
2. Click **Edit Settings**.
3. Set the `markupServerType` parameter to `SOAP`.
4. Set the `markupServerURL` parameter to the URL for the Marketing Operations server.

   The URL must contain the fully qualified Marketing Operations server domain name.
5. If you want Windows users to use the Marketing Operations custom **Send Comments** button instead of the Acrobat **Send Receive Comments** button, set the **useCustomMarkup** parameter to `False`.

   Users must then configure Acrobat to enable the Marketing Operations Comments toolbar. For details, see the section on reviewing PDFs in the *Marketing Operations User's Guide*.
6. Click **Save**.
7. Restart Marketing Operations for the change to take effect.

To enable native IBM Unica Marketing Operations markup

Enabling native Marketing Operations markup disables Adobe Acrobat markup.

1. Click **Settings > Configuration > Marketing Operations > umoConfiguration > markup**.
2. Click **Edit Settings**.
3. Set the `markupServerType` parameter to `MCM`.
4. Click **Save**.
5. Restart Marketing Operations for the change to take effect.

To disable markup

If you disable markup, users cannot add comments to PDFs.

1. Click **Settings > Configuration > Marketing Operations > umoConfiguration > markup**.
2. Click **Edit Settings**.
3. Clear the `markupServerType` parameter value.
4. Click **Save**.
5. Restart Marketing Operations for the change to take effect.

Configuring system logs

Marketing Operations uses the Apache log4j utility for logging configuration, debugging, and error information.

To configure logging in log4j, you set property values in the `plan_log4j.xml` file located in the `conf` folder under your Marketing Operations installation directory. For example, to change the name and location of a log file, change the value of the appropriate property.

For information about changing the system log settings, see:

- The comments in the `plan_log4j.xml` file
- The log4j documentation on the Apache web site: http://logging.apache.org/log4j/1.2/manual.html

Note: The `plan_log4j.xml` file is reloaded 60 seconds after it is updated, so you do not need to restart the server after changing values in this file.

Chapter 3. Administering Marketing Objects

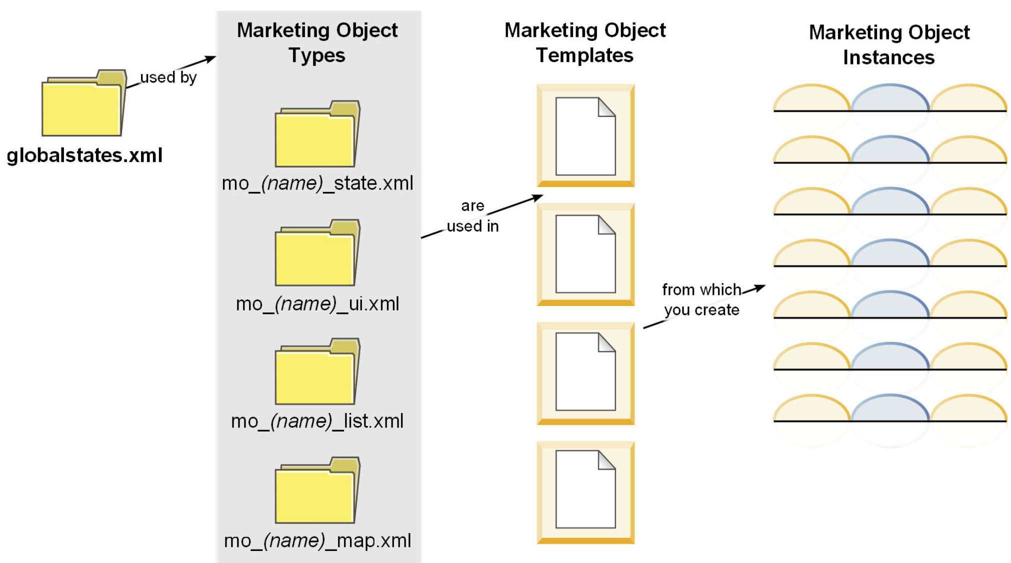
Marketing objects are the work products a team develops and reuses in the course of marketing activities. A marketing object can represent either a physical item, such as a letter, credit card, or banner ad, or business component, such as a credit card offer, a target segment definition, or a rewards program definition.

IBM Unica Marketing Operations organizes marketing objects by type. You must define a marketing object type for each kind of physical item or business component you want to use. Given the marketing object examples listed earlier, you could create the following marketing object types.

- letter
- credit card
- banner ad
- credit card offer
- target segment definition
- rewards program definition

You create one or more templates for each marketing object type. For example, you could create separate letter templates for different kinds of letters. Each template can be used multiple times to create different instances of that kind of letter.

The following diagram displays the representation of marketing objects within IBM Unica Marketing Operations, and how the components relate to one another:



Marketing objects process overview

1. If the new marketing object types require new states, define the new states in the global states file. See "Global states file" on page 22 for details.
2. If you defined new states, restart the web server to make the new states available.

3. Add a marketing object type in the Administration section of IBM Unica Marketing Operations. See “Adding marketing object types” on page 23 for details.
4. Restart the web application server to make the new marketing object type available.
5. Create a marketing object template for the marketing object type. See “Creating a marketing object template” on page 25 for details.
6. Create a marketing object, based on a marketing object template. See the *IBM Unica Marketing Operations User Guide* for details.

About marketing object states

Every marketing object has a state that indicates its status. The state changes as the marketing object moves through its lifecycle.

The following states are available by default:

- Not Started
- In Progress
- On Hold
- Cancelled
- Completed

You can create additional states by editing the global states file.

When you create a marketing object type, you specify the possible states for that type from the global list of states.

Global states file

The global states file lists all possible states for marketing objects in your installation. The `globalstates.xml` file is in the `<Plan_Home>\conf\<locale>` folder.

You define states using the following XML tags:

Table 1. XML tags for global states

Tag	Description
id	A unique identifier for the state. It cannot contain spaces.
displayName	The name that displays an object's state, when in that state. For example, “In progress.”
icon	The icon that represents this state on the object’s list page.
frozen	A flag that indicates whether the object can be edited in this state: • **false**: users can edit the object when it is in this state. • **true**: users cannot edit the object when it is in this state.

Here is example code for the `IN_PROGRESS` state:

```
<state id="IN_PROGRESS">
     <displayName>In Progress</displayName>
     <icon>status_onschedule.gif</icon>
     <frozen>false</frozen>
</state>
```

Important: You must restart your web server to change the global state file available in Marketing Operations.

Adding marketing object types

You must add a marketing object type to IBM Unica Marketing Operations before you can create marketing objects.

About state transitions

When users are working on marketing objects, they can change the status of the object by selecting a value from the status drop-down list on the object's Summary tab. Which statuses are available depend on the transitions defined for the object type. By default the following transitions are defined:

Transitions Names	From	To
Start	Not Started	In Progress
Cancel	Not Started	Cancelled
Continue	On Hold	In Progress
Cancel	In Progress	Cancelled
Pause	In Progress	On Hold
Finish	In Progress	Completed

Given the default transitions, when an object is In Progress, the Status menu contains three options: Cancelled, On Hold, or Completed.

You can add or remove transitions when you create a marketing object type.

To add a marketing object type

1. Select **Settings > Marketing Operations Settings**.
2. In the **Other Options** section, click **Marketing Object Type Settings**.

   The Marketing Objects Type Settings screen appears.
3. Click **Add Marketing Object Type**.
4. Specify the details for the object type.
5. Click Save Changes to add the new marketing object type, or Cancel to quit the screen without adding the new type.

Add Marketing Object Type screen

Use the Add Marketing Object Type screen to define the names, menu settings, and states for a marketing object type.

Field	Description
Marketing Object Type Module Name	The internal name of this marketing object type. An all-lowercase version of this name is used in the filenames of the definition files for this marketing object type. The name can only include English-language alphanumeric characters and the underscore.
Marketing Object Type Display Name	The name used for the marketing object type in menus and listings.

Field	Description
Marketing Object Type Module Description	A brief description of this marketing object type.
Marketing Object Type Module Help Tip	Reserved for future use.
Marketing Object Name (Singular)	The name used in links and titles in the Marketing Operations interface when a singular name is needed (for example, "Add Creative").
Marketing Object Name (Plural)	The name used in links and titles in the Marketing Operations interface when a plural name is needed (for example, "All Creatives").
Create new menu group with display name	Create a menu item with the specified name and add instances of this type to the listing page for that menu item.
Add in existing menu group	Add instances of this type to the listing page for the selected menu item.
Initial State	Assign the selected state to newly created instances of this type.
Transitions Names	The name of a transition from one marketing object state to another. This name is only visible on this screen; it is not displayed to users of marketing objects of this type.
From	The first state in this transition; the state the marketing object is moving from. Select a state from the drop-down list of states defined in the global states file.
To	The second state in this transition; the state the marketing object is moving to. Select a state from the drop-down list of states defined in the global states file.

Marketing object definition files

When you create a marketing object type, IBM Unica Marketing Operations creates four XML files that define the marketing object type.

- mo_< `modulename` >_list.xml
- mo_< `modulename` >_map.xml
- mo_< `modulename` >_state.xml
- mo_< `modulename` >_ui.xml

where `modulename` is the lowercase version of the name you specified in the Marketing Object Type Module Name field when you created the marketing object type.

The following table describes the marketing object file types.

File type	Description
List	Defines the standard attributes to be shown in the object list. Also, you can change the labels for these standard attributes as well as links in the list page.
Map	Defines the standard attributes to be shown on the marketing object's Summary tab. You can also change the labels of these attributes.
State	Defines the state transitions for the object. The complete set of states for all marketing objects in your system is defined in the globalstates.xml file. If you add any new states, you must define them in that file.

File type	Description
UI	Contains the definition for how the marketing object's actions appear on tabs, menus, columns, and so on.

The marketing object definition files are stored in the <Plan_Home>\conf\<locale> directory.

Important: Do not remove any of the marketing object definition files. If you do so, you cannot start your web server or use IBM Unica Marketing Operations.

Editing a marketing object type

If you want to change a marketing object type after you create it, you must modify the marketing object type definition files. If you want to change how the marketing object type displays in the menus, you must modify the corresponding entries in the `\conf\<locale>\sysmenu.xml` file under your IBM Unica Marketing Operations.

Creating a marketing object template

After you have defined and configured a marketing object type, you must create a marketing object template for that type. Users are unable to create objects of that type until you create a template.

To create a marketing object template

1. Select **Settings > Marketing Operations Settings**.
2. In the **Other Options** section, click **Template Configuration**.
3. Click **Templates**.

   A section appears for each marketing object type in your system. For example, if you have configured the sample marketing object type, **creatives**, a section called **Creatives Templates** should appear.
4. Click **Add Template** in the section for the marketing object type for which you want to create a template.
5. On the Add Template screen, fill in the properties for the new template.
6. Click **Save Changes** to add the new template.

About associating marketing objects with projects or other marketing objects

You can associate a marketing object with a project or with another marketing object. For example, you have a particular brochure type that you use with a particular project type. You can add a field to the project template that prompts users to select one or more brochures for the project.

When the user clicks Select, a list of brochures displays. The list can contain all the brochures in the system, or you can limit the list to only those brochures created using a specific marketing object template.

You can also

- Configure IBM Unica Marketing Operations to create an instance of the specified marketing object whenever the project template is used to create a project This is not available if you are associating the marketing object with another marketing object.

- Specify standard or custom attributes of the marketing object to display on the project or marketing object.

You associate marketing objects with projects by adding a Single Object Reference or Multiple Object Reference attribute to a form and then adding the form to a project template. To associate the marketing object with another marketing object, add the form to a marketing object template.

You display an attribute of the marketing object by adding an Object Attribute Field Reference attribute to the form. You can only specify attribute of a marketing object if you are using a Single Object Reference attribute to reference the marketing object.

Chapter 4. Using Reports

By default, IBM Unica Marketing Operations provides four reports and seven dashboard report components. The Marketing Operations reports package provides additional reports and dashboard report components created in Cognos 8 BI, a third-party business intelligence application.

Users access reports from Marketing Operations in the following ways.

- Click the **Analysis** tabs of individual items like projects and marketing objects to see reports that apply to the current item.
- Select **Analytics > Operational Analytics** to see Cognos reports that present data from more than one object.

The reports administrator can modify the reports, create new ones, add custom attributes, set up filters, and so on.

For information about installing the Marketing Operations reports package, see the *IBM Unica Marketing Operations Installation Guide*.

Unica Marketing Operations report and folder names in Cognos

Cognos® Connection presents reports in a directory structure, the top level of which is named **Public Folders**. After the IBM Unica Marketing Operations reports package is installed in Cognos, **Public Folders** contains the following sub-folders for Marketing Operations.

- **Affinium Plan**, which contains the multiple-object reports that appear on the Analysis page in IBM Unica Marketing Operations. If you create new mutiple-object reports in Report Studio, save them to this folder. If necessary, you can create sub-folders within this folder to organize the reports into a hierarchy.
- **Affinium Plan - Object Specific Reports**, which contains the single-object reports that appear on the Analysis tabs of individual IBM Unica Marketing Operations objects. This folder contains sub-folders for plans, programs, projects, and teams. If you create new single-object reports, you save them to the appropriate sub-folder.

As a best practice, you should not rename the folders. If you do, note the following.

- Edit the properties named `reportsAnalysisSectionHome` and `reportsAnalysisTabHome` under **Settings > Configuration > Marketing Operations > umoConfiguration > reports** so they match the names of the folders.
- Do not use special characters (such as quotes, or '<') in the folder names. Use only alphanumeric characters, and the space and dash ('-') characters if you rename the default report folders.
- If you rename the **Affinium Plan - Object Specific Reports** folder, you must edit the **Project Budget Summary by Quarter** report in Report Studio. This report contains a URL that links to the **Detailed Expense Breakout** report, and it is hard-coded to the report folder name. If the folder name changes, you must edit the links to refer to the new folder name.

- Do **not** rename the subfolders in the **Affinium Plan - Object Specific Reports** folder.

About creating and customizing IBM Unica Marketing Operations reports in Cognos

In Cognos, you can create reports based on the IBM Unica Marketing Operations data model and you can edit the reports in the Marketing Operations reporting pack.

Common customization tasks include the following.

- Adding custom attributes and metrics to reports
- Creating filters for reports
- Adding hyperlinks from a report column to the related IBM Unica Marketing Operations object

Before you create or customize reports, update the IBM Unica Marketing Operations data model in Cognos to include any new attributes or metrics you want to use in reports.

Save new reports in the appropriate folder in Cognos.

Updating the IBM Unica Marketing Operations data model in Cognos

Whenever there are changes to the IBM Unica Marketing Operations system or custom tables, for example, if you add custom attributes or metrics, ensure the Marketing Operations data model in Cognos is updated to reflect those changes. Otherwise, you will not be able to use the new attributes or metrics in Cognos reports.

To update the Unica Marketing Operations data model

1. Identify the custom attributes you want to include in reports and identify the tables (including lookup tables) that are needed for those attributes.
2. Using Import View in Cognos Framework Manager, import the metadata for the attributes.
3. Using Model View in Cognos Framework Manager, define the appropriate relationship between the custom attributes and objects to which they belong. (For example, relate Project Custom Attributes to Project.) Define appropriate relationships to lookup tables.
4. Using Business View in Cognos Framework Manager, define query items and aggregate them into Query Subjects.
5. Republish the data model.

The Query Subjects for the custom attributes and metrics are now available to report writers.

Example Query Subject for a custom metric

You can define a single Query Subject for all of the metrics associated with an object type. Here is an example Query Subject for metrics associated with projects:

```
Select
     UAP_PROJECTS.PROJECT_ID,
     a.METRIC_VALUE1 as TotalRevenue,
     b.METRIC_VALUE1 as ResponseRateActual,
```

```
     b.METRIC_VALUE2 as ResponseRateTarget,
     c.METRIC_VALUE1 as TotalLeadsGeneratedActual,
     c.METRIC_VALUE2 as TotalLeadsGeneratedTarget,
     d.METRIC_VALUE1 as TotalCostPassed
From
     UAP_PROJECTS
LEFT JOIN
(select PROJECT_ID, METRIC_VALUE1 from UAP_PROJ_METRICS
 where UAP_PROJ_METRICS.METRIC_ID = 'TotalRevenue') as a
ON a.PROJECT_ID = UAP_PROJECTS.PROJECT_ID
LEFT JOIN
(select PROJECT_ID, METRIC_VALUE1, METRIC_VALUE2 from UAP_PROJ_METRICS
 where UAP_PROJ_METRICS.METRIC_ID = 'ProjectResponseRate') as b
ON b.PROJECT_ID = UAP_PROJECTS.PROJECT_ID
LEFT JOIN
(select PROJECT_ID, METRIC_VALUE1, METRIC_VALUE2 from UAP_PROJ_METRICS
 where UAP_PROJ_METRICS.METRIC_ID = 'NumberOfLeadsGeneratedPassed') as c
ON c.PROJECT_ID = UAP_PROJECTS.PROJECT_ID
LEFT JOIN
(select PROJECT_ID, METRIC_VALUE1 from UAP_PROJ_METRICS
 where UAP_PROJ_METRICS.METRIC_ID = 'TotalCostPassed') as d
ON d.PROJECT_ID = UAP_PROJECTS.PROJECT_ID
```

Creating report filters in Cognos

When you create a Cognos report, you may need to provide the people who run the report the ability to filter the results, rather than selecting all the data in the application. Using Cognos Report Studio, you can create various filters. IBM Unica Marketing Operations users frequently want filters that do the following.

- Filter by the name or code of an object
- Filter by when an object is active
- Filter by the status, type, or both for an object

As a best practice make filter prompts optional, rather than required. Optional filters are simpler for users running the reports.

Best practices for name and code searching

As a best practice, use a Select & Search prompt to enable users to filter a report based on an object name or object code. The IBM Unica Marketing Operations data items use the naming scheme [PlanBV].[<*Object*>].[<*item*>]. (For example, the data item for project IDs is [PlanBV].[Project].[ProjectID].)

When you create the Select & Search prompt, you can specify one type of value to display to the user and another to use to search the database. For example, the following prompt control configuration prompts users for the project name or code, but searches using project IDs, which is generally a faster search.

- Values to use: [PlanBV].[Project].[Project ID]
- Values to display: [PlanBV].[Project].[Project Name (Code)]

Best practices for date searching

In order to create a date filter in Cognos that returns any object that is active during a certain date range, exactly like Advanced Search in IBM Unica Marketing Operations, use a date prompt with the range option enabled and create a filter that includes both the start date and the end date. This returns objects that meet any of the following criteria.

- Start within the active date range

- End within the active date range
- Start before the active date range AND end after the active date range

The following filter searches for projects active during the date range entered in the date prompt named Target_Date_Prompt.

```
[PlanBV].[Project].[Project Start Date] in_range ?Target_Date_Prompt? OR
[PlanBV].[Project].[Project End Date] in_range ?Target_Date_Prompt? OR
([PlanBV].[Project].[Project Start Date] <= ?Target_Date_Prompt? AND
[PlanBV].[Project].[Project End Date] >= ?Target_Date_Prompt?)
```

Best practices for object status and type filters

Because there is a small, fixed set of status and types, use a simple multi-select control for filtering on status or type.

In order to prompt users for the status or type of an object (or both) do the following.

- To prompt for status, use a a multi-select control using the ***<OBJECT>*** Status Query Subject.
- To prompt for type, use a multi-select control using the *<OBJECT>* Template Query Subject.

Creating hyperlinks in Cognos reports

You can create hyperlinks in a Cognos report that take users from the report to the corresponding object in IBM Unica Marketing Operations. For example, if the report displays a list of projects and you created hyperlinks, users can click a project name to go to the Summary tab for that project. Hyperlinks also work in reports that are emailed to users. Users who click the links may be asked to log in to Marketing Operations.

You can create hyperlinks for the following objects.

- plans
- programs
- projects
- project requests
- standalone approvals
- work and approval tasks
- invoices

The IBM Unica Marketing Operations reports package includes a URL query item for each object for which you can create a hyperlink. For example, the URL query item for plans is named Plan URL. The URL query item for an object is listed in the query subject for the object.

In Cognos Report Studio, use the appropriate URL query item to define the URL source for the hyperlinks.

Example custom report: Project Performance Summary (custom)

The IBM Unica Marketing Operations reports package provides two versions of the Project Performance Summary. The Project Performance Summary uses only default attributes. The Project Performance Summary (Custom) contains custom attributes and metrics. This section describes the changes that were made to the Marketing Operations data model and report in Cognos to produce the Project Performance Summary (Custom) .

Custom attributes and metrics identified

The following custom attributes and metrics were needed to produce the Project Performance Summary (Custom).

Attribute	Column	Lookup table
Initiative	dyn_projectatts.init_type_id	lkup_initiative
Business unit	dyn_projectatts.business_unit_id	lkup_business_unit
Product Family	dyn_projectatts.prod_family_id	lkup_prod_family
Segment	dyn_projectatts.segment_id	lkup_segments

The following are the custom metrics needed for the report.

- Total Revenue: metricid = 'TotalRevenue' (actual)
- Response Rate: metricid = 'ResponseRate' (actual)
- Total Leads Generated: metricid = 'NumberOfLeadsGeneratedPassed' (actual, target)
- ROI: metricid = 'ROI' (actual)

Metadata associated with the custom attributes

The following columns in the dyn_projectatts table were imported to support the custom attributes.

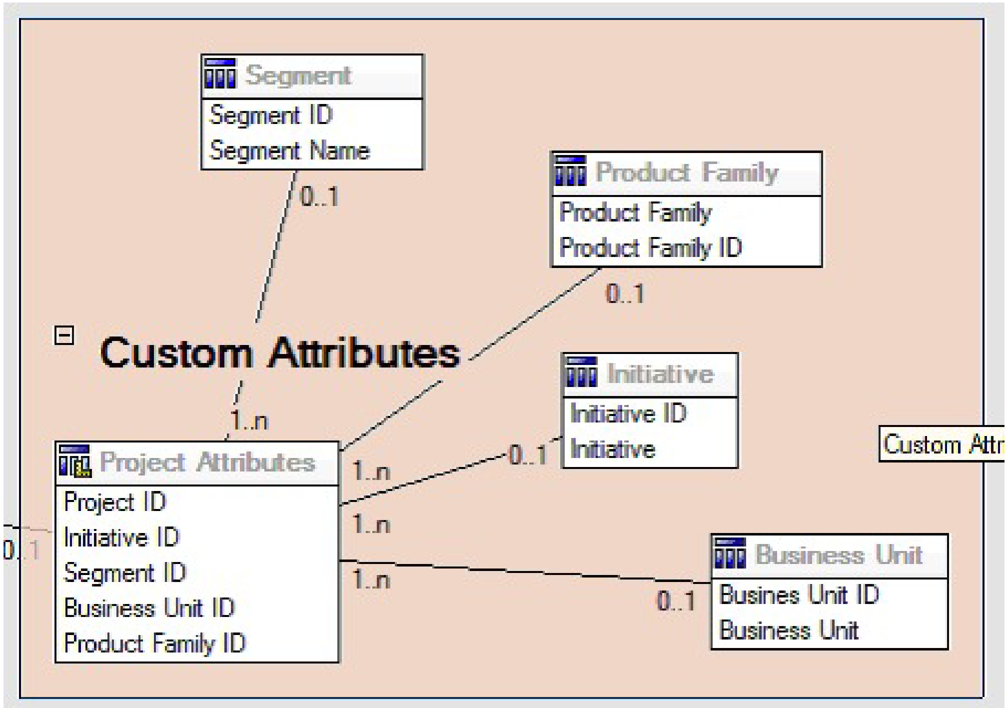
- init_type_id
- segment_id
- business_unit_id
- prod_family_id

The following lookup tables were imported to support the custom attributes.

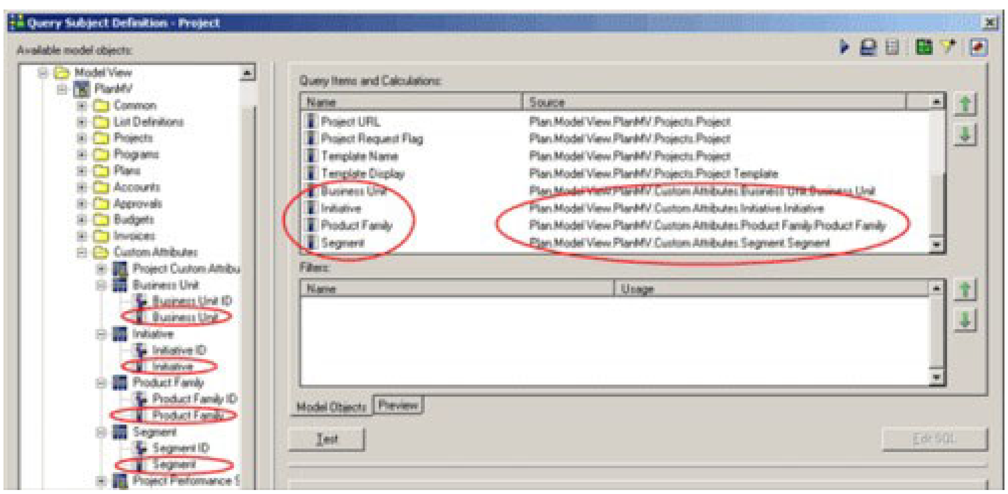
- lkp_initiative
- lkup_segments
- lkup_business_unit
- lkup_prod_family

Relationships and Queries defined in Model View

In Model View in Cognos Framework Manager, relationships were defined as shown here.



The Query Subject definition for Project was updated with query items for the custom attributes as shown here.



Query Items added in Business View

The following query items were added in the Business View in Cognos Framework Manager.

Column	Type/extra info	Query item
Initiative	String; group-by column	Project Custom Attributes.Initiative
Business Unit	String	Project Custom Attributes.Business Unit
Segment	String	Project Custom Attributes.Segment

Column	Type/extra info	Query item
Product Family	String	Project Custom Attributes.Product Family
Total Revenue	Currency	Project Performance Summary Metrics.Total Revenue
Response Rate (Actual)	Percent	Project Performance Summary Metrics.Response Rate (Actual)
Response Rate (Target)	Percent	Project Performance Summary Metrics.Response Rate (Target)
Response Rate Variance	Percent, Calculation	ResponseRate Actual – ResponseRate Target
Total Leads Generated (Actual)	Number	Project Performance Summary Metrics. Total Leads Generated (Actual)
Total Leads Generated (Target)	Number	Project Performance Summary Metrics. Total Leads Generated (Target)
Total Leads Generated Variance	Number, Calculation	Total Leads Generated (Actual) – Total Leads Generated (Target)
ROI	Percent, Sort Column, Calculation	Project Performance Summary Custom Metrics].[Total Revenue]-[Project Budget].[Actual Total])/[Project Budget].[Actual Total]

Columns added and deleted from the report

In Cognos Report Studio, all the columns were removed from the report except for Project Name (Code), Project Start Date, and Project End Date.

The following columns were added to the report.
- Initiative
- Business Unit
- Segment
- Product Family
- Total Revenue
- Response Rate (Actual)
- Response Rate (Target)
- Response Rate Variance
- Total Leads Generated (Actual)
- Total Leads Generated (Target)
- Total Leads Generated Variance
- ROI

Prompts created

The following two prompts were created.

Prompt	Prompt type	Query Subject
Initiative	Search & Select	Project Custom Attributes.Initiative
Business unit	Search & Select	Project Custom Attributes.Business Unit

Chapter 5. Introducing Templates

An object (plan, program, project, or marketing object) template defines the information that your organization can capture about the object. An invoice template defines the information that your organization needs to capture in invoices.

After you install IBM Unica Marketing Operations you can get up and running using the example object or invoice templates provided by IBM. The example templates allow you to see what templates are and how Marketing Operations uses them. Once you understand templates, you must customize the example templates or create your own custom templates.

Template concepts

Templates consist of various components, some of which are described in detail here.

Object Templates

Templates for plans, programs, and projects are known as planning object templates. In cases where behavior is different among the object types, the specific behavior is described for each separate object type.

Standard tabs: plan, program, and project templates

Templates for IBM Unica Marketing Operations plans, programs, and projects have the following standard tabs.

- Properties, which becomes the Summary tab when you create an object from the template. See “Template Properties tab” on page 51.
- Tabs. See “Template Tabs tab” on page 55.
- Attachments. See “Template Attachments tab” on page 57.
- Custom Links. See “Template Custom Links tab” on page 58.
- Customize Alerts.

Program and project templates have a Budget Approval Rules tab. See “Budget Approval Rules tab” on page 52.

Project templates also have the following additional tabs.

- Project Roles. See “Project template Project Roles tab” on page 59.
- Requests. See “Project template Request tab” on page 59.
- Campaign. See “Project template Campaign tab” on page 63.

  Note: This tab is available only if IBM Unica Marketing Operations and Campaign are integrated.
- Workflow. See “Template Workflow tab” on page 64.

When you create a plan, program, or project from a template, the object includes the Budget and Analysis tabs in addition to the tabs listed above. If metrics were specified, the object includes a Tracking tab.

Standard tabs: invoice, asset, and offer templates

Invoice, asset, and offer templates have the following standard tabs.
- Properties, which becomes the Summary tab. See "Template Properties tab" on page 51.
- Tabs. See "Template Tabs tab" on page 55.
- Customize Alerts.

The invoice template also has a "Budget Approval Rules tab" on page 52 tab.

Offer templates also have the following additional tabs.
- Attachments. See"Template Attachments tab" on page 57.
- Custom links. See "Template Custom Links tab" on page 58.

Note: You cannot rename the standard tabs.

Custom tabs

You can add additional forms and tabs on the template's Tabs tab. For more information about adding custom forms and tabs, see "To add a tab to a template" on page 56.

Field

A field is a single piece of data, such as the marketing manager's phone number, or the data type of an attachment. A field is sometimes referred to as an *attribute*.

Fields can be standard or custom.

Metrics

Metric fields measure the performance of the object. Metrics appear on the Tracking tab. Typical metrics include financial metrics such as cost and revenue, and performance metrics, such as the number of contacts and the number of responses in a particular marketing campaign.

You can perform the following tasks.
- Set up metrics that calculate based on other metric values. For example, you could calculate that the *profit* of a campaign is the *revenue* minus the *cost*.
- Group metrics.
- Define both the metrics and their groups.
- Roll up metrics from projects to programs, and from programs to plans.

Attachment categories

Categories allow you to organize attachments into meaningful groups. When users add an attachment, they select the category that it appears in. For example, they might add a brochure as an attachment and put it under the category called creative ideas.

Deciding on a set of templates

This section provides a few examples of how an organization might use a set of templates.

You could have a project template called Marketing Collateral that contains all the information you need about projects that revolve around creating or modifying a set of marketing collateral within your organization. Whenever someone in your organization creates a new project that involves marketing collateral, they select the Marketing Collateral template and create the project from that template. For more information on creating a project, see the*IBM Unica Marketing Operations User's Guide.*

In addition to the Marketing Collateral project template, you might also have another template called Database Marketing Campaign that contains all the information you need for developing and executing new direct marketing campaigns. Whenever someone in your organization creates a new project for a particular database marketing campaign, they select the Database Marketing Campaign template and create the project from that template. You can have as many templates as you have types of marketing projects or types of marketing programs.

When to create another template

In general, you should create a new template if the information (fields, workflow, metrics, and so on) you must capture about a type of plan, program, project, or invoice is significantly different or unique as compared to other sets of information in existing plans, programs, projects, or invoices.

The fields of information to capture may be different from a descriptive perspective or you may want to capture different fields of information for tracking purposes. In one project type you capture specific metrics, a specific "best-practice workflow," or a specific type of reference material and deliverable attached to the project. In another type of project one or many of these may be different.

You can also choose to use different project templates for variations of a marketing program. For example, you might have the following:
- a project for a routine monthly direct mailing
- a project for a specifically targeted direct marketing program around a new product launch

Each of these can have its own project template.

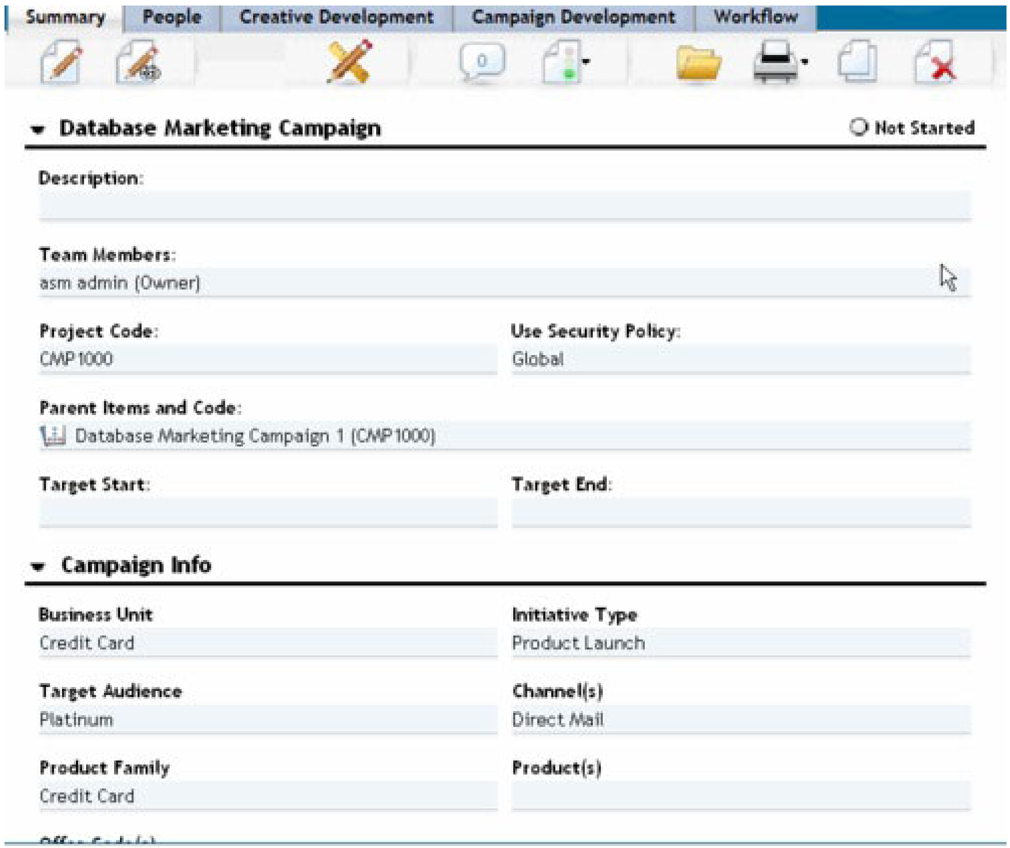
What can you customize?

The items you can customize depend on the object:
- For invoices, you can add custom attributes to the **Summary** tab.
- For plans, programs, and projects, you can customize the content or appearance of all the tabs except the **Analysis** and **Budget** tabs.

  You can add custom fields to the **Summary** and the **Tracking** tab, but not to the **Workflow** tab or **Attachments** tab.
- For workflows, you can customize nearly all characteristics, such as stages, steps, dependencies, durations, and so on.
- For metrics, you define and edit them, and they appear in the **Tracking** tab.
- For attachments, you can modify the categories that appear, as well as adding default attachments that appear in all objects created based upon the template.
- For projects, requests, and marketing objects, you can customize security permissions for each tab included in the templates (both custom and default tabs).

Sample summary page

The following image is of the Summary page for a project based on the **Database Marketing Campaign** sample template.



Note the following:

- The fields in the top portion of the screen (the Database Marketing Campaign section) are standard fields. You can not modify the standard fields.
- The fields in the bottom portion of the screen (the Campaign Info section) are custom fields.

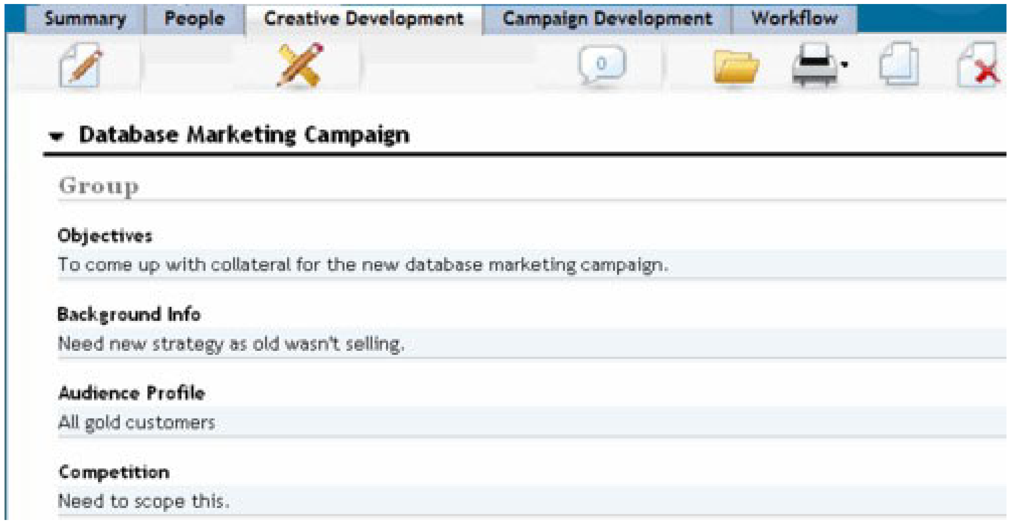
The custom fields allow you to capture the information needed for the project. You can later use these custom fields for reporting and analysis purposes. You can also group custom fields that relate to one another, as shown above.

Some examples of a custom field:

- A text box, where the user enters free text.
- A drop-down list or multi-select, where the user selects a value or multiple values from a list. You can specify a static list that the user selects from or you can specify a database table from which the list retrieves values
- A radio button, where the user selects exactly one option from several

Custom tab example

The image that follows shows the Creative Development tab for the Database Marketing Campaign Collateral project. This tab is a custom tab.



In this example, the purpose of this tab is to provide instructions about the development and production of the project. The Creative Development tab has fields that capture information about the objectives, background, and audience profile for the marketing campaign.

You can add custom tabs to capture information about a project that you now capture on paper forms that you fill out and give to other departments or vendors. By including this information in your project, you can ensure that users fill in the information, ensure that all team members see it, and minimize the delays that occur when the information is incomplete.

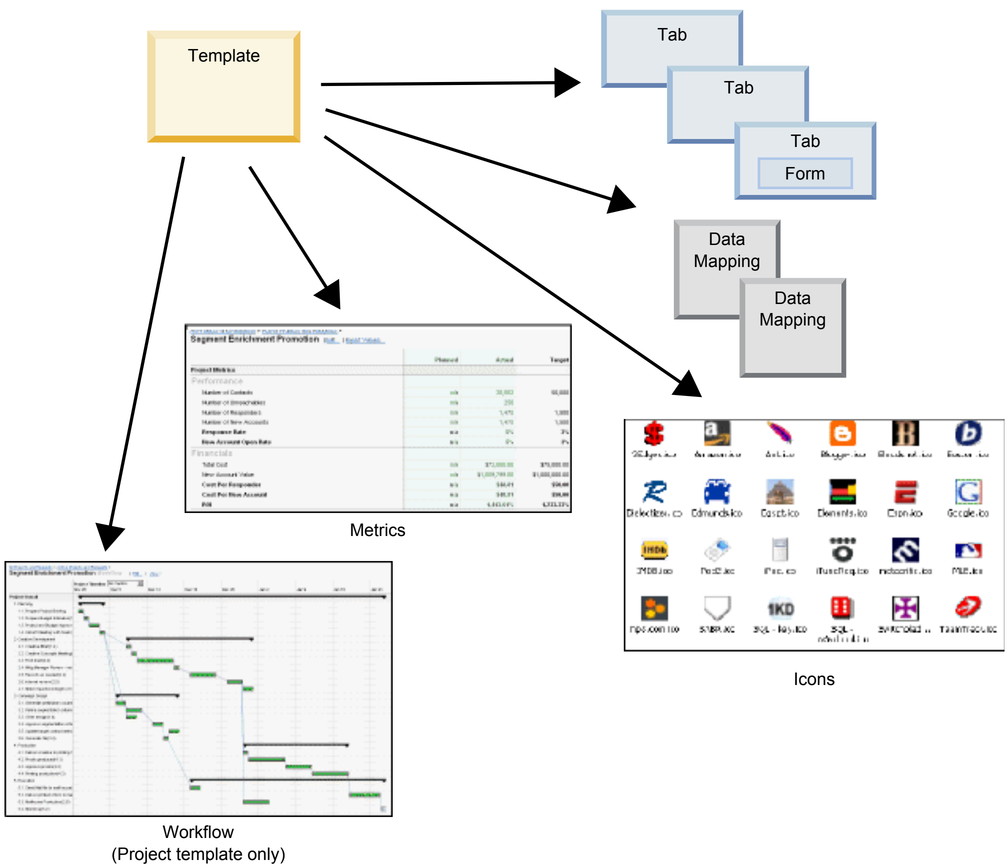
Template components

The following components make up templates. IBM Unica Marketing Operations administrators can create, add, modify, or remove components to customize templates. To access these components, go to **Settings > Marketing Operations Settings > Template Configuration**, located under Other Options.

Component	Description
Tab	Individual screen for the object (project, plan, etc.) Tabs contain one or more forms. Use the New Tabs tab of a template to create and edit tabs and organize the forms on them.
Form	Sub-section of a tab, containing attributes. A form is an organized collection of data. You can use custom forms across object templates, for example, for both project and program templates. When assembling templates, you can build rules to show and hide forms to streamline data and make the template easier to use.
Attribute	Data element contained within a form. Each attribute has a specific format. See "Attribute types" on page 105 for more information. You can group attributes and display them in either a 1- or 2-column layout on the form.
Data mapping	IBM Unica Campaign metrics mapped to IBM Unica Marketing Operations metrics for tracking and roll-up purposes if integration is enabled. Use an XML editor to create data mappings.

Component	Description
Icon	Small image representing an object within the IBM Unica Marketing Operations GUI. Use image editing software to create and edit icons.
Metrics	Set of metrics appearing on the object's tracking tab, such as tracking and performance measurements. On the Template Configuration page, click **Metrics** to create and edit metrics.
Attachment	File or folder appearing on the Attachment tab of the object. You can specify default attachments that appear in all objects created from the template.
Custom link	Hypertext link appearing on selected tabs. You can add custom links to external pages and programs.
Workflow (project templates only)	The set of stages and tasks appearing in the project's workflow tab. Click **Edit** to modify the workflow. Use the Template Configuration section in the Administrative Settings to create workflow templates.

Here is a graphical representation of the components of a template.



Once these components are defined and available, you can assemble them into a templates.

Multi-locale support

Templates in IBM Unica Marketing Operations have features to support organizations that use multiple locales. When you add a project template in Marketing Operations, the system saves a properties file for the template. The file is saved under the Marketing Operations home folder as follows,

```
\templates\db\properties\<template_id>_<user_locale>.properties
```

where `<template_id>` is the template ID for the template, and `<user_locale>` is the locale for the user that creates the template. Create translations of this file for as many other locales as your organization supports.

The properties file for the default locale is used in the following situations.
- If a locale is supported but there is no corresponding properties file.
- If a locale is not supported.

Note: The supported and default locales are specified under **Settings > Configuration > Marketing Operations**.

The following attributes are localized in the properties file.
- Template properties screen: Name, Description, and Default Name.
- Template tabs screen: Name.
- Template attachments screen: Name.
- Template custom links screen: Name and Description.

Template properties file sample:

```
    template.description.tradeshow=Use this template for requests/projects
    to prepare for tradeshow attendance.
template.default_name.tradeshow=Tradeshow
template.display_name.tradeshow=Tradeshow Template
tab.display_name.contact=Contact Info
tab.display_name.tradeshowsummary=Tradeshow Attributes
attachment_folder.display_name.folder2=Project Deliverable(s)
attachment_folder.display_name.folder1=Reference Attachments
custom_link.display_name.new=New Custom Link
```

Localizing a template does not localize the forms used in the template. You must localize forms separately.

Template-building methodology

Building a custom template is a bottom-up process. You construct each component you need, then assemble them into a complete template. You use the complete template to create instances of the object. For example, you use a program template to create a program, and a project template to create a project.

Task 1: Planning

Before you begin building templates within Marketing Operations, analyze the needs of your organization, and plan out the types of templates you need. For more information, see "Planning your custom templates" on page 42.

Task 2: Define attributes and forms

After analyzing the types of fields you need and how you want to organize them, create the attributes and forms. For more information, see "About creating, enabling, editing, and deleting attributes" on page 100 and "Creating forms" on page 81.

Task 3: Define metrics

After analyzing the types of metrics you need, create and edit the appropriate metrics. For more information, see "Metric creation overview" on page 120.

Task 4: Define other template components

Using the appropriate software, create any icons and data mapping files your template needs.

Task 5: Define the template

Assemble the components into the template. You can create custom tabs, and specify the icons, forms, metrics, and so forth to use in the template. For more information, see "To build or edit a template" on page 49.

Task 6: Test the template

Use your new template to create an object. Building a template is an iterative process; you will probably need to go back and tweak the individual components, maybe swap components in and out, and then re-test by creating new objects. For more information about building objects from templates, see the *IBM Unica Marketing Operations User's Guide*.

Planning your custom templates

Most of the work involved in creating custom templates involves determining the fields you want in your templates and how you want to organize those fields. You should attempt to capture this information on paper before you start creating attributes and forms; this planning step streamlines the creation process.

Before you begin creating custom templates, decide on the types of templates that your organization needs and create a storyboard or a spreadsheet that shows the tabs that you want the object to have and each field that you want to appear in each tab.

For example, if you know that you want a project to list the business unit that requested the project, you record the following information about the business unit field.

Table 2. Example of recording information for a field before adding it

Attribute information	Value
Shared or Local	Shared
Attribute Category	Form
Attribute Type	Single-Select

Table 2. Example of recording information for a field before adding it (continued)

Attribute information	Value
Internal Name	BusinessUnit
Display Name	Business Unit
Tab/grouping	In the Summary tab under the Collateral Request Info section.
Field type	Drop-down list
Possible values or database table to retrieve values from	Retail Banking, Investment Services, Insurance, Credit Card Brochure, Postcard, DataSheet, Intro Folder, White Paper, Print Ad, or a table name or column name where Marketing Operations should look up these values.
Required?	Yes
Help Tip	Enter the business unit requesting this collateral piece.

After you do this planning step for every field in a form, you can create the attributes and the form.

Example templates

IBM Unica Marketing Operations provides a few example program and project templates; you can modify these templates and create new ones. Marketing Operations also provides one default template for a plan, an invoice, and an asset; you can edit these templates to suit your needs, but you cannot create new templates for these object types. The examples are located in the following file under your IBM Unica Marketing Operations installation.

`\tools\admin\sample_templates\sampleTemplates<database>.zip`

where <*database*> is your database. For example, if you are using an Oracle database, you should import `sampleTemplatesOracle.zip`.

List of example templates

The following are example templates for a program.

- **Database Marketing Program**, which contains basic information about programs that develop and execute direct marketing campaigns.
- **Product Launch Program**, which contains basic information about programs that develop and execute new product launch campaigns.

The following are example templates for projects.

- **Marketing Collateral**, which contains basic information about projects that develop marketing collateral.
- **Database Marketing Campaign**, which contains basic information about projects that develop and execute direct marketing campaigns.
- **Tradeshow**, which contains basic information about projects that plan tradeshows.
- **Campaign Project**, which if IBM Unica Marketing Operations-Campaign integration is enabled, contains information about projects linked with campaigns in IBM Unica Campaign.

For details on importing the example templates, see "To import templates" on page 74.

Example template structure

An example project template has at least six tabs that structure the project information.

- **Summary tab**, which contains some standard fields (attributes) such as the project name, description, start and end dates for the project, and optionally some custom fields.

Note: Standard attributes for all objects (projects, programs, etc.), appear only on the Summary tab. You can optionally add additional custom attributes to the Summary tab, or create custom tabs which contain custom attributes.

- **Workflow** tab, which contains a task list for the project that you can view in a spreadsheet or a calendar view. You can use this tab to manage the project and track approvals and tasks.
- **Budget** tab, which contains budget information to help you plan expenses that will be needed to successfully execute your project.
- **Tracking** tab, which contains user-defined metrics for measuring the performance of the project.
- **Attachments** tab, which contains any documents pertaining to the project.
- **Analysis tab**, which contains the project reports and revision history.

The other objects contain a subset of these tabs.

- An example plan or program template has the same tabs as a project, except for the Workflow tab.
- An example invoice template has only the Summary, Attachments, and Analysis tabs. For invoice templates, you can only add custom attributes to the Summary tab.

Campaign project templates

If IBM Unica Marketing Operations is integrated with IBM Unica Campaign, campaign project templates guide users in creating a campaign project.

You indicate that a template is a campaign project template by completing the options on the Campaign tab for the template. Specifically, you must specify a Target Cell Spreadsheet. If you want to import Campaign contact and response metrics, you must specify a metric map file.

Campaign Summary section

The Campaign Summary section of the project Summary tab defines basic information about the campaign for this project.

Field	Description
Campaign Description	Enter a description of the campaign.

Field	Description
Campaign Start Date	The date on which the campaign starts. You can manually enter the date or click the drop-down arrow to display a calendar from which you can select a date. If the field contains a date, you can click the forward or back arrows to change the date. You cannot create the linked campaign if this field is empty.
Campaign End Date	The date on which the campaign ends. You can manually enter the date or click the drop-down arrow to display a calendar from which you can select a date. If the field contains a date, you can click the forward or back arrows to change the date. You cannot create the linked campaign if this field is empty.
Campaign Objective	Enter the objectives of the campaign.
Campaign Initiative	Enter the initiative under which the campaign falls.
Campaign Security Policy	Select a security policy from the drop-down list of all the security policies defined for Campaign. You can select any policy, even policies in which you do not have a role. If you put a campaign into the wrong policy, it will not be visible to the desired end users. You cannot create the linked campaign if there is no security policy specified.

Designing campaign project templates

You can create as many campaign project templates as you want. For example, you may want to create a separate campaign project template for each type of campaign you run.

In general, you should create a separate template for each unique combination of forms you need. For example, if you need to gather different information to define your target cells for some campaigns, you need to create different versions of the Target Cell Spreadsheet and associate them with different templates. Similarly, if some custom campaign attributes are relevant only for certain types of campaigns, you can create different campaign project templates to make different custom campaign attributes available and control their display order and organization on tabs.

Chapter 6. Administering Templates

Use the Template Configuration page to create and manage templates and template components. To display the page, select **Settings** > **Marketing Operations Settings**. Then click **Template Configuration**.

The items and functions available are organized into two sections, **Template Configuration** and **Template Components**. There is also a link to validate all templates.

Validating templates

You can click **Validate Templates** to run a utility that validates templates and forms and displays any validation errors.

Template Configuration section

The template configuration section of the page contains the link **Templates**, which opens a page that lists all the existing templates and template folders. You use the links on that page to create, delete, and organize templates.

Template Components section

The template components section of the page contains the following links.

Table 3. Links in the Template Components section

Link	Description
Forms	Opens a list of the forms and displays the following information: • Name of the form • Database table name that stores the answers users enter in the form fields • List of templates that use the form You can use the links and icons on this page to create, copy, import, enable, disable, delete, export, publish, and manage forms.
Metrics Template	Opens a list of the metrics templates and displays the following information. • Name • Short text description • ID; used when adding a metrics template to an object template • List of templates that use the metrics template Use the **Export Properties File** link to export the metrics' related properties file. Use the **Import Metrics Template** link to import metrics template from an xml file. Use the **Add Metrics Template** link to add a metrics template.

Table 3. Links in the Template Components section (continued)

Link	Description
Metrics	Opens a list of the metrics and displays the following information. • Name • Short text description • ID; used when adding a metric to a metrics template • List of templates that use the metrics Use the **Add Metrics** link to add a metric.
Metrics dimension	Opens a list of the metrics dimensions and displays the following information. • Name • Short text description • Type (Actual, Target, Other) Use the **Add Metrics Dimension** link to add a metrics dimension.
Legacy Metrics specification file	Users can retrieve legacy metrics specification files in this section, if they were uploaded prior upgrading to IBM Unica Marketing Operations version 8.5.0. upgrade. From Marketing Operations 8.5.0 onwards, users cannot add any further files in this section.
Workflow	Opens a list of the workflow templates and displays the following information. • Name • The number of stages and tasks in the workflow template • When it was first created and last modified • Whether it is enabled or disabled You create workflow templates from the Workflow tab of a project template or instance. You can use the links on this list page to delete, enable/disable, import, or export a workflow template.
Data Mapping	Opens a list of data maps and displays the following information. • Data mapping file names • Type: Campaign Metrics Import (if you have data maps from previous versions, you may see other values) • List of templates that use the mapping. • You can use the links on this page to add and delete data mapping files.
Icons	Opens a list of icons and displays the following information. • Icon images; large and small • Icon name • List of templates that use the icon • Delete link for deleting the icon (does not delete the file from its location on disk) Click the **Add Icon** link to add an icon.
Rules	Opens the **Rules Definitions** screen. You can use the **Add Rules Definition** link to add rules.

Table 3. Links in the Template Components section (continued)

Link	Description
Shared Attributes	Opens a list of the shared attributes in the system, organized by attribute category, and displays the following information. • Display name • Type of attribute • List of templates that use the attributes
Import	Opens the **Import Templates** dialog. Navigate to the templates archive file, choose the type of templates to import, and the database scripts to run.
Export	Opens the **Export Templates** dialog. Choose the type of templates to export, and the database type for the export. The result is a self-contained archive with all the necessary files and SQL scripts needed to import the archive.
Upgrade	Opens the **Upgrade Templates** dialog. Use the **Upgrade** link to upgrade existing templates. Upgrading converts your earlier version templates to the current version. Navigate to the location of the old templates and choose the type of templates to upgrade. Typically, you upgrade when installing a new release version of IBM Unica Marketing Operations.

To build or edit a template

Before you create templates for IBM Unica Marketing Operations objects, determine whether you need to create custom forms or metrics subtemplates. If you do, use the procedures in the chapter on the Forms Editor.

When the template components you need are available, create a template and assemble the pieces. The steps to create a template are generally the same for each object type, with the following exceptions.

- IBM Unica Marketing Operations has only one plan, one invoice, and one asset template. You can edit these templates, but you cannot create additional plan, invoice, or asset templates.
- You can specify a workflow subtemplate for project templates, and you can create workflow subtemplates from project templates.
- Projects, programs, and plans also have a **Metrics** drop-down list on the Properties tab on which to select a metrics subtemplate.
- Project templates also contain tabs named **Campaign** (if IBM Unica Marketing Operations-Campaign integration is enabled), **Project Roles**, **Request**, and **Workflow**.

1. From the **Settings** menu, select **Marketing Operations Settings** >**Template Configuration** (under **System Administration** > **Other Options**) > **Templates**.
2. Click **Add Template** in the program, project, or offer section, depending on the type of template you want to create. To edit the plan, invoice, or asset template, click its name on the Template Configuration screen.
3. Fill out the **Properties** tab. This tab corresponds to the Summary tab in the finished template. You must specify a template display name and an

alphanumeric internal Template ID. You can also select a metrics template and set the security policy on this tab. For more information, see “Template Properties tab” on page 51.

Note: You may need to click **Save Changes** on the Properties tab before you can proceed to fill out additional tabs.

4. Fill out the following tabs to complete the template. The available tabs depend on which type of template you are creating.

   Important: Click **Save Changes** when you finish editing each tab, before navigating to another tab in the template. Otherwise, your changes are not saved.

   - **Roles** tab. (Not available in invoice, asset, or offer templates.)

     This tab corresponds to the People tab; add default request recipients, members, and reviewers to the template by selecting them from the drop-down list. You must select roles one at a time, but you can select multiple roles in each category. See “Creating metrics templates and metric template groups” on page 123 for more information.
   - **Request** tab. (Project templates only.)

     Set default rules for requests on this tab. See “Project template Request tab” on page 59 for specific information about filling out this tab.
   - **Campaign** tab. (Project templates only, if IBM Unica Marketing Operations-Campaign integration is enabled.)

     See “Project template Campaign tab” on page 63.
   - **Workflow** tab. (Project templates only.)

     Create a default workflow for the template, or import a workflow subtemplate. See “Template Workflow tab” on page 64 for specific information about filling out this tab.
   - **Budget Approval Rules** (Program, project, and invoice templates only.)

     Define rules for budget approval using the rule builder.
   - **Tabs** tab.

     Click **New Tab** to add custom tabs or to add additional forms to the Summary tab; see “Template Tabs tab” on page 55.
   - **Attachments** tab. (Not available in invoice or asset templates.)

     Use this tab to add default attachments to the object; see “Template Attachments tab” on page 57.
   - **Custom links** tab. (Not available in invoice or asset templates.)

     Use this tab to add default custom links to the object; see “Template Custom Links tab” on page 58.
   - **Customize alerts** tab.

     Use this tab to customize default text for object alerts.

   Important: You must click **Save Changes** when you finish editing each tab, before navigating to another tab in the template. Otherwise, your changes are not saved.

Effects of template changes

When editing a template, be aware you are changing all instances of objects previously created from the template.

The exceptions are workflow, metrics, and attachment folders. When you change the workflow or metrics template for an object template, or add or remove an attachment folder, your changes apply only to objects you create after the changes are made. Existing workflows are not changed, nor are the attachment folders nor metrics for any existing projects, programs or plans.

Template Properties tab

For all objects, the templates **Properties** tab contains the following settings.

Property	Description
Name	The template's display name, used in the **Templates list** page.
Description	Short description of the template that displays on the template selector page when adding a new process or marketing object.
Icon	Large and small icon images for the template. The large icon is displayed when you create an object based on this template. The small icon is displayed next to the icon name in the list page.
Security Policies	List of security policies that determine which users have access to the template.
Template ID	Internal name for the template. Avoid spaces and special characters. Note the following. • For plan and invoice templates, this field is display-only. There is only one template for plans and one for invoices; their IDs cannot be changed. • Template IDs must be unique across Distributed Marketing. Additionally, once you use a template ID, you cannot use it again, even if you delete it. • Template IDs must be unique across object type. For example, you cannot have two project templates, both having an identical ID, such as tradeshow. If you have two tradeshow project templates, you should use different IDs, such as *tradeshow01* and *tradeshow02*. Additionally, once you use a template id, it cannot be used again, even if you delete it. • Once created, you can edit this field only if no objects have been created based on this template.
Default Name	The default name given to an object (project, marketing object, etc.) created using this template. For auto-created marketing objects, this name is part of the unique name generated when the system auto-creates the marketing object. You can leave this field blank if you wish.
ID Prefix	Prefix for the object's external ID. Each plan, program, project, or marketing object in Marketing Operations has an external ID assigned to it. For example, the first project's ID might be 1001. You can set the ID prefix by template, to easily determine the template on which an object is based. For example, you could choose an ID Prefix of **TRS** for the Tradeshow project template. The first tradeshow project you create would then have an ID of TRS1001.

Property	Description
ID Generation Class	Java class to specify a numbering algorithm for objects. By default, Marketing Operations assigns a sequential number to each object (plan, program, or project). However, you can configure Marketing Operations to use an algorithm defined by you to set the external ID. If you choose to do this, the ID Generation Class specifies the Java class used to generate the code. You must edit this attribute only if you want to generate IDs according to an algorithm other than the default.
Metrics	For processes (projects, programs, and plans), the metrics template used for the object. You can select any metrics template available in the pull-down list.

In addition to the fields listed above, project templates contain the following settings.

Property	Description
Security Policy Use Model	Determines the way a "use" security policy is determined when a project request becomes a project. When the value of this field is **User Security Policy**, the **Use Security Policy** field on this tab is disabled. The person creating the project or request from this template specifies the "use" security policy when creating the item. When the value of this field is**Template Security Policy**, the **Use Security Policy** field on this tab is enabled and the template developer selects the "use" policy.
View Security Policy	Specifies the security policy that determines which users can select this template when they create a new project or request.
Use Security Policy	Specifies the security policy that determines which users can access the projects or requests after they are created.
Export tab	Select the project tab to export when you export the Calendar. You can choose either the Summary tab or any custom tab. When you export the Calendar, a link to the tab and the data for the tab are included with the exported calendar data. This allows you to navigate into each exported project to view some of its data.

Budget Approval Rules tab

You can write approval rules on the Budget Approval Rules tab of program, project, and invoice templates to streamline the approval process. Define rules to automatically approve budget and invoice line items using the rule builder. Each time a line item is added or edited, IBM Unica Marketing Operations checks it against the approval conditions set in the program, project, or invoice template. If the line item meets the conditions, then it will trigger an approval process. If the line item change does not meet the conditions, it will be automatically approved.

Each line item requires a separate approval. Depending on the conditions set, a single line item may trigger multiple, parallel approvals from multiple approvers.

For projects and programs, you can build conditions based on any attribute in any form of the object's template. You can also build conditions based on the following budget attributes.

- Expenditure date
- Source account

- Cost category
- Committed amount
- Forecast amount
- Vendor name

For invoices, you can build conditions based on any attribute in any form of the invoice template. You can also build conditions based on the following line item attributes.
- Source account
- Cost category
- Cost per unit
- Quantity
- Total cost

For more information on the approval process, see the *IBM Unica Marketing Operations User's Guide*.

Note: If you do not write any rules, IBM Unica Marketing Operations will not require any approvals and functions as it did prior to version 8.5.0.

Depending on the template, you can build rules using Marketing Operations dummy users. These users can then be mapped to real users in your organization.
- **Program Template**: Program Owner and Account Owner
- **Project Template**: Project Owner and Account Owner
- **Invoice Template**: Invoice Owner and Account Owner

Rule Builder

The following table describes the fields in the Rule Builder window.

Field	Description
Condition	Lists conditions you have built and saved in the IF section of the Rule Builder.
Resource assigned	Lists the resource you assigned in the IF section of the Rule Builder.
Update	A link that allows you to change an existing condition.
IF the following condition is true	A list of conditions you are assembling as part of a compound condition.
Attribute drop-down list	You begin building a rule by selecting from this drop-down list of all the custom and default attributes of the project template, except for Marketing Object attributes and TVC attributes (attributes placed on grids or lists). Depending on what you select, additional fields may be enabled. For example, if you select Description, an additional drop-down list allows you to select End With, Contains, =, or Start With and a text field allows you to enter text.
Comparison drop-down list	A drop-down list with options that vary depending on the selected attribute.
And/Or	A drop-down list that allows you select And/Or operators for compound conditions.

Field	Description
THEN assign the following resource	A drop-down list from which you can select a user or team to assign if the conditions are met.
Add	A button you click to add a part of a compound condition to the compound condition you are assembling.
Default Resource	A drop-down list from which you must select to designate a team or user to be assigned if none of the conditions are met. **Note:** The Default Resource field is not available in the rule builder for budget and invoice rules; the default action is to process without approval. If no conditions are met, budget and invoice line items are automatically approved.
Save Compound Condition	Once you build a compound condition, click this button to save it and move it to the Compound Conditions area of the Rule Builder.
Up	A button that allows you to move a selected condition up in the list.
Down	A button that allows you to move a selected condition down in the list.
Delete	A button that allows you to delete the selected condition.
New	A button that allows you to clear selected options before you add a new part of a compound condition.
Update	A button that allows you to edit the selected condition.
Preview	A tab that contains a printer-friendly version of the rule.

To build budget approval rules

You can write rules to automatically approve line item changes on the Budget Approval Rules tab of program, project, and invoice templates, which streamlines the approval process.

Note: If you do not write any rules, IBM Unica Marketing Operations will not require any approvals and function as it did prior to version 8.5.0.

1. Navigate to the Budget Approval Rules tab of the program, project, or invoice template to which you wish to add budget approval rules.
2. Click **Add Approval Rule**. The Rule Builder opens.
3. Select attributes, operators, and resources to create conditions specifying when to show the form. See “Rule Builder” on page 53 for more information.

   Use the AND and OR operators to build compound conditions. Use the **Add** button to connect each condition.
4. From the **Assigned Approver** drop-down list, select an approver to receive the request if the condition is met.
5. When the condition is complete, click **Save Compound Condition** to move it up into the **Compound Condition** box where it is ready to be used.
6. After you are finished creating compound conditions, click **Save and Finish**. The rule builder closes.
7. When you are finished building rules, click **Save and Finish** on the Budget Approval Rules tab.

   You can build multiple rules, which may result in multiple, parallel approvals.

For each rule, if the condition is met, the line item approval request is sent to the assigned approver. If the line item does not meet the conditions for any rules, it is automatically approved.

To edit budget approval rules

1. Navigate to the Budget Approval Rules tab of the program, project, or invoice template on which you wish to edit budget approval rules.
2. Click the Rule Builder icon ( ) in the **Edit Rule** column of the rule you want to change. The Rule Builder opens.
3. Modify or add conditions.
   - To update an existing condition, click **Update** in the Compound Conditions box to move it down into the work area of the Rule Builder. After you make your changes, click **Save Compound Condition**.
   - To add a new condition, follow steps 3 through 5 in "To build budget approval rules" on page 54.
4. Click **Save and Finish** in the Rule Builder.
5. Click **Save Changes** on the Budget Approval Rules tab.

To delete budget approval rules

1. Navigate to the Budget Approval Rules tab of the program, project, or invoice template from which you want to delete budget approval rules.
2. Select the checkbox next to one or more rules you want to delete.
3. Click **Remove Selected Rule(s)**.
4. Click **OK** to confirm that you want to delete the rule(s).
5. Click **Save Changes** on the Budget Approval Rules tab.

Template Tabs tab

Use this tab to add forms to the Summary tab and create custom tabs. For example, you could create a custom tab called **Printing**, where you want users to specify information about the outside vendor that they plan to use to get the collateral printed. In this tab, you could add a drop-down list that allows users to select a printing company from a list of several vendors. You could also add a text box that allows users to enter the quoted price of each page of the collateral.

When you configure security policies for your organization, you can configure custom security permissions for these tabs.

Internal Name

For each tab, the Internal Name displays. If IBM Unica Marketing Operations-Campaign integration is enabled, this string identifies the form when mapping attributes to IBM Unica Campaign.

Tab Page Style

Select **summary** to add additional forms to the bottom of the Summary tab. Typically, you select this option for forms containing a relatively small amount of data that you want users to see on the Summary tab when they first open the object.

Click **tab** to specify that the tab's contents should appear on a separate tab. Use this option for forms, or groups of forms, that require their own page, as in the **Printing** tab example.

Tab Visibility

Click **Show in Wizard** to make the tab visible in the new object wizard in IBM Unica Marketing Operations. If you leave this unchecked, the tab does not display when you create an object using the wizard, but appears once you save the object.This option is available for project/request and program templates.

Click **Show in Request** to make the tab visible for project requests. If you leave this unchecked, the tab does not display when you create a new request using the wizard nor does it display once you save the request. It will still appear in the project. This option is only available for project templates.

Rule-based showing and hiding

When adding forms or custom tabs, you can choose whether to show them as expanded or collapsed by default. Showing the form as collapsed on the template can save time if users do not need to see or enter that information. The user can always expand the form if he or she needs to work with it.

By default, all forms are shown. If desired, you can build rules specifying when to show the forms. For a form with a specified rule, the form will be expended only when the rule is satisfied, otherwise it will be collapsed.

For more information, see "To build rules for showing and hiding forms" on page 57.

To add a tab to a template

1. Navigate to the Tabs page for the template.
2. Click **Add Tab**.
3. Enter a descriptive name for the tab in the **Display Name** text box.

   The name you choose becomes the name of the tab in objects created from this template.
4. Choose whether to show the form on the **Summary** tab or its own custom tab.
5. Optionally, create rules to show and hide the forms. See "To build rules for showing and hiding forms" on page 57.
6. Select a form from the **Form** pull-down list.

   This list contains all the forms available in IBM Unica Marketing Operations, except for the TCS (Target Cell Spreadsheet) forms used by campaign projects.
7. If you are adding a grid, you can select a data validation rule from the **Data Validation Rules** pull-down list.
8. Select the visibility options for the tab.
9. Click **Save Changes** to save the tab, or **Add Tab** to add another tab.

To move a tab or form on a template

1. Navigate to the template's Tabs tab.
2. Click one of the following buttons after **Move**.
   - **Down** to move the tab or form down. Moving a form on the Summary tab down places it lower on the object's **Summary** tab. Moving a custom tab

down places it further to the right in the tab list. For example, if the tab was fourth in the list, moving it down once makes it fifth.
- **Up** to move a tab up. Moves it up or forward one position.

Note: Forms on the Summary tab must come before custom tabs.

To delete a form or custom tab from a template

Important: Deleting a form or custom tab from a template deletes it from all existing objects created from the template. Do not delete a form or custom tab from a template that has already been used to create items. If you do, data will be lost.

1. Navigate to the template's Tabs page.
2. Scroll to the section that defines the form or custom tab you want to remove and click **Delete** (on the right side of the page).

   The form or custom tab is removed from the object template.
3. Click **Save Changes**.

To build rules for showing and hiding forms

When you add additional forms or custom tabs, you can choose whether to show or hide the forms by default. Hiding the forms can help streamline the process of filling out the template for users; they can always expand the form if needed.

1. After you select the form on the **New Tabs** tab, click the build rule icon ( ). The Rule Builder opens.
2. Select attributes, operators, and resources to create conditions specifying when to show the form. See "Rule Builder" on page 53 for more information.

   Use the AND and OR operators to build compound conditions. Use the **Add** button to connect each condition.
3. When the condition is complete, click **Save Compound Condition** to move it up into the **Compound Condition** box where it is ready to be used.
4. Select the check box next to each condition you want to use in the rule.
5. Click **Save and Finish** to apply the rule.

If the condition is met, the form is shown. If the condition is not met, the form is hidden.

If you do not create any rules, all forms are shown by default.

Template Attachments tab

You can store attachments with a template, so that whenever an object is created from the template, certain images or documents are attached to the object by default.

Use this tab to perform the following actions.

- Add one or more attachment folders to organize attachments; use the **Add a Folder** link.
- Attach one or more files to the template.
- Move folders up or down in the list; use the **Up** and **Down** links to reorder attachment folders.

- Delete default attachments; click the **Delete** link next to the file you want to remove.
- Delete folders; click the **Delete** link next to the folder you want to remove. All attachments under the folder are also deleted.

1. Navigate to a template's **Attachments** page.
2. Click the **Add an Attachment** link next to the folder to contain the asset.
   The **Upload Attachment** dialog appears.
3. Enter the file name and path or use the **Browse** button to locate the attachment.
4. Click **Save Changes** to attach the file.
   The attachment file is displayed in the list under its folder.
5. On the Attachments tab, click **Save Changes** to save the new default attachment.
   Repeat the steps to add as many attachments as needed.

Template Custom Links tab

Use this tab to create custom links that appear on one or more tabs for the object created from this template. For example, you may want to link to an application that your organization uses to generate ID codes for collateral pieces or direct marketing offers.

When adding parameters, the screen contains a series of pull-down menus. The choices you make in one list determine the choices available from the subsequent list. This screen contains the following properties.

Property	Description
Name	Enter a name for the link. This value becomes the name of the link.
ID	Enter the unique internal ID of the custom link.
Description	Enter some descriptive text for the link This text is shown on the mouseover for the link.
URL	Enter the URL to open when users click the link.
Tab Visibility	Check the tab(s) where the link should appear. Links appear at the bottom of the tab.
Options	For project templates, you can check **Show in Request** to make the link available from requests (as well as projects) created from the template.
Add a Custom Link	Click to add a new link; a new group of fields appears. To add the link, fill in the fields and click **Save Changes**.
Add Parameter	Click to add a parameter to the custom link. Name and Value fields appear. Depending on your selections, new name/value field pairs appear. IBM Unica Marketing Operations looks for a question mark(?) at the end of the URL and places the parameters after the question mark. If it does not find a question mark, it appends one to the end of the URL and then adds the parameters.
Delete (link)	Click to delete a custom link. This link appears next to the **Add Parameter** link for the link that you are deleting.
Delete (parameter)	Click to delete a parameter for a custom link. This link appears next parameter you are deleting.
Up Down	If you have more than one custom link, use the **Up** and **Down** links to reorder the custom links.

Project template Project Roles tab

Use this tab to specify the project roles of the people who will participate in the projects and project requests created from this template. When you configure the security policies for your organization, you can customize access rights to each tab of the projects created from this template for each the project roles listed here.

A project role must exist before you can add it on the **Project Roles** tab. To create a project role, select **Administration** > **List Definitions** > **Roles**.

This tab contains the following settings.

Name	Description
Project Request Recipients	The project roles of the team members who receive the requests created from this template. Note that you use the **Request** tab to configure how requests are handled. The values you specify in this field on the **Project Roles** tab appear in the **Recipient Role** field on the **Request** tab.
Team Members	The project roles of the people who participate in projects created from this template. These are the project roles that you can assign to tasks on the Workflow tab.
Reviewers	The project roles of the people who participate as reviewers. These are the roles that can be assigned as reviewers in the projects created from this template.

To add a role, click the **Add Role** list box for **Project Request Recipient**, **Team Members**, or **Reviewers** and select a role from the drop-down list. The available values are populated from the list definitions. Also, if a workflow is imported on the Workflow tab, the roles present in the workflow are added to the list of available roles if they are not already present in the list definitions.

To delete a role, click the **Remove** link next to the role you want to delete. You cannot delete a role that is specified either in a task on the **Workflow** tab or as a recipient on the **Request** tab.

Project template Request tab

The Request tab is available only in Project templates. Use this tab to set up the following for all requests created from this template.

- Request recipients or how request recipients are designated.
- The order in which recipients receive request notifications and in which they must respond to requests.
- The length of time recipients have to respond.
- The way reapprovals are handled.

The Rule Builder on a project template or the Request tab of a project template allows you to set up a condition or series of conditions that determines what recipients receive a project request. Note the following.

- A project request based on a template that has recipient rules uses all of the rules you set up with the Rule Builder.

- If you change the recipient rules in the template, it affects the behavior of all existing requests based on the template. Any other changes you make to a project request template are reflected only in new requests created from the template, not to existing requests based on that template.

Request tab fields

This section describes the fields on the template Request tab.

Setup Project Request

The following table describes the fields in the Setup Project Request section.

Table 4. Fields in the Setup Project Request section

Field	Description
Request description	The description displayed when a user adds a project request. Briefly describe the purpose of the template. Length is limited to 300 characters.
Request re-approval rule	Radio buttons provide the following three options for the way project requests are handled if they are returned and then resubmitted. • If project request returned and then resubmitted, request is processed by all recipients again (the default). • If project request returned and then resubmitted, start process with the person who rejected. • If project request returned and then resubmitted, request owner selects the recipients it needs to go to. In this case, on resubmitting the request the owner of the request can select only required recipients who have accepted the request.

Setup Recipients

The following table describes the fields in the Setup Recipients section.

Table 5. Fields in the Setup Recipients section

Field	Description
Request owner can add and/or delete recipients	If you do not add recipients, you must leave this check box checked or you receive an error message when you save the template. If this check box is checked, a project request that uses this template allows the requester to assign new recipients and change any non-mandatory pre-configured recipient assignments.
Add Recipient Step	A link that enables a set of fields you configure to add request recipients.
Remove selected Recipient Step(s)	A link that enables you to delete the recipients you selected by checking the box at the beginning of the row.
Recipient Role	A drop-down list containing the recipient roles you configured on the **Project Roles** tab.

Table 5. Fields in the Setup Recipients section (continued)

Field	Description
Recipient Assignment	A drop-down list that enables the following options. • User/Team: Selecting this option enables a drop-down list of users from which you select to assign a user or team to the role you selected in the **Recipient Role** field. If you select a team, the recipient is a team member or team manager (who assigns the request to a team member); this is determined by the option selected in the Request Routing Model section of the Team's summary tab. • Requester Assigned: Allows the requester to assign a user to the role you selected in the **Recipient Role** field. Also, if you set the other fields (such as Default Duration, Sequence, and Project Owner), these values become the defaults for this request recipient, but the requester can change them. • Rule Driven: Selecting this option enables an icon that you click to open a Rule Builder window that allows you to define rules for assigning a user to the role you selected in the **Recipient Role** field. See "Rule Builder" on page 53 for a description of the Rule Builder.
Default Duration	Time allowed for each review step. The way days are counted is set up when IBM Unica Marketing Operations is installed and configured, in the **numberOfHoursPerDay** parameter. See the *Marketing Operations Installation Guide* for a description of the options provided for this setting. If recipients do not respond within the time set as their default duration, they receive an alert. If the recipient is a team, alerts are sent according to the Request Routing Model configured for that team.
Sequence	A text field in which you enter a sequence number. You can specify the sequence number for each recipient to specify the order in which the recipient receives notification of the request and must approve the request. You can control whether recipients act in parallel with other recipients or before or after any other recipient. If you assign the same number to multiple recipients, they would all receive notifications when it is their turn to respond. This field must contain a number; the maximum is 99. By default, each time you add a recipient the value of this field is incremented.
Project Owner	The recipient designated as the project owner becomes the owner if the request is accepted by all required reviewers. The project owner is always a required recipient.

Table 5. Fields in the Setup Recipients section (continued)

Field	Description
Required	A check box that determines whether a recipient is required. Check the box next to each recipient who must approve. If this box is not checked, the recipient is optional. Note the following behavior for required recipients. • If a recipient is required, the next recipient in sequence is not notified (and cannot respond) until the current recipient responds. • If a recipient is required, and that recipient denies the request, then the next sequential recipient is not notified; rather, the request is placed on hold, and the owners are notified. • If multiple recipients have the same sequence number (and therefore can act simultaneously), and one of the required recipients rejects the request, the request process continues until all the required recipients of the simultaneous process respond. After all responses from that step are complete, the system sends a notification to the request owner and recipients who were previously notified of the request. • At least one recipient must be set to Required. The system generates a warning message if someone tries to start a request that contains no required recipients.
Instructions	Opens a window where you can add instructions that this recipient sees on the Summary page of the project request. Length is limited to 1024 characters.

Example: Building a Template Request rule

This example describes how to build a rule for assigning reviewers to a project request. Assume the following scenario.

- You are setting up a project template to use when your organization creates print advertising campaigns.
- You have defined a custom attribute named Region where the region can be specified for a project. The regions are named NA (North America), APAC (Asia-Pacific), and EURO (Europe).
- You want different creative teams to review project requests based on the project's region.
- One Project Request Recipient role is defined for the project: Project Manager.

1. In the Setup Recipients area of the Requests tab of the project template, clear the **Request owner can add and/or delete recipients** box, because you want your rule to control who reviews the project requests (based on region) and you do not want the project requester to be able to add any other reviewers.
2. On the Requests tab of the project template, click **Add Recipient Step**.

   A new row is added in the Setup Recipients area.
3. Select Project Manager in the **Project Role** drop-down list.
4. Select Rule Driven in the **Recipient Assignment** drop-down list and then click the Build Rule icon that appears.

   The Rule Builder window opens.
5. In the Rule Builder window, do the following for each of the three regions:
   a. Select Region in the **Select a Project Attribute** drop-down list.
   b. Select = in the comparison drop-down list.

c. Type the region name (NA, APAC, or EURO) in the text field.
d. Leave the **And/Or** drop-down list blank.
e. Select the region-appropriate team in the **Assign the following resource** field.
f. Click **Add**.
g. Click **Save Compound Condition**.

   The compound condition moves to the Compound Conditions area.

6. After you build a condition for each of the three regions, select a default resource to receive the request if none of the conditions is met. Click **Add** and click **Save Compound Condition**.
7. Click **Preview** to see your rule as a whole, and to verify that the logic is correct. Print the rule if desired.
8. Click **Save and Finish**.

   The Rule Builder window closes and you return to the Requests tab.

9. Complete the other fields in the Recipient row as desired.

Project template Campaign tab

Use this tab to set up communication from IBM Unica Marketing Operations to IBM Unica Campaign if integration is enabled. It contains the following settings.

Field	Description
Campaign Project template	Select this check box to mark this template as a campaign project template and display the other Campaign Integration fields.
TCS® Form	Select the form that contains the Target Cell Spreadsheet to use for projects created from this template. The drop-down list contains all published forms that contain a TCS.
Metric Data Mapping	XML file containing the data map for sending metrics from a IBM Unica Campaign campaign to a IBM Unica Marketing Operations project for reporting purposes.
TCS Form Display Name	The name to display for the selected form on the TCS tab.
Partition ID	The Partition ID identifies the partition of the IBM Unica Campaign instance in which to create the campaigns that correspond to the campaign projects created using this template. The default value is **partition1**, which is correct if Campaign is installed to a single partition. If Campaign is installed on multiple partitions, you can specify the partition to use for creating campaigns. IBM Unica Marketing Operations allows you to specify any partition. Make sure you specify a partition to which you have access and for which integration is enabled. For more information on setting up Campaign partitions, the *IBM Unica Campaign Installation guide*.
Show TCS tab in request	Select the check box to display the TCS when the template is used to request a project. If the check box is clear, the TCS displays only in campaign projects and not in requests.

Field	Description
Approval Required	Select the check box to require approval for all the target cells created in the template. If unchecked, the TCS grid will not show the **approval** column or **approve all** and **deny all**. If you upgrade to version 8.2, all upgraded campaign templates will have **Approval Required** unchecked. For more information, see “About approving the TCS” on page 78.

Note: Once you create a project using the template, you cannot change a non-campaign template to a campaign template or vice versa. The **Campaign Project template** option is disabled.

The following options are also disabled once a project is created using the template:

- **TCS Form**
- **TCS Form Display Name**
- **Partition ID**
- **Show TCS tab in Request**
- **Approval Required**

You can only change the values for these options if you first delete all of the projects that were created using this template.

Template Workflow tab

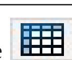
The **Workflow** tab of a project template is similar to the workflow spreadsheet displayed in an individual project. Use the **Workflow** tab to set up the stages, tasks, and member assignments that are common for all created from the template. Then, owners use the workflow spreadsheet to modify the workflows as necessary for their projects.

Like the workflow spreadsheet, the template Workflow tab has two modes: view and edit. To edit the workflow displayed on the tab, click the **Edit** link.

You can save a workflow as a template from either the project template **Workflow** tab or from the workflow spreadsheet in an individual project.

Project template Workflow tab links

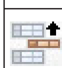
When the **Workflow** tab of a project is in view mode, it displays the following links and buttons.

Link	Description
Breadcrumbs	Breadcrumbs are the list of pages you visited prior to arriving at the current page that are located above the project name. Click any active link in the breadcrumbs trail to go to that page.
Edit	Click to open the tab in edit mode and configure the workflow.
View as spreadsheet	Click the  icon to view the workflow as a spreadsheet. This view provides access to granular information about a task, presented in table format. This is the default view.

Link	Description
View as process flowchart	Click the  icon to view the workflow as a process flowchart. This view shows the workflow tasks as a network diagram.
Save as template	Click to save the workflow as a template.
Import template	Click to select an existing workflow template for the project.
Tasks and stages	In the spreadsheet view, tasks are links that behave as follows: • Clicking an approval task triggers the Setup Approval dialog in a new window. • Clicking a workflow task triggers the Setup Task dialog in a new window.

Project template Workflow toolbar

The Workflow tab toolbar appears only when the tab is displayed in edit view. You use the buttons on the toolbar to add and delete stages and tasks and so on. The following table describes the toolbar.

Icon	Description
	**Add task row.** Click to add a task row. Inserts a new task in the workflow spreadsheet.
	**Add approval row**. Click to add an approval row. Inserts a new approval task in the spreadsheet. Note that to configure the approval associated with this task, you must return to view mode and then click on the name of the task.
	Indicates how dependencies are determined for new tasks added to the list: • No dependencies • In series • In parallel
	**Insert Stage Row**. Click to insert a new stage in the spreadsheet. Tasks are grouped in stages.
	The Tools menu contains the following choices: • **Copy:** copies the contents of the selected cells to the clipboard. • **Paste:** pastes the contents of the clipboard, beginning at the selected cell. • **Paste Rows After:** pastes the contents of the clipboard below the selected row. • **Fill Down/Up:** copies a cell's values to a range of cells. • **Clear:** erases all entries in the selected cell or group of cells. • **Clear Column:** erases all entries in the selected column. • **Clear All:** erases all entries in the workflow.
	Click to undo your last change.
	Click to reapply a change you undid with the Undo action.
	**Move Selected Row Up**. Click to move the selected task or stage upward. If you move a stage, the associated tasks move with it.

Icon	Description
	**Move Selected Row Down**. Click to move the selected task or stage downward. If you move a stage, the associated tasks move with it.
	**Delete the Selected Row**. Click to delete the selected task or stage. Note the following: • If you delete a stage, all of its associated tasks move up one stage. • You cannot delete the first stage.

Workflow tab fields

The following table describes each field that appears on the project template **Workflow** tab.

Field	Description
Task Code Prefix	A short identifier that the system prepends to the task IDs of the tasks for projects created from this template.
Tasks and stages	The names of the task stages and tasks for the project. To indicate that this task is dependent on a prior task, add the number of the task it is dependent on in parenthesis. For example, a task named "Estimate Costs (2.3)" is dependent on task number 2.3. When the tab appears in edit mode, click a stage or task to revise or change it. When the tab appears in view mode: • Click an approval task to display the **Setup Approval** form in which you configure the approval. • Click a people task to display the **Setup task**form in which you specify whether attachments can be added to the task.
Required	Whether or not this is a required task. When a project is created from this template, required tasks cannot be skipped or deleted and their names cannot be changed.
Enforce Dep.	If this task is dependent on other tasks, determines how strictly the system interprets dependencies. When this option is selected, the system restricts project members from updating this task until the tasks it depends on are finished.
Member Role(s)	The project role or roles associated with the task. The list of options in this column includes only the project roles that are listed on the **Project Roles** tab of this template.
Milestone Type	An optional milestone type. The options in the drop-down list are confgured by Plan administrators. For example: Meeting, Event, Job Start, and so on. For information on setting up milestones, see the *Marketing Operations Installation Guide*.
Anchored Dates	Indicates whether or not the task can participate in date rippling. When this option is selected, the date set for the task in a project created from this template is a fixed date that cannot be calculated or changed by date rippling.
Default Duration	The amount of calendar time to specify by default for this task when a project is created from this template. Click the clock icon and enter the duration in days, hours, and minutes.

Field	Description
Target Effort	The targeted effort to specify by default for this task when project is created from this template. Click the clock icon and then enter the effort in days, hours, and minutes.

About the workflow process flowchart view

The process flowchart view shows displays the tasks in a network diagram style, as follows.

- Each task is displayed as a box with a task number and ID.
- Tasks that have dependencies are connected to any tasks they depend on.
- Sequential tasks are displayed on the same line.
- Parallel tasks are displayed on different lines.
- Independent/orphan tasks are displayed on their own line, with no connections.

To configure workflow for a template

To configure the workflow for a project template, you create the template, specify the roles, and then create the workflow.

1. Select **Settings > Marketing Operations Settings**.
2. Click **Template Configuration**.
3. Under Project Templates, click **Add Template**.
4. Complete the fields in the **Template Properties** form and click **Save changes**.
5. Use the **Project Roles** tab to specify the roles of the participants and click **Save changes**.
6. Select the **Workflow** tab and click **Edit**.
7. Add the appropriate people tasks, approval tasks, and stages.

   If you need help with this step, see the workflow chapter in the *IBM Unica Marketing Operations User Guide*.

   Remember to save frequently.
8. When the workflow is complete, click **Save and Finish**. The tab returns to view mode.
9. If you added any approval tasks, click the approval row and use the **Setup Approval** form to configure the approval. (You can configure the approval only when the **Workflow** tab is in view mode.)
10. Optionally, click the flowchart button to display the workflow as a process flowchart.

To create workflow templates

To create workflow templates, you start by creating a project template. When you are finished configuring the workflow for the template, you save the workflow as a template.

A workflow template retains the stage and task definitions and role settings. However, while it retains approval tasks, it does not keep the configured approvers. Approvers must be configured in each project template that uses the workflow template.

1. Select the **Workflow** tab of the appropriate project template.
2. While the tab is still in view mode, click **Save as Template**.

3. Enter a descriptive name for the template and click **Continue**.
4. Click **Save Changes**.

   The workflow is saved as a template in the template library.

To use workflow templates

1. Create the project template as usual, but skip setting up roles because they are imported with the workflow template.
2. Select the **Workflow** tab.
3. While the tab is still in view mode, click **Import Template**.

   A warning is displayed stating that the import will overwrite the existing workflow.
4. Click **OK**.

   A list of templates opens.
5. Select a template from the list and click **Import**.

   The workflow opens in the tab, and the roles referenced in the task and stage rows are now listed on the Project Roles tab.
6. While the **Workflow** tab is still in view mode, click any approval tasks and configure the approvals.
7. If you must modify or add stages or tasks, click **Edit**.

   Then customize the workflow as necessary for the project template. Remember to save your changes.
8. When the workflow is complete, click **Save and Finish** to return to view mode.

Customizing milestone types

You can customize the list of milestone types for your IBM Unica Marketing Operations installation. The milestone type list displays on workflows. Changes to the milestone type list affect every workflow on your system.

The following milestone types are available by default.

- Checkpoint
- Drop Date
- Event
- Job Completion
- Job Start
- Meeting

You can add new milestone types and delete milestone types.

You customize milestone types by editing the uap_wf_milestone system table in your database configuration tool.

Workflow templates page

Use the **Workflow templates** page to import, export, delete, enable, or disable workflow templates.

To edit workflow templates, use the **Workflow** tab of a project template. That is, import the workflow template into a project template, edit the workflow, and then resave the workflow template.

Workflow templates fields and functions

The **Workflow templates** page lists all the workflow templates and presents the following information and functions.

Icon	Item	Description
	Name	The name of the workflow template.
	Stages/Tasks	The number of stages and tasks in the workflow, separated by a '/' character. For example, this column's value for a workflow that has 5 stages and 30 tasks is **5 / 30**.
	Created Date	The date the template was created.
	Last Modified Date	The date of the most recent change made to the template.
	Status	Whether the template is enabled or disabled. When a workflow template is created, its status is set to Enabled by default.
	Export	A link that enables you to export an individual workflow XML file. You can then import it into another IBM Unica Marketing Operations system.
Import icon ()	Import Workflow Template	A link that enables you to import an individual workflow XML file, typically one that was exported from another IBM Unica Marketing Operations system.
Delete icon ()	Delete Selected Workflow Template	A link that allows you to delete selected workflow templates.
Enable/ Disable button	Enable/Disable Workflow Template	Marks the selected templates as enabled or disabled. A disabled workflow template cannot be selected from a project template.

To export a workflow template

You can export individual workflow templates. You may want to edit the exported XML file, then reimport the workflow template back into IBM Unica Marketing Operations.

1. Select **Settings > Marketing Operations Settings**.
2. Click **Template Configuration**.
3. Click **Workflow**.
4. Click the **Export** link for the workflow you want to export.
5. Choose a location to save the XML file, and save it.
6. Open the file with a text or XML editor, make your changes, then save the file.
7. Navigate back to the templates library (**Settings > Marketing Operations Settings**).
8. Click **Import Workflow Template** and browse to your edited XML file.
9. Name the file to differentiate it from the previous version.

   For example, if you export `Marketing Collateral`, you could name your edited file `Marketing Collateral 2`. (You can always rename the file later.)
10. Create a template and use the new workflow; or open an existing template and replace the old workflow template with the new one.

Data Mapping Definitions page

The **Data Mapping Definitions** page allows you to map data betweenMarketing Operations projects and campaigns in Campaign. Use the **Data Mapping** link from the **Template Configuration** page to configure data mapping.

The Data Mapping Definitions page contains the following columns:

Column	Description
Name	The name of the data mapping file.
Type	**Campaign Metrics Import**: maps Marketing Operations project metrics to Campaign contact and response counts. If you have map files from previous versions, you may see other values in the Type column.
Used By	A list of templates that use this data map.

Note: You cannot create a map file within Marketing Operations; use a text or XML editor to create and edit the necessary map files.

Mapping IBM Unica Campaign contact and response counts to Marketing Operations metrics

If you want users to be able to import contact and response counts into Marketing Operations, you must map contact count and the response types to Marketing Operations metrics.

Note: Campaign passes data to Marketing Operations for one audience level only, the audience level that is mapped to the UA_ContactHistory, UA_ResponseHistory, and UA_DtlContactHist system tables. The audience level can be any audience level, with any number of audience key fields of any data type or name. For details on audience levels, see the Campaign documentation.

The response types are stored in the UA_UsrResponseType system table in the Campaign database. To map a metric to a response type, you must know the name of the response type.

The mappings are stored in an XML file.

To map IBM Unica Campaign contact and response counts to Marketing Operations metrics

1. In Campaign, modify the list of response types in the UA_UsrResponseType table if necessary to include the response types you want to track.
2. Edit the Marketing Operations metrics file being used by your system to include metrics that correspond to contact count and the response types.
3. Create a map file that associates the Marketing Operations metrics with contact count and the response types.
4. Add the map file to Marketing Operations.
5. Create a campaign template and select the map file from the Metric Data Mapping drop-down list.

The contact and response data is mapped to metrics for all projects created using that template.

About the metrics data mapping file

The metrics data mapping file must use the container elements <metric-data-mapping> and </metric-data-mapping>.

The next line in the mapping file must be the following:

```
<datasource type="webservice">
 <service-url>CampaignServices</service-url>
</datasource>
```

The actual mappings must be contained by the elements <metric-data-map> and </metric-data-map>.

metric

Use the <metric> element to define the metric in a mapping. The <metric> element has no value but must contain the child element <data-map-column>. The <metric> element has the following attributes:

Attribute	Description
id	The internal name of the metric
dimension-id	The number of the column into which the value from Campaign should be placed. Columns are numbered from left to right. The first column is column 0.

data-map-column

Use the <data-map-column> element to define the data source (either contact count or a response type) in a mapping. The <data-map-column> element must be contained by the <metric> element that defines the metric to which contact count or this response type is mapped. The <data-map-column> element has no value but has the following attributes:

Attribute	Description
id	The data source to be mapped to the metric. For contact count, use `contactcount`. For a response type, use `responsecount_<ResponseTypeName>`.
type	This value should always be `number`.

To add a data mapping

Use a text or XML editor to create or edit a data mapping file. After you have a data mapping file, you add it to Marketing Operations using the following procedure.

1. Select **Settings** > **Marketing Operations Settings**.
2. Click **Template Configuration** > **Data Mapping**.
3. Click **Add a data mapping**.

   The Upload Data Mapping dialog box appears.
4. Enter a name.

This is the display name for the data mapping file.
5. Browse to the XML file that defines the data mapping.
6. Click **Continue**.

To edit a data mapping

If you want to update a data mapping file, you must first edit the XML file, and then reload it back into Marketing Operations.

1. Open the data mapping XML file in a text editor and make your changes.
2. Select **Settings > Marketing Operations Settings**.
3. Click **Template Configuration > Data Mapping**.
4. Click the file name you are updating.

   The Update Data Mapping dialog box appears.
5. Select **File**, and browse to the XML file.
6. Click **Continue**.

   You are prompted to overwrite the existing file.
7. Click:
   - **Save** to overwrite the existing file with the newer version, or
   - **Cancel** to leave the previous version of the file.

To delete a data mapping

You cannot delete a mapping file if a template uses it.

1. Select **Settings > Marketing Operations Settings**.
2. Click **Template Configuration > Data Mapping**.
3. Click the **Delete** link for the data mapping file you want to delete.

Icons page

The **Icons** page allows you to view and add icon files. These icons are displayed in various sections of Marketing Operations, and for object templates you choose.

Use the **Icons** link from the **Template Configuration** page to manage icons used in object templates.

The **Icons** page contains the following columns:

Column	Description
Image files	A large and small image for each icon. Click the images to change the icon name or the image files.
Name	The name of icon.
Used By	A list of object templates that use this icon.
Delete	A link to delete the form. This link is only available for icons that are not used in any templates.

When you specify icons, specify two image files for each icon:

- **Main icon**: the large image is displayed when a file of this type is presented in the system. For example, the main icon is shown in the project selector (the dialog box that appears when you create a project; you select from a list of templates).
- **List** icon: the small image appears on the object list page. For example, the project list page contains the list icons for all project on the page.

To add or edit an icon

1. From the **Settings** menu, select **Marketing Operations settings**.
2. Click **Template Configuration**.
3. Click **Icons**.

   The **Icons** list page appears.
4. Click:
   - **Add Icon** at the upper right section of the page, to add an icon, or
   - An icon image (large or small) to edit an icon.

   The **Update Icon** dialog appears.
5. Type or edit the name of the icon.

   Note: If you are updating an existing icon's name only, do not check the box next to the **File** or **List Icon Image File** labels and skip step 6. If you want to update either image, check the box corresponding box and continue to step 6.
6. Enter file names for the icon images:
   - Navigate to a main image file using the **Browse** button of the **File** field to add or change the main image.
   - Navigate to a list image file using the **Browse** button of the **List Icon Image File** field to add or change the list image.

   Note: Marketing Operations is installed with a set of default icons; you can choose from these icons, or add icons customized for your organization. File images have a maximum size of 46 x 54 pixels. List icon images a maximum size of 20 x 24 pixels.
7. Click **Continue** to load the files into Marketing Operations, or **Cancel** to stop the upload:
8. Click **Save Changes** to confirm the upload, or **Cancel** to stop the upload.

   The new or edited icon appears in the list.

About importing and exporting templates

The template import/export functionality allows you to:

- Export templates into a self-contained archive, and
- Import templates that have previously been exported or saved to a self-contained archive.

Specifically, the export command downloads a ZIP archive to your computer; import uploads a ZIP archive to the Marketing Operations server.

Note: The Marketing Operations installation does not install the Unica example templates. If you want to use the examples, you need to import them. For details about the example templates, see “List of example templates” on page 43.

You can use the import and export commands to create a portable archive. For example, you can export all of your templates from a test server after you verify they work correctly, then import them to a production server.

Note: If you have localized roles, they are exported/imported to/from the archive as well.

About importing templates

You can import campaign project templates that you created prior to Marketing Operations 8.0.0, but the templates are disabled. Users cannot use them to create projects.

Template import fails if the template archive contains any of the following:

- A campaign project template created prior to Marketing Operations 8.0.0 with the same name as a campaign project template already in the system
- A campaign project template with the same name as a non-campaign project template already in the system (and vice versa)
- A TCS form with the same name as a non-TCS form already in the system (or vice versa)
- A shared attribute with the same name but a different data type as a shared attribute already in the system

Shared attributes used in forms in the template archive are created as shared attributes in the target system.

Note: During import, you have the option of dropping tables. If existing objects (for example, projects) use those tables, dropping the tables deletes the information entered for those objects. For example, if you import a new version of a campaign project template that you have already used to create projects, and you drop the tables, you lose all the information you have entered in the TCS for every project created using that template.

To import templates

You can use the import button to import templates that were created in the same version of Marketing Operations that you are using. To import templates from an earlier version of Marketing Operations, you must upgrade.

1. From the **Settings** menu, select **Marketing Operations Settings**.
2. Click **Template Configuration**.
3. Click **Import**.

   The **Import Templates** dialog appears.
4. Enter the path name of the template archive you are importing, or navigate to it using the **Browse** button.
5. Select the template types to import. By default, all types are imported; uncheck any types you do not want to import.
6. In the **Update Database** section, choose which database scripts to run:
   - Drop tables
   - Create/Update tables
   - Drop Lookup Tables
   - Create/Update Lookup Tables

   Checking all the boxes will fully import the template. However, if you are reimporting a template and you drop the tables, you will lose data in any existing object you created using the template. For example, if you re-import a campaign project template and drop the tables, you will lose any data you entered in the TCS in any project created using that template.

Note: If you are concerned about overwriting data, you can examine the SQL script files in the template archive to see the details, and create the necessary tables and columns manually.

7. Click **Continue** to import the selected template(s).

   A summary page appears, detailing templates being imported, and any warnings about current template files that will be overwritten.

8. Click:
   - **Save Changes** to import the templates, or
   - **Cancel** to stop the import, and avoid overwriting any existing templates.

   The system reads the template files and analyzes them, and reports any errors. Imported templates are saved to the template database, then all available templates are reloaded from the database.

   Note: The archives containing the example templates are located in the `\tools\admin\sample_templates` folder under your Marketing Operations installation. Use the archive for your database type. (For example, use `sample_templatesDB2` if you are using a DB2® database.)

About exporting templates

If you create or edit a group of templates on a development or test Marketing Operations server, you can export them and then import them to a production server.

The template export feature in Marketing Operations allows you to export a group of templates or a single template. In either case, the system creates a self-contained ZIP archive; you can use this archive to import the templates to another Marketing Operations server.

Export creates separate SQL scripts. These separate scripts give you more control over updating your database to work with the new templates when you import them. For example, if you need to add a column here or there, you can run only the create/alter scripts, so as not to needlessly delete tables and existing data.

The system generates the following script files (to use when you import the template archive).

Table 6. Generated script files

File	Description
create.sql	Adds columns to existing tables, and creates new tables needed for the templates.
createlkup.sql	Adds columns to existing lookup tables, and creates new lookup tables needed for the templates.
drop.sql	Deletes existing tables used by the templates. If you do not mind possibly deleting data, you run this script before create.sql to ensure that the database is set up correctly.
droplkup.sql	Deletes existing lookup tables used by the templates. If you do not mind possibly deleting data, you run this script before createlkup.sql to ensure that the database is set up correctly.

Table 6. Generated script files (continued)

File	Description
insertlkup.sql	Inserts data into the lookup tables. This script makes it possible to save complete lookup tables (schema plus data) with the template archive.

To export a group of templates

1. From the **Settings** menu, select **Marketing Operations Settings**.
2. Click **Template Configuration**.
3. The **Export Templates** dialog appears.
4. Select the template types to export. By default, all types are exported, so you can uncheck any types you do not want to export.
5. Select the **Database Type** from the pull-down list.

   This determines the format of the SQL script files generated with the exported templates.
6. Click:
   - **Continue** to export the templates, or
   - **Cancel** to stop the export; skip the remainder of the instructions.
7. Click **Open** or **Save** from the File Download dialog that appears.

   The system creates a ZIP archive containing the template and SQL script files.

To export a single template

1. From the **Settings** menu, select **Marketing Operations Settings**.
2. Click **Template Configuration**.
3. Click **Templates**.
4. Click the name of the template to export.

   The template's **Properties** page appears.
5. Click **Export**.
6. From the Export Template dialog, select the **Database Type** from the pull-down list.

   This determines the format of the SQL script files generated with the exported template.
7. Click:
   - **Continue** to export the template, or
   - **Cancel** to abort the export; skip the remainder of the instructions.
8. Click **Open** or **Save** from the File Download dialog that appears.

   The system creates a ZIP archive containing the template and SQL script files. Open or extract the ZIP file to view the SQL scripts.file.

About template validation

You can perform two types of template validation:
- Database validation
- Attributes validation

You can perform validation at any time by clicking the **Validate Templates** link on the Templates Configuration page. Additionally, the system performs certain validation automatically as described in the following sections.

About database validation

Database validation checks:

- The validity of the database schema, and
- Whether form attributes match their data type in the database.

Notes about database validation:

- The system performs this type of validation on import, upgrade, and export of templates. For export, only forms not linked to any template are validated.
- On import and upgrade, you can save templates even if invalid. You receive warnings, but can still save.
- When adding a form, you cannot save the form if validation finds any errors.

About attribute validation

The system validates attributes in the following ways:

- Template attributes validation checks whether two or more form columns point to the same table column in both summary tab and other, non-summary tabs.

  The system performs this type of validation when saving a template.

  If two or more form columns point to the same table column, the system generates an error message describing the duplicated references.
- Templates attributes type validation checks whether two form columns from two templates point to same table column but with different type (for example, one has a type of select and the other is multi-select).

  If two or more form attributes with different types point to the same table column, the system generates an error describing the inconsistency.

Data validation rules

The Rules Definitions screen lists data validation rules, and the grids that use them.

From this screen, you can do the following:

- Click **Add Rules Definition** to load a rules definition file; all the rules in the file are displayed on the screen.
- Click **Delete** to delete a rule if it is not associated with any templates.
- Click a rule to update the existing rule or to change the name of the rule.

Note: If you attempt to overwrite an existing rules file, the system generates a warning.

After you load a rule, you can link it to a grid template tab on the Tabs screen of the Templates Configuration screen. For details, see "Template Tabs tab" on page 55.

For more details on data validation, see "Grid validation" on page 159.

To navigate to the Rules Definitions screen

1. Select **Settings > Marketing Operations Settings**.
2. In the Other Options section, click **Template Configuration**.
3. In the Templates Components section, click **Rules**.

About approving the TCS

If the project was created using a template on which the **Approval Required** check box is selected, then every row in the TCS linked to a flowchart must be approved before that flowchart can be executed in production mode in Campaign. If you run the flowchart in production mode and one or more rows on the TCS associated with this flowchart are not approved, Campaign generates an error.

If necessary, you can approve each row on a TCS individually. You can approve rows as soon as they are complete and correct, even if other rows on the TCS are not yet ready to be approved.

If the project was created using a template on which the **Approval Required** check box is not selected, then approval is not required for top-down cells in the TCS. In this case, the TCS grid does not show the **approval** column or **approve all** and **deny all**. Leaving the approval required check box cleared saves time if campaigns do not require TCS approval.

Note: By default, **Approval Required** is cleared. However, after you upgrade to Marketing Operations 8.5, all upgraded campaign templates have **Approval Required** checked.

Import and export

If **Approval Required** is selected, the **is approved** column exports.

If **Approval Required** is cleared, the **is approved** column does not export, and only matching CSV files import.

Chapter 7. Forms

A form is a collection of attribute fields that gather information about an object. When you create a template, you select the forms you want to include. Each form you add becomes a separate tab or a section of the Summary tab in the object instances users create using that template.

You create and manage forms at the Form Definitions list page in the Administrative settings.

About Target Cell Spreadsheets

The Target Cell Spreadsheet (TCS) is an editable grid that specifies the type of information users must enter to define the target and control cells for a campaign. You use Target Cell Spreadsheets when IBM Unica Marketing Operations-Campaign integration is enabled. Each column on the TCS defines a particular item of information. Each column corresponds to an attribute.

A TCS contains default attributes that are automatically passed to Campaign. In addition to these default attributes, you can create and add an unlimited number of custom attributes.

Cell attributes and grid attributes

A TCS can contain attributes that get passed to IBM Unica Campaign (cell attributes) and attributes that display only in IBM Unica Marketing Operations (grid attributes).

Use cell attributes for information you need to pass to Campaign. For example, attribute values you want to include in an output list, contact history, or report must be created as cell attributes.

Use grid attributes for descriptions, calculations, and data that is not needed in Campaign.

Target Cell Spreadsheets and forms

You create a TCS on a form. (The form can contain other attributes in addition to the TCS.) When you place a TCS grid component on a form, it contains the default cell attributes. You cannot delete the default attributes.

Transfer of cell attribute data

The information in the default attributes is passed automatically to Campaign when a user links a flowchart cell to the TCS row. Custom cell attributes are available automatically in Campaign as IBM Unica Campaign Generated Fields in contact processes. For details on Generated Fields, see the *IBM Unica Campaign User Guide*.

Target Cell Spreadsheets and templates

A campaign project template can contain only one TCS.

Default cell attributes

The default cell attributes appear in all Target Cell Spreadsheets. They do not appear in the list of cell attributes on the Shared Attributes page in the Administrative Settings.

Table 7. Default cell attributes

Name	Value required for publishing TCS	Description
Cell Name	Yes	Text field
Cell Code	No	Text field
Description	No	Text field
Is Control Cell	Yes	Drop-down list with Yes and No
Control Cell	No	Drop-down list of control cells
Assigned Offers	No	A selection control you can use to select one or more offers or offer lists
Is Approved	No	Drop-down list with Yes and No. This column appears only if **Approval required** is checked in the corresponding campaign project template.
Flowchart	No	Read-only field that displays the name of the flowchart in which the cell is used
Last Run	No	Read-only field that displays the date and time the flowchart containing this cell was last run
Actual Count	No	Read-only field that shows the last run count for this cell (count of unique audience IDs in the cell)
Run Type	No	Read-only field showing the run type for the last run for the flowchart that contains this cell (production or test; flowchart, branch, or process box)

You can edit only the following properties for a default cell attribute:
- Display name
- Description
- Help text
- Sortable
- Sort type
- Alignment

Form Definitions list page

The **Form Definitions** list page lists every form defined in the system. For each form, the following columns are displayed.

Table 8. Columns on the Form Definitions list page

Column	Description
Name	The display name and the description of the form for use in IBM Unica Marketing Operations.

Table 8. Columns on the Form Definitions list page (continued)

Column	Description
Table	The name of the database table that stores the values that users enter for form attributes.
Used By	A list of templates that use this form.
Actions	This column displays an icon representing one of the following actions for the form: • Publish makes the form available for use in object templates. After a form is published, Disable displays until changes are made. • Disable prevents this form from appearing in the Add Tab list when creating a template. Disabling a form does not change existing templates. After a form is disabled, Enabled displays. • Enable makes the form available in the Add Tabs list when creating a template.
Delete/Revert	Click **Revert** to undo changes made to the form since it was last published. If there are no unpublished changes, this link changes to **Delete**. Click **Delete** to delete the form. This link is only available for forms that are not used in any templates.
Export	Click to export the latest published version of the form.
Copy	Click to create a copy of the form.
Manage	Click to manage the lookup values for the form.

The list page contains the following links.

Table 9. Links on the Form Definitions list page

Link	Description
Create New Form	Click to open the Form Editor so you can create a form.
Import Form	Click to select a form to import into your system.

Creating forms

Before creating a form in IBM Unica Marketing Operations, you should design it on paper or in a spreadsheet.

Be sure to consider which fields should appear on each page, how to group them, what to name them, and where to store them. You are extending not just the Marketing Operations user interface (that is, which fields are presented), but also the out-of-the-box system tables.

IBM Unica Marketing Operations creates the database table and columns to store the data that users enter in the forms, but you must specify the table and column names. The tables are created when you publish the form. If you want users to select values from lookup tables when entering information in the form, you must create the lookup tables manually.

Also consider which attributes you want to use on multiple forms. You should create these as shared attributes before you create the form.

To create a form

1. Click **Settings > Marketing Operations Settings**.
2. Under Other Options, click **Template Configuration**.
3. Under Template Components, click **Forms**.
4. At the Form Definitions screen, click **Create New Form**. The Form Editor interface displays. For more information about working with this interface, see "Form Editor interface" on page 83.
5. Fill out the Form Properties tab and click **Save Changes**.

   The Add an Element tab displays.
6. To use previously defined shared attributes on this form, click **Import Shared Attributes** then select them in the Custom Attributes list.
7. To add a local attribute to this form only, click **Create a New Custom Attribute**.
8. Drag the elements and attributes that you want in the form from the Add an Element tab onto the form design area.
9. Click **Save and Exit** to save the form and return to the Form Definitions page.

To create a TCS

Before you create a TCS, you must create any custom cell attributes that you want to include. Cell attributes map to IBM Unica Campaign and can only be created as shared attributes.

1. Select **Settings** > **Marketing Operations Settings**.
2. Under Other Options, click **Template Configuration**.
3. Under Template Components, click **Forms**.
4. At the Form Definitions screen, click **Create New Form**.
5. Fill out the Form Properties tab and click **Save Changes**. The Add an Element tab displays.
6. Click **Create New Grid**.
7. In the **Attribute Type** field, select **Editable Grid** from the drop-down list.
8. Select the **Is TCS** check box.
9. Complete the remaining options and click **Save and Exit**.

   The grid component for the TCS displays in the Form Attributes list in the Custom Attributes list box.
10. Select the grid component for the TCS and drag it onto the group header on the form.

    The default cell attributes display on the grid.
11. Add any attributes you want to the TCS. You can do either of the following.
    - Import custom cell attributes and add them to the TCS to create additional columns that get passed to IBM Unica Campaign.
    - Create or import grid attributes and add them to the TCS to create additional columns that display only in IBM Unica Marketing Operations.
12. Click **Save and Exit** to save the TCS and return to the Form Definitions list page.

To import shared attributes

You can import only attributes that have been enabled.

1. Open the form in which you want to use the shared attributes.
2. On the Add an Element tab, click **Import Shared Attributes**.

   The Shared Attributes dialog box displays.
3. In the list on the left, select the attributes you want to import and click the right-facing arrows to move them into the **Selected Attributes** list.
4. Click **Import and Close**.

To create an attribute group

You can place a group element directly on a form or on a grid component on a form to identify a related set of attributes.

1. Open the form in which you want the attribute group.
2. Click the **Add an Element** tab.
3. Click the **Attribute Group Header** in the **General Elements** list and drag it onto the form design area.

   A red cursor indicates the placement of the group header on the form.
4. Click the group header to display a pop-up with the current settings for the group name.
5. Click **Edit Attribute Group** to open a dialog where you can change the display name and specify other options.
6. When you are finished editing the group, click **Save and Exit** to close the window and return to the form.

Form Editor interface

The Form Editor displays when you create or edit a form. For more information, see “To create a form” on page 82.

The Form Editor consists of a form design area on the left and a set of tabs on the right. The form design area displays the current contents of the form. You supply information for the form and its attributes using the tabs on the right: you can add elements to the form by clicking and dragging.

There are two tabs on the right. The Form Properties tab contains the following fields.

Table 10. Form Editor interface: the Form Properties tab

Field	Description
Form Name	The name of the form for use in IBM Unica Marketing Operations.
Database Table	The name of the database table that stores the answers user enter in the form fields. **Note:** You cannot use the same database table for both a form and a grid within that form.
Form Description	A description of the form. This text appears below the form name on the Form Descriptions page.

The Add an Element tab contains two list boxes:

- The General Elements list box contains form elements, such a group header to identify a related set of attributes.
- The Custom Attributes list box contains a list of the different attributes available for use on the form.

The tab also contains the following links.

Table 11. Form Editor interface: links on the Add an Element tab

Link	Description
Create a New Custom Attribute	Click to display the Create a New Custom Attribute dialog box where you can create a local attribute.
Create New Grid	Click to display the Create a Grid dialog box where you can create an editable or read-only grid.
Delete Selected Attribute	Click to delete the attribute selected in the Custom Attributes list box.
Import Shared Attributes	Click to display a dialog box where you can select previously defined and enabled shared attributes to import for use in this form.

After you create local attributes or import shared attributes, you can add them to the form. To add an element or an attribute to the form, you click it and then drag it into the form design area, directly below a group header.

After you add an element or attribute to the form, you click it to view or edit its settings. When you click a form element or attribute, a popup opens with the current values, covering the tabs on the right. The popup contains an Edit link so that you can specify how the selected group header or attribute is implemented on this form. For more information, see "Edit Attribute Group screen" or "Attributes reference" on page 103.

Edit Attribute Group screen

Field	Description
Group Internal Name	The unique name of the group, used internally. Do not use spaces or special characters.
Group Display Name	The group header, used in the form. Spaces are allowed, as well as UTF-8 characters.
Description	A description of the group.
Show Group Heading	Select to display the group display name in the form. Clear to hide the group display name in the form.
Group Layout	How attributes display in the group. Select One Column or Two Columns.

Creating grids

Grids are spreadsheet-like presentations of data. Grids are either editable or read-only. An editable grid is for users to enter information, while a read-only grid displays information entered previously.

Grids have two parts:

- The grid component that defines the database table in which to store the answers or from which to read the data

- Multiple grid attributes that define each column in the table

You determine whether a grid is editable or read-only when you create the grid component. If you want the grid to be editable in one form and read-only in another, you need to create two grid components that contain the same attributes.

You can group attributes within a grid by using an Attribute Group Header on the grid. A grid can contain a mix of grouped and ungrouped attributes.

To create an editable grid

1. Open the form in which you want the grid.
2. Click the **Add an Element** tab and click **Create Grid**.
3. From the **Attribute Type** drop-down list, select **Editable Grid View**.
4. Enter the information for the table and click **Save and Exit**.

   The grid component displays in the **Form Attributes** list in the **Custom Attributes** list box on the **Add an Element** tab.
5. If the form does not already contain the group that you want to contain the table, drag the **Attribute Group Header** from the **General Elements** list box onto the form design area.
6. Drag the grid component for the grid from the **General Elements** list box onto the group.
7. Drag the grid attributes that you want in the grid from the **Custom Attributes** list box onto the grid component name.

   You can change the order of the attributes by clicking an attribute to display the move icon and dragging the move icon to the desired location.

   If you want some of the grid attributes to be grouped, drag the **Attribute Group Header** onto the grid and then drag the grid attributes onto the group header.
8. Click **Save and Exit** to save the form and return to the Form Description list page.

Create a Grid window

Table 12. Fields in the Create a Grid window

Field	Description
Attribute Type	The type of grid you want to create. • Select Editable Grid View to create an editable grid. • Select Line Truncate View to create a read-only grid in which text that is too long to fit in a cell is truncated. • Select Line Wrap View to create a read-only grid in which text that is too long to fit in a cell is continued on a second line within that cell. • Select Two Line Staggered View to create a read-only grid in which text that is too long to fit in a cell is continued on a second line within that cell that is indented.
Is TCS	Leave the check box clear unless you are creating a Target Cell Spreadsheet for use in campaign projects. (This option is only available for editable grids.)
Attribute Internal Name	The name to use when creating files for the grid.
Attribute Display Name	The name for this grid that appears on the form.

Table 12. Fields in the Create a Grid window (continued)

Field	Description
Database Table	The database table that contains the data users enter in the grid (for editable grids) or the database table that contains the data that displays in the grid (for read-only grids). **Note:** The grid database table must not be the same as the form database table.
Table Key Column	For an editable grid, the name of the column to contain the parent ID (the ID of the project or marketing object that holds the grid). If multiple editable grids (including Target Cell Spreadsheets) use the same database table, they must use the same table key column. • For a read-only version of an existing editable grid, use uap_grid_row_id. • For a read-only grid not related to an existing editable grid, the name of a column that uniquely identifies rows in the table that contains the data you want to display. **Note:** You should not change the table key column after you create the grid.
Key Column Type	The data type of the table key column.
Number of rows in one page	The number of rows to display in one page of the form. This value must not be greater than 100.
Data Post URL	The URL of the server to which the data the user selects is sent. (This option is not available for editable grids.)
Filter By Parent ID	Select this check box to filter the read-only grid to show only entries from the current project or marketing object. (This option is not available for editable grids.)
Parent ID Column Name	The value of the Table Key Column for the grid component for the editable grid whose data you want to display as a read-only grid. (This option displays only if the Filter by Parent ID check box is selected.)
Show Export Link	Select this box to enable users to export the grid data or data selections.
Show View Link	Select this check box to enable users to set their viewing options for the grid. (This option is not available for editable grids.)
Show Group By Link	Select this check box to enable users to specify a column by which to group the grid rows. (This option is not available for editable grids.)

Displaying an existing editable grid as a read-only grid

You can display an editable grid as a read-only grid.

The grid component for the read-only grid must have the following properties:

- The attribute type must be Line Truncate View, Line Wrap View, or Two Line Staggered View.
- The database table must be the same as the database table for the grid component for the editable grid.
- The table key column must be uap_grid_row_id.

  Note: IBM Unica Marketing Operations automatically creates this column for all editable grids.
- If you want the read-only grid to display only the values users enter in the grid for this object (for example, this project), select the Filter by Parent ID check box

and enter the editable grid component's Table Key Column value in the read-only grid component's Parent ID Column Name field.

Otherwise, the read-only grid displays all values entered using this grid in all objects.

Note: The form that contains the editable grid must be published before you create the read-only grid. Otherwise, you cannot save the form that contains the read-only grid. If you want the editable grid and the read-only grid to be on the same form, you must create the editable grid, publish the form, and then create the read-only grid.

The attributes that the read-only grid contains must be exact matches of attributes that the editable grid contains. You can accomplish this requirement in one of three ways.

- Copy the form that contains the editable grid. You must delete the grid component for the editable grid, create a component for the read-only grid, and drag the grid attributes onto the new component, but you do not need to recreate the grid attributes.
- Use shared attributes when you create the editable grid so that the attributes can be imported into the Form Editor when you create the read-only grid.
- Recreate the attributes in the Form Editor when you create the read-only grid. The attribute properties must match the original attributes exactly.

Note: The one exception is that read-only grids cannot contain single-select or multi-select object references. If the editable grid contains attributes of these types, you must replace them with single list object reference attributes.

Displaying a grid as a list

You can reference a grid, and display it on another tab as a list. However, to do this correctly, you need to know how Marketing Operations stores grids.

- A list view is read-only and displays all the rows in the specified database table.
- A grid view is read/write, and the rows in the grid "belong" to the parent of the grid, that is the project or marketing object that holds the grid.

So, for example, if you have two projects created from the same template, the rows added by the corresponding grids in both projects are added to the same database table, but the grid for each project only has access to its own data.

To achieve this, a database table that holds grid data needs to have two columns: one to uniquely identify a row, and one to identify the parent ID: the ID of the project or marketing object that contains the grid.

The key column you set for a grid table (when you add a TVC Component to hold the data for the grid) holds the parent ID for the row. All rows in a single grid have the same value for this column. Thus, it cannot uniquely identify a row of data.

The Forms Editor auto generates a column, uap_grid_row_id, for each grid. A list view just requires a column that uniquely identifies rows. Hence, when you would like to use the same table as grid in a list view, you must specify uap_grid_row_id as the key column, not the key column you specified when you specified the grid data table.

To illustrate, look at this example:

- Assume that the Tradeshow template contains a tab, Staff. The Staff tab contains a grid.
- Assume that two tradeshow projects have been created, TRS001 and TRS002.
- Assume that users have entered data into the Staff grid for both TRS001 and TRS002.
- Assume that TRS001 and TRS002 have object IDs of 121 and 122 respectively.

The database table that holds the data for these two grids might look like the following:

Data in Table 'dyn_staffdetails' in 'SJMPlan73' on 'FORTUNA'

object_id	uap_grid_row_id	manager	emp_id	emp_name	salary
121	118	Y	1001	Mary Manager	45000
121	119	N	1002	Art Artiste	25000
121	120	N	1003	Larry Lawyer	200000
121	121	N	1004	Carl Contributor	25000
121	122	Y	1005	Charlie CEO	1000000
122	123	N	5000	Huey Lewis	25000
122	124	Y	5001	Isaac Bashevis Sing	75000
122	125	N	5002	Carl Sagan	100000
122	126	Y	5003	Emiliani Torrini	300000

The first several rows belong to the grid on TRS001. The final few rows belong to the grid on TRS002.

Each project displays only its own portion of the data in this table. However, if there is a list that uses this table for reference, it displays all the rows in the table, as shown here:

TVCListStaff:

View | Export Data

Employee ID	Name	Base Pay	Manager ?
1001	Mary Manager	$45,000.00	Yes
1002	Art Artiste	$25,000.00	No
1003	Larry Lawyer	$200,000.00	No
1004	Carl Contributor	$25,000.00	No
1005	Charlie CEO	$1,000,000.00	Yes
5000	Huey Lewis	$25,000.00	No
5001	Isaac Bashevis Singer	$75,000.00	Yes
5002	Carl Sagan	$100,000.00	No
5003	Emiliani Torrini	$300,000.00	Yes

Since the column name uap_grid_row_id is reserved, you must not use this as a column name when creating a grid's columns.

You can filter a list so that it displays only the grid entries from its own object (project or marketing object). Continuing the previous example, create a project that has two tabs:

- **Staff Form**: contains a grid that you use to enter and edit members of the staff.
- **Staff List**: displays the entries from the Staff Form grid as a list.

To ensure that only the entries from the current project are displayed on the list, filter on the parent ID of the list.

When you create the TVC Component for the list, set the following values:
- **Filter By Parent ID**: selected
- **Parent ID Column Name**: object_id (as shown in the database table shown earlier for this example). This value must match the value in the **Table Key Column** for the grid TVC Component.

Creating lists of marketing objects

This example describes how to display a list of marketing object references.

Scenario

You have a project that has four subordinate marketing objects associated with it:
- Two Brochures
- One Mailer
- One Resource bundle

After you create the project, you periodically check to see which participating marketing objects have already been created.

This example describes the steps necessary to create this scenario in Plan.

Assumptions

The following items exist in Plan:
- A project template named **Event planning**
- Marketing object templates for Brochures, Mailers, and Resource bundles.

Tasks

To implement this scenario, perform the following tasks.
1. Using the Forms Editor, create a specification file to hold the following forms:
   - Create a form to hold a custom text attribute, **Originating Project**.

     After you create a participating marketing object, you enter the value of the project code for the originating project in this field.
   - Create a custom tab, **Participating Marketing Objects**.

     For the custom tab, you add a single object reference attribute to a form. To configure this attribute, you must first create a custom view.

   "Creating the custom tab and attribute" describes the details for creating these forms.
2. Create a custom view as described in "Creating the custom view".
3. Load the forms into Plan, and add the forms to the appropriate templates:
4. Create the objects:
   - a project from the Event planning project template, **EventStuff001**.

- a brochure, **Brochure001**, and set its originating project to the project code for **EventStuff001**.
- a mailer, **Mailer001**, and set its originating project to the project code for **EventStuff001**.

When you open the **Participating Marketing Objects** tab for **EventStuff001**, you see the details for the associated marketing objects:

Creating the custom tab and attribute

We need a tab that can hold the list. We add this tab to a project template in Plan. We also need to define the custom form to hold the project code. The custom view depends on both these forms using the same database table, so we create them both in this section.

1. In the Forms Editor, create a specifications file to hold two forms, both using the same database table.
2. Create the specifications database table as follows:
3. Create the two forms:
4. For the list TVC component, specify the following:
5. Create a TVC attribute of type Single List Object Reference. In the Object Reference Properties section, specify the following:
6. Create a form attribute of type TVC Component and set the TVC Component to the TVC attribute set in step 3.
7. Create a form attribute to hold the project code as a text attribute. For this attribute, specify the following:
8. Export the forms and save and close the specifications file.
9. Run the SQL script to create the dyn_mo_table and its columns.

Creating the custom view

Typically, you need to create a custom view before you can add an object reference to a list view. In this example, we reference a marketing object on a project, where the marketing object contains a text field that holds a project code.

This example uses three tables to create the view: uap_projects, uap_mktgobject, and the custom table dyn_mo_table. The view is named proj_mos_by_proj_code.

Prerequisite custom table

Before creating the view, ensure you have created the custom table, dyn_mo_table, and that it contains the following columns:

- po_id: key column, specified in the DB Tables tab for the form
- PID: text column created in the Forms Attribute tab to hold the project code as text.

Custom view details

The view contains the following columns:

- proj_code and project_id from uap_projects
- name, comp_type_name, and mktg_object_id from uap_mktgobject

The actual SQL code to create the view follows:

```
create view proj_mos_by_proj_code (
   asscProj, MOName, ProjID, mo_id, comp_type_name) As
   select PROJ.name as asscProj, MO.name as MOName,
   PROJ.project_id as ProjID, MO.mktg_object_id as mo_id,
   MO.comp_type_name as comp_type_name
   from uap_projects PROJ, dyn_mo_table MOT, uap_mktgobject MO
   where PROJ.proj_code = MOT.PID and MOT.po_id = MO.mktg_object_id
```

The following table shows the column names and some sample rows from this database view:

asscProj	MOName	ProjID	mo_id	comp_type_name
BRAIN-001	RB-005	101	147	creatives
BRAIN-001	RB-006	101	148	creatives
Event Horizon	CampaignMAIL01	149	145	creatives
Event Horizon	CampaignBRO01	149	142	creatives
Event Horizon	CampaignRB01	149	143	creatives
Event Horizon	CampaignRB02	149	144	creatives

Exporting forms

You can only export forms that have been published. Any changes made to the form since it was last published are not included in the exported form. To export a form, you must know the database application used by the installation in which the form will be imported. You specify the database application when you export the form.

When you export a form, IBM Unica Marketing Operations creates a form archive zip file that includes the following.

- a map file of the form in XML format
- a create script for the database application you specify
- a drop script for the database application you specify
- a properties file for each locale for which a translation exists
- a create script, drop script, and insert script for every lookup table used by a single-select database attribute or multiple-select database attribute on the form

To export a form

To export a form, you must know the database application used by the system that will import the form.

1. Click **Settings > Marketing Operations Settings**.
2. Click **Template Configuration**.
3. Click **Forms**.
4. Click the **Export** link for the form you want to export.
5. Select the database application used by the Marketing Operations installation that will import this form.
6. Click **Export**.

Importing forms

Only IBM Unica Marketing Operations administrators can import a form.

You can import a form in one of two ways.
- By importing a form archive (zip) file
- By importing a form (xml) file

Importing a form archive (zip) file imports the form, any localized versions of the form, and the database scripts needed for any lookup tables referenced by attributes on the form.

Importing a form (xml) file imports only the form. The form uses the language of the locale in which it was created. If the form attributes use lookup tables, you must create or edit the lookup tables manually.

You can import a new version of a form that already exists in the system. If the existing form is unpublished, the new version replaces the old. If the existing form is published, the newly imported version is listed below the old version in the Form Definitions list page and the Publish icon is made available. You must republish the form to replace the published version with the new version.

To import a form

1. Click **Settings > Marketing Operations Settings**.
2. Click **Template Configuration**.
3. Click **Forms**.
4. Click **Import Form**.

   The Upload Form dialog box displays.
5. If you are importing a form file, enter a name for the form.

   Use only alphanumeric characters, the space character, and the underscore character in the form name.

   If you are importing a form archive, Marketing Operations takes the form name from the archive.
6. Select one of the following:
   a. Select **Form Archive** to import a form archive zip file.
   b. Select **Form File** to import only the form xml file.
7. Browse to the zip or xml file you want to import.
8. Click **Continue**.

   If you are importing a form archive file and the form contains attributes that reference lookup tables, Marketing Operations asks if you want to drop or create/update the lookup tables.
9. Select the options you want and click **Continue**.

Troubleshooting when importing forms

This section describes how to correct some common errors you may receive when you attempt to import a form into the Forms Editor.

Error	Solution
Duplicate form name	The form name is the same as one that already exists in the system. Rename the form file, or open a new form and reimport the form file.

Error	Solution
Cannot use names	Some <element> tags have the same name. Rename any duplicate names in <element> tags or open a new form and reimport the form file.

Publishing forms

A form is only available to be added to a template if the form has been published. A form must be published again each time it is edited.

To publish a form

1. Click **Settings > Marketing Operations Settings**.
2. Click **Template Configuration**.
3. Click **Forms**.
4. Click the **Publish** link for the form you want to publish.

   If the Publish link is not available, the form has not been changed since it was last published.

Moving forms from one computer to another

You can move a form from one computer to another by exporting the form from one computer and importing it into another installation of IBM Unica Marketing Operations. For example, you can move a form from a development installation to a test installation to a production installation.

Managing lookup values for a form

Single- and multi-select attributes present lists of values to users, who then select one or more values from the list. You manage attribute lookup values as follows:

- Work directly with your database administrators to add or remove values in the lookup table associated with the attribute
- Disable lookup values from the Form Definitions screen, as described here. Disabling values from the Form Definitions screen enables you to disable a value without removing it from the database. If the same lookup table is referenced on more than one form, disabling values from the Form Definitions screen also enables you to disable a value for one form and enable it for another.

Notes on disabled lookup values

Note the following system behavior for disabled lookup values:

- The status (enabled or disabled) for lookup values is kept in the `uap_lkup_manager` system table.
- You can disable a value that is selected on existing objects. When users revisit such an object, they see **disabled** next to the value.
- Disabled values are included in the results from an advanced search if they meet the search criteria. Disabled values are indicated by the text **disabled** next to the value.
- If you edit a single or multi-select attribute, the status for all values of that attribute is reset to enabled.
- If a value is set as the default for a form, and is later disabled, the behavior is as follows:

– The disabled value is still used for existing objects.
– If a user revisits an existing object, and changes any answers on that form, the user must choose a different value for the field that contains the disabled value.

To disable lookup values without changing the database table

1. Click **Settings > Marketing Operations Settings**.
2. In the **Administrative Settings** screen, click **Template Configuration** (located under **Other Options**).
3. Click **Forms**.

   The **Forms Definitions** list page appears.
4. Click **Manage** for the form that contains the lookup values you want to edit.

   The **Manage Lookup Values** dialog box appears.
5. Clear the **Enabled** check box for any value that you want to disable.

   Clicking the checkbox toggles the setting: values that contain a check are enabled, and values that are not checked are disabled.
6. After you make your changes, click **Save Changes**.

Copying forms

You can copy any published form that is currently enabled. IBM Unica Marketing Operations copies the last published version of the form.

The name of the copy is Copy of <form_name>. If Copy of <form_name> exceeds 50 characters, Marketing Operations displays an error message and you must specify a new name for the copy.

The database table name of the copy is copy_of_<original_table_name>. If this table name already exists in the database, you must change it before you can save the form. Any localized properties files that exist for the original form are copied for the new form.

You copy a form by clicking the Copy icon in the row for the form on the Form Definitions screen.

Localizing forms

If your organization supports multiple languages, you can make forms available in multiple languages to enable users to work with forms in their own languages. You localize a form by exporting it and then creating a properties file for each locale that you want to support.

When you export a form, IBM Unica Marketing Operations creates a form archive zip file that contains a form properties file for the form for your locale. You can create a copy of the properties file for each locale your organization supports and translate the group names, field names, descriptions, and help tips into the appropriate language for each locale. If the form uses lookup tables and the database contains localized versions of the lookup tables, you can edit the properties file for a locale to reference the correct lookup table for that locale.

Properties file names

Properties file names must be in the following form:

`<form_name>_<locale>.properties`

where *<form_name>* is the name of the form, and *<locale>* is a locale code. The following locale codes are recognized.

Code	Language
de_DE	German
en_GB	English (Great Britain)
en_US	English (United States)
es_ES	Spanish
fr_FR	French
it_IT	Italian
ja_JP	Japanese
ko_KR	Korean
pt_BR	Portuguese
zh_CN	Chinese

Example properties file

```
columngroup.group1.header=group1
columngroup.group1.description=first group
columngroup.offer.header=offer
columngroup.offer.description=second group
columngroup.offer2.header=offer
columngroup.offer2.description=third group
column.business_unit_id.label=Business Unit
column.business_unit_id.message= Business Unit is a mandatory field
column.business_unit_id.helptip= Business Unit is used for
column.init_type_id.label= Initiative Type
column.init_type_id.message= Initiative Type is a mandatory field
column.offer_codes.label=Offer Code(s)
column.effective_date.label=Effective Date
column.drop_date.label=Drop Date
column.business_unit_id.lookuptable=lkup_business_unit
tvccolumngroup.group1.header=group1
tvccolumngroup.group1.description=group1 description
tvccolumngroup.group1.helptip=group1 helptip
tvccolumn.tvc_not_used_ref_1.label=Single Marketing Object
```

Localizing forms by editing

You can also localize a form for a locale by having a user with that locale as his or her default locale open the form and manually edit the names and descriptions. When the user saves the form Marketing Operations saves the translations entered by the user and they display for other users with that default locale. However, this process is more time consuming and is generally recommended only when the number of forms and the number of supported locales are small.

How IBM Unica Marketing Operations determines the properties file to use

When a user displays a form, Marketing Operations uses the properties file for the first locale in this list for which a properties file exists.

1. user's locale
2. default locale for the system
3. locale in which the form was created

To localize a form

If the form uses lookup tables and you want to provide localized versions of those lookup tables, create the localized tables before you localize the form. You need the name of the localized table.

You can only export forms that have been published.

1. Export the form.
2. Extract the properties file from the form archive zip file.
3. Create a copy of the properties file for each locale your organization supports.
4. Open each properties file in a text editor and translate the display text into the appropriate language for that file. If the form uses lookup tables and there are localized versions of the lookup tables, replace the lookup table names with the names of the corresponding tables for the locale for that file.
5. Add the new properties files to the form archive zip file.
6. Import the form into Marketing Operations.

   The new version of the form appears indented below the published version you exported. The Publish icon is available.
7. Publish the form to replace the previously published version with the version you imported.

   The localized text from the properties files is uploaded to the database and is available to all users.

Enabling data posting of list selections

When you create a read-only list, you can enable users to send their data selections to a specified server by clicking a link in the form. When users click the Post Data link, the selected rows display in a new popup window.

Data posting is done using name-value pairs, as per the HTML POST method. Name is the column name, and value is the value of the column in the selected row. If the user selects multiple rows, value pairs are comma-separated.

For example, assume that a list has two columns, ID and Name, and the data post URL is set to `http://serverRPT/testServlet`. Assume that the list has the following values:

Table 13. Example list values

ID	Name
1	name1
2	name2
3	name3

If a user selects the first and third rows, and then posts the data, the system generates the following HTML form into a new window:

```
<form name="lvcPost" method="POST"
     action="http://serverRPT/testServlet">
     <input type="hidden" name="ID" value="1,3">
     <input type="hidden" name="NAME" value="name1,name3">
</form>
```

If a posted column contains multiple, comma-separated values, these values are enclosed in double quotation marks (“”) when posted. The quotation marks identify these values as belonging to a single column, as the posting method normally comma-separates the values for each column.

Adding a form to existing objects

When you add a new form to an existing object template, the new form does not display in objects previously created from the template. You can manually edit the database table for the form to make the new form display in all objects of a specified type (for example, all projects).

To have the new form appear in existing objects, you must insert all the object IDs for that object type into the database table for the new form using the following SQL statement:

```
INSERT INTO table_name (object_id) SELECT object_id
  FROM object_system_table
```

where

- *table_name* is the name of the table for the form
- *object_id* is the object identifier column for the object type
- *object_system_table* is the name of the system table for the object

This table specifies the ID column and system table name for each object type:

Object	ID column	System table
project	project_id	uap_projects
program	program_id	uap_programs
plan	plan_id	uap_plans
invoice	invoice_id	uap_invoices
marketing objects	mktg_object_id	uap_mktgobject

For example, if you added a form with a table named **dyn_x** to a project template, run the following SQL statement to add the form to all existing projects:

```
INSERT INTO dyn_x (project_id) SELECT project_id FROM uap_projects
```

Attribute groups

Every attribute or table on a form must be in a group. Groups enable you to logically organize fields for end users. You can also use groups to create a form with both 1-column and 2-column areas.

You can display a header for a group, but headers are not required.

Chapter 8. Using Form Attributes

An attribute defines a piece of information you want to gather from a user. You create attributes and place them on forms, which are then added to templates. When users use the templates to create objects, each attribute corresponds to a field on one of the object's tabs.

Local and shared attributes

Attributes can be either local or shared, depending on where they are created. Local attributes are created on a form and can only be used on that form. Shared attributes are created from the Shared Attributes screen and can be imported into and used on any form. You can customize some properties of the shared attribute on a form-by-form basis.

Attribute categories

Attributes are grouped into broad categories based on how they can be used. The four attribute categories are the following.

- Form: attributes placed directly on forms
- Grid: attributes for grids
- Campaign: attributes that map to IBM Unica Campaign when Marketing Operations-Campaign integration is enabled
- Cell: attributes map to IBM Unica Campaign for use in Target Cell Spreadsheets when Marketing Operations-Campaign integration is enabled

Campaign and cell attributes are for use in campaign project templates. Campaign and cell attributes are available only as shared attributes.

Marking attributes as required

For all attribute types, the attribute creation screen contains a Required radio button. If you select this radio button in the Forms Editor, the attribute appears in the finished form with a red, double asterisk (**) next to it. A user must enter a value for that attribute, or the system generates an error.

Campaign attributes

Campaign attributes are IBM Unica Marketing Operations attributes that correspond to IBM Unica Campaign attributes when Marketing Operations-Campaign integration is enabled. Marketing Operations includes a set of default campaign attributes that correspond with standard attributes in Campaign.

You can also create custom campaign attributes in Marketing Operations when Marketing Operations and Campaign are integrated. When users create the linked campaign for a campaign project from a template that includes custom campaign attributes, the corresponding attributes are created in Campaign. If users change the data they enter in a field created by a campaign attribute after they create the linked campaign, they must update the campaign in order to send the new information to Campaign. You should use campaign attribute descriptions and form descriptions to inform users which fields require them to update the campaign.

Campaign attributes are shared attributes. You create them from the Administrative Settings in Marketing Operations.

Cell attributes

Cell attributes are IBM Unica Marketing Operations attributes that map to IBM Unica Campaign for use in Target Cell Spreadsheets. Marketing Operations includes a set of default cell attributes that are included in every TCS.

You can also create custom cell attributes in Marketing Operations. When users create the linked campaign for a campaign project from a template that includes custom cell attributes, the corresponding cell attributes are created automatically in Campaign.

Cell attributes are shared attributes. You create them from the Administrative Settings in Marketing Operations.

Attribute types not available for campaign and cell attributes

Only attribute types that exist in both IBM Unica Marketing Operations and IBM Unica Campaign are available for campaign and cell attributes. The following Marketing Operations attribute types are not available.

- Multi-select–Database
- User select
- External database
- URL field
- Single-select object reference
- Object attribute field references
- Multi-select object reference
- Graphical reference

In addition, the single-select and single-select–database types are available for campaign attributes but not cell attributes.

Note: For single-select–database attributes, IBM Unica Marketing Operations passes the lookup value (not the display value) of the selection to IBM Unica Campaign. You determine the lookup value and the display value when you create the lookup table.

There is no attribute type that corresponds to the "Modifiable drop-down list" that is available for custom attributes in stand-alone IBM Unica Campaign.

About creating, enabling, editing, and deleting attributes

You create, edit, and delete local attributes in an open form. You create, edit, and delete shared attributes from the Shared Attributes page in the administrative settings.

Local attributes are automatically enabled when you create them. You must manually enable shared attributes before you can use them on a form. Once a shared attribute is enabled, you cannot edit or delete it.

To create a shared attribute

1. Select **Settings** > **Marketing Operations Settings**.
2. Click **Template Configuration**.
3. Click **Shared Attributes**.

   The screen contains one section for each category of shared attribute.
4. Click the **Create Attribute** link for the attribute category for the attribute you want to create.

   The Create a New Shared Attribute window displays.
5. Define the attribute.
6. Click **Save and Exit** to create the attribute and return to the Shared Attributes screen or click **Save and Create Another** to create the attribute and display the attribute screen for a new attribute.

   You can create another attribute of the same or a different category.
7. On the Shared Attributes screen, click **Enable** in the row for each new attribute to make it available for use on a form.

To create a local attribute

1. Open the form for which you want to create the attribute.
2. Click **Create a New Custom Attribute**.
3. Specify the information for the attribute.
4. Click **Save and Exit** to create the attribute and return to the form or click **Save and Create Another** to create the attribute and display the attribute screen for a new attribute.

When you return to the form, the new attribute displays in the Custom Attributes list so that you can drag it onto the form.

To edit a shared attribute

You can edit a shared attribute only if it is not enabled.

1. Click **Settings > Marketing Operations Settings**.
2. Click **Template Configuration**.
3. Click **Shared Attributes**.
4. Click the attribute name of the attribute you want to edit.
5. Make the changes you want and then click **Save and Exit**.

To edit a local attribute

You can edit only attributes that are used on the form. You cannot edit an attribute from the attribute list on the Add an Element tab.

1. Open the form for which you want to create the attribute.
2. Click the attribute on the form.

   A pop-up dialog box displays.
3. Click **Edit Custom Attribute** in the pop-up dialog box.
4. Make the changes you want and then click **Save and Exit**.

To delete a shared attribute

You can delete a shared attribute only if it is not enabled. Once it is enabled, it cannot be deleted.

1. Click **Settings > Marketing Operations Settings**.
2. Click **Template Configuration**.
3. Click **Shared Attributes**.
4. In the row for the attribute you want to delete, click **Delete**.

To delete a local attribute

You cannot delete an attribute that is on the form. You must first remove the attribute from the form.

1. Open the form for which you created the attribute you want to delete.
2. Select the attribute in the **Custom Attributes** list of the Add an Element tab.
3. Click **Delete the selected attribute**. A confirmation window displays.
4. Click **OK**.

Shared Attributes list page

The Shared Attributes list page lists every shared attribute defined in the system. The attributes are organized by attribute category: form, grid, campaign, cell, and offer.

For each attribute, the following columns are displayed.

Table 14. Information about the Shared Attributes page

Column	Description
Display Name	The display name of the attribute. This name displays on forms.
Type	The attribute type.
Used By	A list of the forms that use this attribute.
Enable/Delete	Click **Enable** to make an attribute available for use on forms. Once you enable the attribute, **Enable/Delete** is replaced by **Enabled**. Click **Delete** to permanently delete an attribute that is not yet enabled.

The list page contains the following links.

Table 15. Links on the Shared Attributes page

Column	Description
Create a Form Attribute	Click to create an attribute to use on a form.
Create a Grid Attribute	Click to create an attribute to use on a grid.
Create a Campaign Attribute	Click to create an attribute that maps to IBM Unica Campaign.
Create a Cell Attribute	Click to create an attribute that maps to IBM Unica Campaign to use on a Target Cell Spreadsheet.

Table 15. Links on the Shared Attributes page (continued)

Column	Description
Create a Offer Attribute	Click to create an attribute that maps to IBM Unica Campaign, if optional offer integration is enabled.

Attributes reference

The screen you see when you create an attribute is dependent upon the type and category of the attribute you are creating. However, many of the fields are the same across all attribute types and categories.

Standard attribute fields

This table describes the standard information that you enter for almost all attribute types. Many attribute types do require additional information to that described in this section. For more information about the attribute types, see "Attribute types" on page 105.

Table 16. Basic Options

Field	Description
Attribute Category	The category of attribute. Supplied based on the link you clicked on the Shared Attributes page. See Chapter 8, "Using Form Attributes," on page 99.
Attribute Type	The type of attribute. The attribute type controls the type of data the attribute holds and how it is entered into the database. (Available types vary depending on the attribute category you selected.) See "Attribute types" on page 105. **Note:** You cannot change the attribute type once the attribute is created. If you select the wrong type, you must delete the attribute and create a new one.
Attribute Internal Name	The unique name of the attribute, used internally. Do not use spaces or special characters.
Attribute Display Name	The display name of the attribute, used in the form. Spaces are allowed, as well as UTF-8 characters.
Attribute Database Column Name	Name of the database column where values for the attribute are stored. By default this is the same as the Attribute Internal Name. Do not exceed the character limit for your database and avoid using the words that are reserved for your database.
Edit database column name	Select to edit the Attribute Database Column Name value.
Description	A description of the attribute.
Help Text	A short message that appears as a help tooltip, next to the field, to guide the user in entering the information correctly.

This table describes the additional information you need to define for most grid attributes:

Table 17. Grid Attribute Options

Field	Description
Sortable	Select this option to enable users to sort on this column in the table.

Table 17. Grid Attribute Options (continued)

Field	Description
Sort Type	The direction in which to sort values in this column. Select Ascending to sort in ascending order or Descending to sort in descending order.
Alignment	Alignment of the attribute in the table. You can select Left, Center, or Right. The default is Left.
Summary function	Available only when the Attribute Type is Decimal, Integer, Money, or Calculated. Performs a simple calculation on the column and displays it in a summary row at the bottom of the grid. Options are Sum, Average, Min, or Max. If no columns in the grid have a summary function, the summary row is not present.

This table describes the standard display information you enter for all attributes.

Table 18. Display Options

Field	Description
Form Element Type	The type of field displayed for this attribute on the form. Available types depend on the attribute type.
Special behavior	Select Required to prevent users from saving the form without supplying a value for this field. Select Read-only to display the attribute, but not allow users to supply a value. Defaults to None. This field is not available for Image or Calculated attribute types.

Database considerations for attribute database columns

Be careful when setting the **Attribute Database Column Name** value for an attribute. Your database has a set of reserved words, and using any of them for attribute names can cause errors when IBM Unica Marketing Operations writes to the database.

Each database management system has a different set of reserved words. It is not feasible to list them all here, as they can change. The following is a short list to illustrate the issue; for an exhaustive list, refer to your database documentation.

DBMS	Some reserved words
MS SQL	Boolean, Browse, File, Group, Plan, Primary
Oracle	Cluster, Group, Immediate, Session, User
DB2	Blob, Column, Group, Rollback, Values

If you are using an Oracle database, there is a 30-character limit for the **Attribute Database Column Name** value. For all other databases, the limit is 32 characters.

If you are integrating IBM Unica Marketing Operations and IBM Unica Campaign, avoid CLOB fields, as Campaign does not support them.

If you are using a Microsoft SQL Server database, note that the Identity option for the primary key field is not supported.

Attribute types

The following attribute types are available. A description of the user interaction that results when an attribute of each type is implemented follows.

- **Text - Single-Line**: user enters a single line of text. See "Text attributes" on page 106.
- **Text - Multi-Line**: user enters a multiple-line text response. See "Text attributes" on page 106.
- **Single-Select**: user selects a single item from a hard-coded list. (Not available for cell attributes.) See "Single-Select attributes" on page 106.
- **Single-Select - Database**: user selects a single item from a database lookup table. (Not available for cell attributes.) See "Single-Select - Database attributes" on page 107.
- **Multiple-Select - Database**: user selects one or more items from a database lookup table. (Only available for form and grid attributes.) See "Multiple-Select - Database attributes" on page 108.
- **Yes or No**: user chooses between two options (such as True/False). See "Yes or No attributes" on page 109.
- **Date Select**: user enters a date or selects a date from a calendar.
- **Integer**: user enters an integer value, such as a percentile or weight.
- **Decimal**: user enters a fractional number, such as 3.45. See "Decimal attributes" on page 109.
- **Money**: user enters a monetary value. See "Money attributes" on page 110.
- **User-Select**: user selects a user from a list of all system users. (Only available for form and grid attributes.)
- **External Datasource**: user opens an LDAP search dialog box and populates the field with Active Directory users. (Only available for form attributes.)
- **Calculated**: displays and stores the result of simple calculations on other fields. See "Calculated attributes" on page 110.
- **URL Field**: displays a hyperlink to a web page. (Only available for grid attributes.) See "URL Field attributes" on page 111.
- **Single Select Object Reference**: used to reference marketing objects on a form or grid. (Only available for form and grid attributes.) See "Object Reference attributes" on page 112.
- **Multi Select Object Reference**: used to reference marketing objects on a form or editable grid. (Only available for form and grid attributes.) See "Object Reference attributes" on page 112.
- **Image**: displays a user-specified graphic. (Only available for form attributes) See "Image attribute" on page 115.

The following attribute types are available as local attributes only.

- **Object Attribute Field Reference**: available as a local attribute only. Displays an existing attribute of a marketing object. (Only available for form and grid attributes.) See "Object Attribute Field Reference attributes" on page 113.
- **Single List Object Reference**: available as a local attribute only. Used to reference marketing objects on a read-only grid. (Only available for grid attributes.) See "Single List Object Reference attributes" on page 114.

- **Dependent fields**: fields whose values are constrained by another field. See "Dependent fields" on page 115.

Text attributes

To display text on a form or TVC component (that is, a grid or list), IBM Unica Marketing Operations provides two attribute types.

- Text - Single-Line: Appears as a small text box, allowing only one line of text to be entered and viewed.
- Text - Multi-Line: Appears as a larger rectangular text box, allowing for entering and viewing multiple lines of text.

In addition to the standard attribute fields, text attributes have the following additional display options.

Table 19. Display options for text attributes

Field	Description
Maximum length for the field	The maximum number of characters that users can enter in the field. If you do not want to enter a maximum length, select the Use CLOB check box.
Default value for the field	The value stored in the field if the user does not enter a value.
Use Clob	Use the CLOB data type. If this check box is selected, any value in the **Maximum length** field is ignored. This option is not available for campaign attributes.

Single-Select attributes

If the list of options is relatively short, and does not change often, you can use the Single-Select attribute type. It can appear on a form as either a drop-down list or a radio button group.

The choices are supplied from a list of pre-defined options that you specify when you create the attribute. The user can select only one choice from the list.

Note: This attribute type is not available for cell attributes.

When you create the attribute, you use the **Field Type** field to specify its appearance:

- Dropdown List (the default)
- Radio Button Group

When you create a Single-Select attribute, you must specify the list of items the user can choose from. The following table describes the fields you use.

Table 20. Options for Single-Select attributes

Field	Description
Allowed values for the field	A text box you use to enter a new value. After you enter a value, click **Add** to add the value to the list of allowed values.

Table 20. Options for Single-Select attributes (continued)

Field	Description
Allowed values list box	A list box that displays all the allowed values for this single-select attribute. The list is presented on the form in the same order as it appears in this list. You can use the buttons to the right of this list box to organize the list: • **Remove**: click to remove the selected value. • **Up**: click to move the selected value up in the list • **Down**: click to move the selected value down in the list.
Default value	A drop-down list you use to specify the default value for the attribute. You can select any of the allowed values.

Single-Select - Database attributes

The Single-Select - Database attribute type functions the same as a single-select attribute, except that the list of choices comes from a database table containing valid items. If the list of choices is relatively long, or could change, consider using the Single-Select - Database attribute type.

You can make a Single-Select - Database attribute dependent on the value in another field. For example, you could make the choices in a list of cities dependent on which state is selected.

Note: This attribute type is not available for cell attributes.

When you create a single-select database attribute, you must specify the lookup table, and other information as described in the following tables.

Additional Basic Options fields

Single-Select - Database attributes have the following additional basic options:

Table 21. Options for Single-Select - Database attributes

Field	Description
Filter database table name	A value to use to filter the dropdown list of table names for the **Use values from this database table** field. Only those lookup tables with the specified text in their table names are included in the list. If this field is empty, the list contains all lookup tables in the database.
Use values from this database table	Select the table that contains the values that you want to display to users.
Key Column	Select the primary key for the table.
Display Column	Select the database column that contains the values you want to display on the form.
Sort-by Column	Select the column that determines the order of the list when it displays on the form.
Sort Order	Select Ascending or Descending, depending on how you want the list to display.

Table 21. Options for Single-Select - Database attributes (continued)

Field	Description
This field is dependent on the following column	Select the check box and specify the database column from the drop-down list. (This option is not available for global attributes.)

Additional Grid Options

Single-Select - Database attributes have the following additional grid option:

Table 22. Grid options for Single-Select - Database attributes

Field	Description
Do Not Cache Lookup Values	Select the check box to update the values from which users can select every time the grid is saved or refreshed.

Additional Display Options fields

Single-Select - Database attributes have the following additional display options:

Table 23. Additional display options for Single-Select - Database attributes

Field	Description
Default Value	Select a default value for the attribute, or leave this field blank if you do not want to have a default value for the attribute. (The list contains all values in the database column specified in the **Display Column** field.)

Multiple-Select - Database attributes

You can define an attribute that allows the user to choose multiple values from a valid list of options. For example, when specifying the products for a particular marketing campaign for a bank, you might want to select one, two, or all of the following options:

- 1-year CD
- 5-year CD
- Bank Credit Card

To offer multiple selection in a field, you use an attribute with a type of Multiple-Select - Database. Creating a multiple selection attribute is similar to creating a Single-Select attribute, with some additional setup.

Note: This attribute type is not available for campaign or cell attributes.

When you create a Multiple-Select - Database attribute, you must specify the lookup table, and other information as described in “Single-Select - Database attributes” on page 107.

When creating Multiple-Select - Database attributes, keep in mind the following restrictions:

- The value in the **Attribute Database Column Name** field needs to be unique across attribute categories. (You cannot use the same database column name for both a grid attribute and a form attribute.)

- You must not change the data type of the key column after you create the attribute.

You must also specify the following additional display options:

Table 24. Options for Multiple-Select - Database attributes

Field	Description
Multi-Select Join Table Name	The name of the join table to use for this attribute. Every Multiple-Select - Database attribute must have a unique join table.

Yes or No attributes

You can create an attribute that can only have one of two values (true/false, yes/no, etc.). For example, you can have a form where the user enters either Yes or No to a question. Use the Yes or No attribute type for this purpose.

A Yes or No field can display as a checkbox, a drop-down list, or a radio button group.

Yes or No attributes have the following additional basic options:

Table 25. Options for Yes or No attributes

Field	Description
Default Value	Specifies the default value for the attribute. You can choose Yes, No, or Not Available. (Not Available is the same as No if you chose Checkbox for the form element type.)
Display name fields	Specify the display name for each possible value. The defaults are Yes, No, and Not Available. Display names are not used if you select Checkbox as the form element type in the display options.
Sort Order fields	The values in these fields specify the order in which the possible values are listed on the form. By default, the order is Yes, No, and Not Available. If you clear the Sort order field for a value, that value does not display to users. The sort order does not apply if you choose Checkbox as the form element type in the display options.

Decimal attributes

You can use Decimal attributes to display non-integer values. For example, use a decimal attribute to represent a field that contains percentages.

Decimal attributes have the following additional basic option:

Table 26. Options for Decimal attributes

Field	Description
Number of decimal places for the field	The number of digits users can enter after the decimal point. The maximum value is 7.

Decimal attributes have the following additional display option:

Table 27. Display options for Decimal attributes

Field	Description
Default value for the field	The value to use if the user does not enter a value.

Money attributes

Money attributes represent monetary values, such as salary or item cost.

The currency sign is set from the locale information for the user.

Money attributes have the following additional basic option:

Table 28. Options for Money attributes

Field	Description
Number of decimal places for the field	The number of digits users can enter after the decimal point. The default value is 2. You can specify more decimal places if the attribute displays a conversion rate (typically 5 decimal places) or per unit costs that are in micro-cents. The maximum value is 7.

Money attributes have the following additional display option:

Table 29. Display options for Money attributes

Field	Description
Default value for the field	The value to use if the user does not enter a value.

Calculated attributes

A Calculated attribute is a read-only field whose value is calculated based on a specified formula.

When you save a form that contains calculated attributes, IBM Unica Marketing Operations checks the formulas to ensure that they are valid.

A Calculated attribute has the following additional basic options.

Table 30. Options for Calculated attributes

Field	Description
Formula	The formula that calculates the value. Any attributes used in the formula must be included on the same form as the calculated attribute.
Number of decimal places for the field	The number of digits to display after the decimal point

Formula syntax

You can perform the following binary operations.

- Addition (+)

- Subtraction (-)
- Multiplication (*)
- Division (/)

You can perform the following operations on an arbitrary number of comma-separated operands.

- **Sum**: for example, `Sum(Salary, 1000, Bonus)`
- **Avg**: arithmetic average, for example, `Avg(BudgQtr1, BudgQtr2, BudgQtr3)`
- **Min**: select the minimum value, for example `Min(IQ, 125)`
- **Max**: select the maximum value, for example `Max(Sale1, Sale2, Sale3, Sale4)`

An operand can be any of the following.

- A decimal constant (for example, 2.5).
- The attribute internal name of an attribute on the current form of the following types: Money, Integer, Decimal, or Calculated. If the formula references an attribute that is not included in the form, saving the form results in an error.

Calculated attribute example

Assume the **Wages** form contains the following currency fields: **BaseSalary**, **Bonus**, **Insurance**, and **FedTax**. You could create a calculated field named **Net pay**, and enter the following formula for it: `BaseSalary+Bonus-FedTax-Insurance`

Example to avoid

Since you can reference one calculated field within another, take care to avoid infinite recursion. For example, consider a form with the following attributes.

- **Salary**: an integer or money attribute
- **Commission** = Salary + (Bonus * 0.10)
- **Bonus** = (Commission * 0.5) + 1000

The **Commission** and **Bonus** attributes refer to each other, creating an infinite loop when the system attempts to calculate the values.

Grid attribute example

Calculated fields can be used in grids, as well as on forms. A simple example is if a grid contains columns for units and cost per unit, you can create a column for the grid to represent the total cost: `Units * CostPerUnit`

URL Field attributes

To add a hypertext link to grids and forms, you use the URL Field attribute. For grids, you can specify a link to a URL for each row that gets added to the grid.

For URL Field attributes, you specify database columns that hold the actual URL (**DB Column for URL**) and the link text that displays in the final grid or form (**Database Column**).

Note: This attribute type is not available for campaign or cell attributes.

For example, suppose that you have a grid that contains vendor data, and for each vendor you are required to specify a website for the vendor. In the Forms Editor, you can create a URL Field attribute as follows.

Table 31. Example settings for adding a vendor URL field to a grid

Field	Value	Description
Attribute Type	URL Field	Specifies the URL Field attribute type.
Attribute Internal Name	vendorURL	Unique identifier for the attribute.
Attribute Display Name	Vendor URL	The label that appears in the user interface.
Attribute Database Column Name	textURL	The database column added to hold the display text for the link.
DB Column for URL	linkURL	The database column added to hold the actual URL. You do not have to enter **http://**. For example, to link to Google, you can enter either `www.google.com` or `http://www.google.com`.

After you set up an object in IBM Unica Marketing Operations that uses this form, users who add grid rows or populate a form specify a URL. In a grid, users can specify a URL for each row. Users can then click a link to open the website in a new window.

Object Reference attributes

You use Object Reference attributes to associate marketing objects with projects or other marketing objects. An Object Reference attribute creates a field with a selector attached. Users can search in the selector for a particular marketing object and then add it to the project or marketing object they are creating or editing.

Multi Select Object Reference and Single Select Object Reference attributes are similar; however, the resulting user interface field can contain multiple entries versus a single entry.

You cannot add these attributes to read-only grids. To add marketing object references to read-only grids, use the Single List Object Reference attribute.

Note: These attribute types are not available for campaign or cell attributes.

To specify an Object Reference attribute, you enter the following information specific to this attribute type:

Table 32. Options for Object Reference attributes

Field	Description
Marketing Object Type	The marketing object type of the items you want on the list that is displayed to the user.
Template ID	The ID of a specific template for the specified marketing object type. If you select the Auto Create check box below, this template is used to create the object. Otherwise, only marketing objects created using the specified template are displayed to users.

Table 32. Options for Object Reference attributes (continued)

Field	Description
On Click go to	Select the destination screen when you click the object link on a form: • **Summary Tab**: opens the summary page of the marketing object • **Analysis Tab**: opens the analysis page **Note:** This field is available only for grids.
Modifies	Use this option when the object that contains this form is intended to change or update the contents of a marketing object (for example, a Change Order or Work Request project). **Note:** This field is available only for forms.
References	Use this option to indicate that the marketing object is only referenced, not modified. **Note:** This field is available only for forms.
Auto Create	Select this option to create an "empty" marketing object if users choose a template that contains a form with this attribute when they create an object. Note that: • This check box is not available for Multi Select Object Reference attributes. • This check box has no effect if the form is added to a marketing object, as marketing objects cannot automatically create other marketing objects. This field is available only for Single Select Object Reference attributes on forms.

Object Attribute Field Reference attributes

You add a local Object Attribute Field Reference attribute to a specific form to display information about a marketing object that is linked to the form. For example, if the form contains a Single Select Object Reference attribute for a marketing object named **Brochure01**, you can also add an Object Attribute Field Reference attribute to display any of the attributes for **Brochure01** (such as its status).

Note: You cannot create an Object Attribute Field Reference attribute that corresponds to a Multi Select Object Reference attribute.

The resulting object attribute field information is for display only. Users cannot edit it.

This attribute type is only available as a local attribute, so it is not available for campaign or cell attributes.

You can reference both standard marketing object attributes and custom attributes. For custom attributes, you must know the attribute name and the name of the form that contains the attribute in the marketing object template.

Object Attribute Field Reference attributes require the following additional basic options:

Table 33. Additional basic options for Object Attribute Field Reference attributes

Field	Description
Attribute Name	The name of the marketing object attribute you want to reference. To reference a standard attribute, select it from the drop-down list. To reference a custom attribute, enter the name in the form <form_name>.<internal_name> where • `form_name` is the name of the form that contains the custom attribute in the marketing object template • `internal_name` is the value of the Attribute Internal Name field for the custom attribute
Reference Object	The internal name of the attribute on the current form that references the marketing object.

Standard attributes

A set of standard attributes is defined for all marketing objects. The standard attributes follow.

Table 34. Standard marketing object attributes

Attribute	Description
Name	The display name for the marketing object.
Description	The text description entered for the marketing object, either when it was created or edited.
TemplateName	The ID for the marketing object template that this marketing object was created from. You set this ID when you create a marketing object template.
Code	The object code for the marketing object.
SecurityPolicy	The ID for the security policy associated with this marketing object. This is a foreign key into the **uap_security_policy** table, where you can find the name of the associated security policy.
Status	**Active** or **Deleted**. All marketing objects that have not been deleted have a status of Active.
State	The current state for the marketing objects. Each marketing object type has its own set of states and state transitions.
CreatedBy	The User ID for the user who created the marketing object. User IDs are listed in the **uap_user** table.
CreatedDate	The creation date of the marketing object.
LastModUser	The User ID for the user who last modified the marketing object.
LastModDate	The date of the last modification made to the marketing object.
ComponentID	The internal name for the marketing object type that this marketing object is based on.

Single List Object Reference attributes

You add a local Single List Object Reference attribute to a specific form to:

- Reference marketing objects on a list, similar to how you use a Single or Multi Select Object Reference attribute to reference marketing objects on a grid.

- Display a grid as a list for an object (project or marketing object). For details, see "Displaying a grid as a list" on page 87.

This attribute type is only available as a local attribute for grids.

"Creating lists of marketing objects" on page 89 provides an example of using a Single List Object Reference attribute.

To specify a single list object reference attribute, you must enter the following information specific to this attribute type.

Table 35. Options for Single List Object Reference attributes

Field	Description
On Click go to	Used to choose the tab of the object that opens when you click an object link from a list view. You can choose to navigate to either the Summary Tab or the Analysis tab.
Object Reference ID Column	Used to display a list of marketing objects in a list view. If you select this option, the **Object Reference Type Column** field becomes active. Enter a value that corresponds to the object instance ID column for the objects you are mapping.
Object Reference Type Column	Used in concert with the **Object Reference ID Column** field to display marketing object references on list views. Enter a value that corresponds to the object type column for the objects you are mapping.
Grid Object Reference Column	Used to display a grid as a list view. If you select this option, you must enter the following information in the field: • The name of the form that contains the grid. This field indicates the name of the form in Marketing Operations, chosen when the form was uploaded into Marketing Operations. • The internal name of the Single Select Object Reference attribute as defined on the grid. The syntax is `<form_name>.<attribute_name>`. For example, if you have a grid that has a Single Select Object Reference attribute with an internal name of **Brochure**, and the grid is contained on a form that is named **EventCollateral** in Marketing Operations, you enter **EventCollateral.Brochure** in this field.

Image attribute

To enable users to display a graphic on a tab in a project or marketing object, you use an Image attribute. The attribute creates a display area for the image and a field with a Browse button so users can select the graphic to display.

Note: This attribute type is not available for grid, campaign, or cell attributes.

Dependent fields

Dependent fields are attributes whose values are constrained by another field. For example, if you want to have a field that displays all the cities for a selected state, you could make the city field dependent upon the state field. You can make an attribute dependent on another attribute only when you add it to a specific form.

That is, when you create a shared attribute, you cannot make it a dependent field when you create it, only within the context of the forms you add it to.

This section presents the city/state example.

First, you need to create the lookup tables for cities and states. Here are the first few rows of these two tables.

The `lkup_state` table:

state_id (primary key)	state_name
1	Massachusetts
2	New York

The `lkup_city` table:

city_id (primary key)	city_name	state_id (foreign key pointing to primary key for lkup_state)
1	Boston	1
2	Cambridge	1
3	New York	2
4	Albany	2

Once you have these tables, you create the parent (state) and child (city) attributes.

For the state attribute, use the following values:

Field	Value
Database Column	state_id
Use values from this database table	lkup_state
Key Column	state_id
This field is dependent on the following column	Leave this box clear.

For the city attribute, use the following values:

Field	Value
Database Column	city_id
Use values from this database table	lkup_city
Key Column	city_id
This field is dependent on the following column	Check this box and select state (the Internal Name you defined for the state attribute).

Note the following:

- You can have a Multiple-Select - Database attribute be dependent upon a Single-Select - Database attribute, but not the other way around. In the example above, the city field could be a Multiple-Select - Database attribute, but not the state field.

- You can sort lookup values based on either the text description or the ID for the lookup value.

Chapter 9. Working with Metrics

Metrics measure the performance of an object. Typical metrics include financial metrics, such as cost and revenue, and performance metrics, such as the number of contacts and the number of responses in a particular marketing campaign. Metrics are always numeric.

You can define a metric to calculate its value based on other metric values. For example, you can define campaign profit as the revenue minus the cost. You can also define metrics that roll up from projects to programs and from programs to plans.

You associate metrics with metrics templates, which are in turn associated with the templates for other objects. As a result, when you add an object, the metrics identified through both templates display on the Tracking tab.

To organize the metrics you define, you can create groups within your metrics templates. Once established, a group can be added to other metrics templates as needed. You can also define metrics dimensions to track different values for each metric: for example, Actual value, Target value, Projected value (optimistic) and Projected value (pessimistic). Metrics dimensions apply to all metrics templates, and appear to users as entry columns on the Tracking tab.

Types of metrics

In addition to metrics that are user-entered, there are three types of metrics: computed, rollup, and planned. You set the metric type when you add the metric to a particular metrics template. As a result, the same metric can be computed for a project and roll up in a program or plan.

Computed metrics

To specify that a metric is computed, rather than user-entered, you check the **Computed** box and enter a formula when you add the metric to a metrics template.

For example, you create an ROI (return on investment) metric. When you add it to a metrics template, you define that it is computed using the following formula:

```
((TotalRevenue - TotalCost)/TotalCost)*100
```

- When you define a formula for a metric, you use the Internal Name defined for each metric in the formula.
- You can use the following operators in the **Formula** field: +, -, *, /, SUM, AVG, MIN, MAX, and ROLLUP.

Note: If you include a NULL value in the formula, these operators treat the NULL value differently. Aggregation functions (SUM, AVG, MIN, and MAX) ignore the NULL value. Arithmetic calculations treat the NULL value as 0; however, if you enter #/0 or #/NULL, Marketing Operations displays `#DIV/0!`

Metric rollups

When you add a metric to a metrics template, you can specify that the metric will "roll up" from the child object to the parent object. For example, project metrics can roll up to the parent program level, and program metrics roll up to the parent plan level.

Metrics that roll up can display on the Tracking tab of the parent object.

- Any project metrics that you configure for rollup display in the Project Rollups table on the Tracking tab of the parent program.
- Any program metrics that you configure for rollup display in the Program Rollups table on the Tracking tab of the parent plan.

For example, to track the number of responders to all projects in a program, you define the following metrics:

- **NumberOfRespondersPassed**, representing the number of responders from the projects.
- **NumberOfProgramResponders**, representing the number of responders in the program.

Next, you add the metrics to metric templates as follows:

- For the project metric template, add a group (for example, **Performance**) and add the **NumberOfRespondersPassed** metric to it. Do not select **Computed** or **Roll-up** when adding the metric to the group.
- For the program metric template, add a group (for example, **Performance**) and add the **NumberOfProgramResponders** metric to it. Do not select **Computed** or **Roll-up** when adding the metric to the group.
- For the program metric template, add the **NumberOfRespondersPassed** metric in two places:
  - To the metrics template, without a group: click **Manage Metrics** and check the **Roll-up** box.
  - To any group (typically, a group that matches the group in the project metric template: in this example, **Performance**). Clear the **Roll-up** box. Check **Computed** and enter the following formula: `NumberOfProgramResponders+ROLLUP(NumberOfRespondersPassed)`

Planned metrics

To include goals and performance expectations for your plans and programs, you can identify metrics as being planned. Planned metrics are similar to rollups in that values are inherited from one object in the hierarchy to another, but in the opposite direction: child objects inherit planned metrics from parent objects.

To define a planned metric, check both the **Roll-up** and **Is Planned** boxes when adding the metric to the plan or program metrics template. Planned metrics appear in the Planned column of the metrics table on the Tracking tab of each child object.

Metric creation overview

To add metrics to objects, create metric templates.

1. From IBM Unica Marketing, select **Settings > Marketing Operations Settings > Template Configuration > Metrics**.
2. Add metrics dimensions (optional).

3. Add metrics.
4. Add a metrics template.
5. Manage the metrics on the metrics template by adding them to groups or to the template itself, and by defining the type for the metric.
6. To localize the metrics, export, translate, and import a properties file for each locale (optional).

Working with metrics, metrics dimensions, and metrics templates

To work with metrics, metrics dimensions, and metric templates, go to **Settings > Marketing Operations Settings > Template Configuration > Metrics**.

Metrics and metrics templates are sorted alphabetically by the ID field. Metrics dimensions are sorted by the order in which they were added.

- To add a metric, metrics dimension, or metrics template, click the corresponding **Add** link on the Metrics Templates page. You can add an unlimited number of metrics and metrics templates. You can add up to five metrics dimensions; each one applies to all of your metrics templates.
- To edit a metric, metrics dimension, or metrics template, click the corresponding **Edit** link on the Metrics Templates page.
- To delete a metric, metrics dimension, or metrics template, click the corresponding **Delete** link on the Metrics Templates page. You cannot delete a metric or metrics template that is used by any other object: the **Delete** link is disabled if the item is used by another object.

Metrics properties

When adding or editing metrics, you supply values for the following fields.

Table 36. Metrics properties

Property	Description
Internal Name	The ID of the metric. Avoid spaces and special characters. Metrics are sorted on the Metrics Templates page by this Internal Name. When you identify a metric as computed in a metrics template, you use the internal name to identify each metric in the formula you supply.
Display Name	The name of the metric when used in Marketing Operations. **Note:** Limit this name to three 10-character words (or less). The display limit in metric rollup tables within Marketing Operations is 32 characters. For example, "Mailed Client Savings" displays in full, while "Savings Mailed to Prospective Clients" does not display completely. You can translate the Display Name using properties files.
Description	Descriptive text for the metric. This text is useful for determining the purpose of the metric.
Unit Type	The type of metric. Choose from Number, Decimal, Percent, or Money.

Table 36. Metrics properties (continued)

Property	Description
Display Format	How the metric appears on the Tracking tab for an object. Typically, the Display Format corresponds to the Unit Type. Select: • # - number or decimal • #% - percent • $# - money While you select $# when you define monetary metrics, users can enter values for the metric in the currency for their defined locale.
Precision	The number of digits of precision, up to 9. The precision controls the number of digits after the decimal point for the metric value. Values are rounded using the "half-up" rule. If the digit to the left of the discarded digit is odd, round up. If the digit to the left of the discarded digit is even, round down. For example: • 9/2=4.5 Since the number before 5 is 4 (even number), round down to 4. • 7/2=3.5 Since the number before 5 is 3 (odd number), round up to 4.

Metrics dimensions properties

When adding or editing metrics dimensions, you supply values for the following fields.

Table 37. Metrics dimensions properties

Property	Description
Display Name	The name of the dimension to be used in Marketing Operations. Appears as a column heading on the Tracking tab when users enter metrics for an object. You can translate the Display Name using properties files.
Description	Descriptive text for the dimension. This text is useful for determining the purpose of the dimension.
Type	• Actual: Use to capture metrics that are entered manually or loaded into Marketing Operations from Campaign or some other tracking software. • Target: Use to capture values for metrics that your organization uses for planning and setting targets. Target dimensions are the only dimensions that display in the wizards used to create objects. • Other: Use for any dimension that is not Actual and that you do not want to display in the wizards used to create objects.

Creating metrics templates and metric template groups

A metrics template is a collection of metrics. You add metrics to Marketing Operations by adding metrics templates. Likewise, you attach metrics to an object template by selecting a metrics template.

Each metric template works with only one object type: **plan**, **program**, or **project**. Because each object template can use only one metrics template and there is only one template file for plans, you should not define more than one metrics template with a type of **plan**.

A metric can belong to more than one metric template.

Metrics in a template can be, but do not need to be, organized into metric groups. A metrics template can contain a mix of grouped and ungrouped metrics.

To create or edit a metrics template

Before you can add metrics to object templates, you organize the metrics into metrics templates.

1. Click **Add Metrics Template** or **Edit** on the Metrics Templates page.
2. Enter or edit the **Internal Name**, **Display Name**, and **Description fields**.
3. Select a type of object to use this metrics template: **plan**, **program**, or **project**.

   Note: Since there is only one template for plans, do not define more than one metrics template with a type of **plan**.
4. Add metrics to the template.
   - To add a metric to the template without using a group, click **Manage Metrics**.
   - To add a group of metrics, click **Add Metrics Group**.

     You can select any existing group or create a group.
5. Select an individual metric and define the properties for the metric in this template.
   - If the metric is entered individually by users in the object, clear the **Computed by Formula**, **Roll-up**, and **Planned** check boxes.
   - If the metric is computed, select the **Computed by Formula** check box and enter a **Formula**.
   - If the metric is collected from other metrics, select the **Roll-up** check box. Rollup metrics are available in plan or program templates only.
   - If the metric is planned, select the **Roll-up** and **Planned** check boxes. Planned metrics are available in plan or program templates only.
6. Click **Save Changes** to save the metrics template.

Important: When you edit a metrics template, the changes affect new objects only.

For example, you have a project that uses the "basic campaign" metrics template. You add a metric to this metrics template. The existing project does not get the new metric. However, when you add a project that uses the "basic campaign" metrics template, it does include the new metric.

Metrics groups

In a metrics template, you create metrics groups to organize metrics that are similar or to share common sets of metrics in multiple metrics templates.

After creating a metrics template, you can add a metrics group. Click **Manage Metrics** next to the name of the metrics group to add metrics to the group. You can also order the metrics within the group in the Manage Metrics dialog. The metrics show in this order in your reports.

When you change a metrics group, the change affects all of the metrics templates that include the group. For example, you create a "Financials" metrics group in your "basic campaign" metrics template. Later, you add the "Financials" metrics group to your "seasonal campaign" metrics template. You then edit the "seasonal campaign" metrics template and add a metric to the "Financials" metrics group. The new metric is now also included in the "basic campaign" metrics template.

You can delete a metrics group from a metrics template. If another metrics template contains the same metrics group, the metrics group still exists. You can still add the metrics group to other metrics templates. If you delete all instances of a metrics group from all metrics templates, you also delete the metrics group from Marketing Operations.

Localizing metrics

You can localize metrics using one of these methods.

- Upload properties files translated for different locales.
- Work with users who have different locales set as preferences. A user from each locale can change the **Display Name** and **Description** for the metrics.

To generate a properties file for translation, click **Export Properties File** on the Metrics Templates page. You download a compressed file that contains the properties file for your locale. The file name is in the format `metric-definition_<locale>.properties`.

The display name keys and description keys for metrics are saved in the metrics-related tables for plans, programs, and projects. To distinguish keys from real values, use the key prefix, which is $_$.

While Marketing Operations is running, the system replaces metrics keys with values from the metrics properties file.

Properties file sample:

```
$_$.metric.AVFee.display=Audio Visual Fee ($)
$_$.metric.AVFee.description=Audio Visual Fee
$_$.metric-group.BoothExpenses.display=Booth Expenses
$_$.metric-dimension.metricValue0.display=Actual
$_$.metric-template.CampaignProject.display=Campaign Project
$_$.metric-template.CampaignProject.description=Metrics for
     Campaign Project Template
```

Importing a metrics properties file

After translating the `metric-definition_<locale>.properties` file, you upload the file for the new locale.

1. Click **Import Metrics Template** on the Metrics Templates page.
2. Select the **Properties file** check box.
3. Click **Browse** to select the properties file.
4. Click **Continue**.

Importing metrics templates into IBM Unica Marketing Operations

If you have multiple instances of Marketing Operations, you can export the metrics templates from one instance and then import them into other instances.

During the upgrade process, metrics specification files from a previous installation of Marketing Operations are made available for your reference from the **Legacy Metrics Specification Files** link at the bottom of the Metrics Templates page.

To import metrics templates

Import metrics templates to quickly add metrics from previous versions of Marketing Operations.

1. Click **Import Metrics Template** on the Metrics Templates page.
2. Select the **File** checkbox.
3. Click **Browse** to select the properties file.
4. Click **Continue**.

Chapter 10. Setting Up Security

You create and manage users and user groups in the IBM Unica Marketing Platform. Then, in IBM Unica Marketing Operations, you configure security policies that grant those users permissions to access various objects and parts of the product based on access roles.

Marketing Operations provides security through several kinds of access roles and users are assigned access roles in different ways. For example, you and the other system administrators assign security policy roles to users from the User Permissions page, while people who create projects specify which users participate in which roles. But no matter how a user obtains an access role, the permissions granted to that role are determined by a security policy and someone who has not been assigned any roles is governed by the default security policy, Global.

About access roles

To support the collaborative features in IBM Unica Marketing Operations, you can grant varying levels of access to different types of users based on access roles.

There are three types of roles in Marketing Operations - object, project, and security policy - and there are two default security roles that support the Global security policy.

About the default security roles

The default security roles, Plan Administrator and Plan User, are included in the system's default security policy, Global. These roles are based on the application access levels for Marketing Operations in Marketing Platform and they are always in effect.

- If, in the Marketing Platform, you add a user to a user group with the Plan Admin level of access, that user is assigned the Plan Administrator access role in Marketing Operations. By default, Plan administrators have access to all administrative and configuration settings.
- If, in the Marketing Platform, you add a user to a user group with the Plan User level of access, that user is assigned the Plan User access role in Marketing Operations. By default, Plan users are granted very few permissions.
- If, in the Marketing Platform, you add a user to a user group with the `corporate` level of access, that user is assigned the Corporate Marketer access role in Distributed Marketing. By default, corporate marketers are granted administrative permissions.

You cannot override these role assignments in the **User Permissions** page of Marketing Operations, and you cannot remove them from the Global security policy. To change the system role assigned a user, you must change their user group assignment in the Marketing Platform.

Remember that changes made to users in the Marketing Platform are reflected in Marketing Operations only after the user tables are synchronized. User synchronization occurs programmatically at a regular interval, as specified by `usermanagerSyncTime` under **Settings > Configuration > Marketing Operations >**

umoConfiguration. Or, you or another system administrator can invoke the **Synchronize Users** function from the **Administrative Settings** page in Marketing Operations.

About object access roles

Each object type in IBM Unica Marketing Operations has a set of object access roles. For projects and approvals, object access roles are also called "access levels."

When users do their work in Marketing Operations, the system assigns them the appropriate object access role. For example, a person who creates a project is the project owner and the users assigned to the project's roles are the project participants. Object roles for projects and approvals are also called access levels because project participants with the appropriate permissions can also assign object roles to participants (in addition to assigning project roles).

Every object type has an owner, by default the person who created it. Many object types also have additional roles, as described in the following table.

Table 38. Object types and associated roles

Object	Roles / Access Levels
Plan	Plan Owner, Plan Participant
Program	Program Owner, Program Participant
Project	Project Owner, Project Participant, Project Requester
Request	Request Recipient, Request Owner
Asset	Asset Owner
Account	Account Owner
Approval	Approval Owner, Approval Approver
Invoice	Invoice Owner
Teams	Teams Manager, Teams Member
Marketing Object	*Marketing Object* Owner For example if you have a marketing object type named Creatives, its object role name is Creatives Owner.

You cannot delete object roles from security policies because they support general system processing.

About security policy roles

Security policy roles are exactly that: roles you add to individual security policies. These roles are meant to control access to IBM Unica Marketing Operations functionality based on a job title or function a user performs for your organization as a whole.

For example, perhaps marketing managers need full access to all plans, programs, projects, and so on while individual marketers need to be able to view plans and programs but are allowed to create projects only. In such a case you would add security roles named Marketing Managers and Marketers.

The roles you add to security policies plus the default system roles (Plan Administrator and Plan User), are the roles you assign to individual users on the **User Permissions** page.

Project roles

Project roles represent the job functions of the people who participate in a project or make project requests. Template developers construct a list of appropriate roles on the **Project Roles** tab for each project template. Then, when configuring security policies, you select the template and the system displays the template's project roles along with the other access roles. That way you can configure different permissions for different templates based on project roles in addition to system, object, and security roles.

Additionally, within individual templates, you can configure different permissions for different tabs (both custom and default tabs). For example, perhaps participants from one project role shouldn't be allowed to edit the workflow; they should just be able to view it. Or perhaps only the user who participates in a project role named "accounting" for an individual project should be allowed to edit the **Budget** tab no matter what their other access roles might be.

Custom security for template tabs based on project roles can be disabled, if necessary. To do so, set the initialization parameter named `customAccessLevelEnabled` to `false` under **Settings > Configuration > Marketing Operations > umoConfiguration**.

Security policies and permissions

Security policies are sets of rules that grant or deny user access to objects or parts of IBM Unica Marketing Operations based on access roles. For example, you can configure security policies that ensure the following.

- Managers have access to all the projects in their business units.
- Users' access to projects is based on both their business unit and their job function.
- Only select users can create new Lists, On-demand Campaigns, or Corporate Campaigns.
- Some users can create projects while others must use requests to start a project.

Any object created in Marketing Operations: plan, program, project, request, and so on, is governed by a security policy. The security policy assigned to a new object is usually determined by the template that was used to create it.

Security policies

A security policy is presented as a set of tables, with one table for each object type (plan, program, etc.). The columns represent the access roles and the rows represent permissions, grouped by the object's tabs.

Object access, system, and security roles are always present. However, when you configure security for project and request templates, the role columns expand to include the project roles specified in the template.

The permissions configured in security policies control access throughout all the functions of IBM Unica Marketing Operations.

For example, the results of searches are constrained by access rights: if a user does not have access to the **Workflow** tab of a specific project, tasks from that project do not appear in the **All Tasks** search. Additionally, if a user does not have the ability to add attachments to a project, that user does not receive the alerts that are triggered when another participant performs an attachment task.

The security policy in effect at a given time for a given object (project, plan, or program, for example) depends on the security policy specified by the object's template. For example, when template developers create project templates, they specify the security policy on the **Template Properties** tab. Then, when projects are created from that template, access to those projects is determined by the security policy specified in the template.

Security policy permissions

Each object type has its own access control table in the security policies. Each table displays access control sections for each tab, with rows that represent individual actions such as add, edit, delete, view, and so on. To configure permissions, you click the table cell that represents the intersection of an access role and a permission setting. Clicking in the cell toggles through the following settings:

Symbol	Name	Description
Check	Granted	Grants users in the role access to the function.
X	Blocked	For system and security policy roles only, denies users in the role access to the function. (You cannot block functions by project or object roles.)
Blank	Inherited	Users in the role inherit the permission setting for the function either from their other project and object roles, or, if none of those have the permission specified, the appropriate default system role (Plan Administrator or Plan User) from the Global policy. If none of the roles they qualify for grants them permission, they are unable to perform the function.

If a user qualifies for more than one role, his or her access rights are cumulative. For example, if a user's security role grants different permissions than does his or her current project role, that user’s access rights include all permissions from both roles.

A permission block supersedes any other setting. For example, if a user's project role grants him access to the **Budget** tab of the projects created from a specific template but his security role blocks access to the tab, that user cannot access the **Budget** tab.

The Global security policy

The Global security policy acts as the system's default security policy. The term "global" does not indicate that every user has global or full access to everything, but rather that this security policy is, by default, associated globally with every user. You can create additional security policies that extend the Global policy, but the Global policy is always in effect, regardless of any other security policies you create.

The Global policy:

- Applies to anyone who logs in to Marketing Operations
- Cannot be disabled
- Supersedes all other policies. The Global policy security role a user qualifies for is always taken into consideration when the system determines access rights.

- Contains permission settings for the default system roles, Plan Administrator and Plan User. The access settings for these roles are used as the fallback or default for any user who does not currently qualify for a project, object or security policy role.

Planning security policies

Before you begin configuring security policies, determine the security needs of your organization and then plan your security strategy.

First, determine how many security roles and project roles you need. Then, determine whether you need to create multiple security policies or whether you can simply modify the Global policy to meet your needs:

- If all the business units in your organization follow the same rules, or, you can implement the appropriate differences in access through a combination of project and security roles, it makes sense to implement one security policy – a modified Global policy. You can add as many security roles as necessary to the Global policy.
- If there are many functional groups in your organization that require very different types of access, leave the Global policy in its default state and add new security policies for each group of users.
- At any given time, a user can have a project role, an object role and a security role. It is best practice to assign a user one security role only from a single security policy. Therefore, if you have users who multi-task in such a way that they need more than one security role in addition to their project and object roles, it is recommended that you create additional security policies and assign that user one role from each of the appropriate security policies.

As a best practice, try to implement the smallest number of security policies possible. Within a single security policy you can configure different permissions for each object type and for each marketing object template based on security roles. Additionally, for each project template you can configure different security role and project role permissions for each tab (custom and default) for both the projects and the requests.

When you set up permissions for the roles, remember that the individual permission settings are granular. For example, if you want users in a particular role to be able to edit the **Summary** tab of a project, you must grant that role both **Edit** and **View** permissions. If you forget to select **View** permissions, users in that role will never see the **Summary** tab so their permission to edit it is useless. In another example, it would not make sense to grant permission to post messages without also granting permission to read them.

About configuring security policies

After you have determined your security strategy, you configure and/or create the appropriate security policies and roles and then specify to which users the people with those roles can assign project roles and access levels.

Editing the Global security policy

If you can implement the security strategy for your organization with one security policy, use the Global security policy as your single policy. In most cases, you leave the default permissions set as they are for the Plan Administrator and Plan User system roles and add new security roles to implement your security goals.

1. Select **Settings > Marketing Operations Settings > Security Policy Settings > Global**.
2. Add the new security roles as follows:
   a. Click **Add Another Role**.
   b. Enter a name and description for the role.
   c. Repeat these steps for each role you need to add.
3. Click **Save and Edit Permissions**. The **Permissions** page for the plan object type appears.
4. Starting with the plan object type, configure each security role's permission settings appropriately for each object type listed in the **Access to** field.

   Note: Tip: Use click + shift to select multiple cells.
5. For projects, do the following:
   a. Configure the **Add Projects** and **View Project in the List** permissions for each object and security role.
   b. Select a template. The security policy now displays columns for the project roles that are listed in the **Team Members** section of the **Project Roles** tab of this template and displays access control sections for each of the template's tabs.
   c. Configure permissions for each tab in the template, including the custom tabs, for the project, object, and security roles.
   d. Repeat steps b) and c) for each project template.
6. For requests, do the following:
   a. Configure the **Add Requests** and **View Requests in the List** permissions for each object and security role.
   b. Select a project template. The security policy now displays columns for the project roles that are listed in the **Project Request Recipient** section of the **Project Roles** tab of this template and displays access control sections for each of the template's tabs.
   c. Configure permissions for each tab in the template, including the custom tabs, for the project, object, and security roles. Remember that when configuring requests, the permissions you set for at least one of the recipient project roles should match those that you set for the Request Recipient object role.
   d. Repeat steps b) and c) for each project template for which you want to configure custom permissions for requests.
7. For marketing objects, be sure to configure permissions appropriately for each template.
8. Click **Save Changes** when you are finished.

Creating new security policies

If you must use more than one security policy to implement the security setup for your organization, leave the Global policy in its default state and complete the following steps.

1. Select **Administration** > **Security Policy Settings** > **Add a Security Policy**.
2. In the **Policy Properties** page, enter a name and description for the policy. The name must be unique.

3. In the Roles section, enter the names and descriptions for the first two security roles planned for this policy. If you need more than two security roles, click **Add Another Role**.
4. Click **Save and Edit Permissions**.
5. Starting with the plan object type, configure each security role's permission settings appropriately for each object type listed in the **Access to** field.

   Note: Tip: Use click + shift to select multiple cells.
6. For projects, do the following:
   a. Configure the **Add Projects** and **View Project in the List** permissions for each object and security role.
   b. Select a template. The security policy now displays columns for the project roles that are listed in the **Team Members** section of the **Project Roles** tab of this template and displays access control sections for each of the template's tabs.
   c. Configure permissions for each tab in the template, including the custom tabs, for the project, object, and security roles.
   d. Repeat steps b) and c) for each project template.
7. For requests, do the following:
   a. Configure the **Add Requests** and **View Requests in the List** permissions for each object and security role.
   b. Select a project template. The security policy now displays columns for the project roles that are listed in the **Project Request Recipient** section of the **Project Roles** tab of this template and displays access control sections for each of the template's tabs.
   c. Configure permissions for each tab in the template, including the custom tabs, for the project, object, and security roles.
   d. Repeat steps b) and c) for each project template for which you want to configure custom permissions for requests.
8. For marketing objects, be sure to configure permissions appropriately for each template.
9. Click **Save Changes** when you finish setting all the permissions.

   To disable the security policy at any time, click Disable. Disabling a security policy means that users cannot select it in any subsequent projects, requests, or approvals that users create and you can no longer assign users to the security policy.

Configuring the user visibility option for security roles

When users create programs, plans, projects, and so on, they specify which users or teams are participants and, for projects, which users or teams are assigned the project roles. By default, there are no restrictions on which users or teams can be added as participants or assigned a project role.

If you configure the user visibility feature for a security role, you can restrict the list of users that appear in the **Select Team Members** or **Select Member Levels** windows for users with that security role.

1. Select **Administration** > **Security Policy Settings**.
2. On the **Security Policy** page, scroll to the appropriate security policy and select the role. The **User Visibility** page appears.

3. From the list of user groups and teams, select the appropriate groups or teams and then click the arrow button to move them to the list on the right. People who have this security role can select only those users who belong to the user groups in the list on the right when they add participants or assign project roles.

   Note: When the selection box on the right is empty (the default case), there are no restrictions and users in this role see all groups and teams when adding participants or assigning project roles.
4. Click **Save Changes**. The **Security Policy** page appears.
5. Repeat steps 2 through 4 for each security role you want to configure.

To assign security roles

When you have finished adding security roles to security policies, assign the roles to the appropriate users. If a user is not assigned a security role, the system uses the Global policy to determine the user's access rights.

You assign security roles directly to individual uses from the **User Permissions** page.

1. Select **Settings > Marketing Operations Settings**.

   The Administrative Settings page opens.
2. Click **User Permissions**.

   The User Permissions page opens.
3. In the **User Permissions** page, expand the user group that the user belongs to and select the user. The **Properties** page opens.
4. In the **User Role Assignments** section, in the **Available Roles** list box, expand the security policy with the security role you want to assign this user.
5. Select the security role and use the arrow button to move it from **Available Roles** to **Selected Roles**.

   Assign as many roles as necessary, but remember that it is best practice to assign one security role only from a single security policy.
6. Repeat steps 3 through 5 for each user.
7. Click **Save Changes**.

   The role appears under the Assigned Role(s) column in the User Permissions screen.

About controlling access to templates

As described in the sections about security policies, you use permissions in security policies to control the following kinds of access:

- Based on their security roles, which users can create new projects, plans, programs, and so on
- Based on their security roles, which users are allowed to view and interact with items that others create but not to create things themselves
- Based on their project and object roles, which tabs users have access to when they create projects

You also use security policies to specify which templates a user can select when creating a new item.

When a template developer creates a template, the **Summary** tab includes one or more security policy fields. The value specified in the security policy field determines which users can access the template; if you don't have a security role that grants you the ability to create objects of that type in the security policy assigned to the template, the template does not appear in your template list when you create an object of that type.

Additional access controls for projects and requests

Depending on how your organization manages projects, you might configure security policies so that only certain users can create projects while other users must create requests for projects that other users approve or reject. When this is the case, it is also possible that one group of users creates the projects from the requests and then a different group of users works with the projects created by the first group.

To support this business case, project templates have two security policy settings:

- The "view" policy specifies which users can select the template when they create projects or requests for projects. The template developers can specify one or more view policies for each project template.
- The "use" policy specifies who can access a project after a project is created from a request.

The “use” policy can be determined in one of two ways:

- The template developer specifies the policy in the template's **Summary** tab.
- The template developer configures the template so that the user creating the project or project request can specify the “use” policy.

The way a "use" policy is determined is referred to as the "security policy use model." When the use model is set to `Template`, the template developer specifies the "use" policy. When the use model is set to `User`, the person creating the project request from the template selects the security policy from the list that he or she has access to.

Example security configuration for project requests

This example describes an organization, XYZ Corporation, that has a marketing operations team, a strategic marketing team, and some miscellaneous marketers. Users create two types of projects and requests: trade shows and strategic accounts.

- Trade show projects: junior marketers create requests for trade show projects. The requests can be submitted to anyone in the marketing organization, and the resulting projects can be worked on by anyone as well.
- Strategic account projects: junior marketers also create requests for strategic account projects, but they can supply information on the Summary tab only. Additionally, requests can be submitted to members of the strategic marketing team only, and the strategic marketing team is the only team that participates in the projects.

Security policies

The system administrators at XYZ corporation configured two security policies.

- **Marketing Ops**, for members of the marketing operations team. Security for the templates is configured as follows in this policy:
  - Trade show template: all project roles have access to all tabs.

– Strategic Accounts template: the Request Owner role has access to the Summary tab only.
- **Strategic Marketers**, for senior members of the marketing staff. Security for the templates is configured as follows:
  – Trade show template: all project roles have access to all tabs.
  – Strategic Accounts template: all project roles have access to all tabs.

Template permissions

To set up the workflow described above, the template developers configured the templates with the following permissions.

- The Summary tab of the **Tradeshow** template has the following security policy settings:
  – **Security Policy Use Model**: User. The user who creates the request specifies the security policy to apply to the request.
  – **View security policy**: Marketing Ops., Strategic Marketers. (Any user can select the Tradeshow template.)
  – **Use security policy**: Blank. When the use model is set to User, the Use security policy field is disabled. When users create projects or requests from this template, they must specify the security policy.
- The Summary tab of the **Strategic Accounts** template has the following security policy settings:
  – **Security Policy Use Model**: Template. The template developer sets the value in the Use security policy field.
  – **View security policy**: Marketing Ops., Strategic Marketers. (Any user can select the Strategic Accounts template.)
  – **Use security policy**: Strategic Marketers. This means that the user creating the request cannot specify the security policy for it. Instead, the requests created from this template are assigned the Strategic Marketers security policy. Then, only the senior marketers who have security roles assigned from the Strategic Marketers security policy can access the project requests and the projects created from those requests.

Example usage

Consider the following users assigned to the following security polices:

- Strategic Accounts security policy: Mary Manager, Strategic Sam
- Marketing Ops.: Junior Jim, Sophomore Sally

Users create requests and projects as follows:

Project or request	Work steps
Trade show project	Junior Jim creates a trade show request and submits the request to Strategic Sam. Strategic Sam approves the request and sets Vendor Vinny as the owner of the project.
Strategic accounts project:	Junior Jim creates a Strategic Accounts request, SA01, providing information for the only tab that he has access to, the Summary tab. The request is automatically assigned the Strategic Accounts security policy and Jim cannot change it.

Summary

- Anyone can create a request for a trade show or a strategic accounts project.
- Anyone can be the recipient of a trade show request, and anyone can be assigned to a trade show project.
- Only users with roles from the Strategic Accounts security policy can work on strategic accounts projects.

Chapter 11. Setting Up Alerts

Alerts are notifications of important events or actions that users need to take regarding a project or approval. An alert could remind you that a program or project is running behind schedule or over budget, or that there is a project that needs your approval.

Users receive alerts in two ways:

- In Marketing Operations: when you receive an alert through Marketing Operations you go to the Alerts page to view it.
- In email: when you receive an alert through email, it goes directly to the Inbox of your mail application.

There are two types of alerts: Event-triggered alerts and alarms.

IBM Unica Marketing Operations sends these alerts at different, configurable frequencies.

About event-triggered alerts

These alerts are messages sent to interested parties in response to system events. For example, if someone creates an approval and specifies you as the Approver, the system sends you an alert with a link to the approval.

When template developers create project templates, they can customize the text of the project alerts. And if you configure custom permissions for the tabs of a project template, the system filters alerts appropriately. For example, if some project participants do not have access to the **Attachments** tab, the sytem does not send them alerts about attachments.

IBM Unica Marketing Operations sends event-triggered alerts almost immediately. When the event occurs (such as a user submits an approval request), Marketing Operations adds it to a queue. At a specified interval, Marketing Operations picks these events off a queue and sends out alerts. You can control this polling interval using the parameter under **Settings > Configuration > Marketing Operations > umoConfiguration > notifications** called `notifyEventMonitorPollPeriod`. By default, this option is 33 seconds. That means every half-minute, Marketing Operations picks up the events that occurred in that last half-minute and sends out alerts.

For more information on setting this option, see the *IBM Unica Marketing Operations Installation Guide*.

About alarms

An alarm is any alert not driven by a single, specific event. Alarms usually involve the relationship of an object (such as a task or project) to time, or another object.

For example, to determine whether to send a reminder about an approaching task deadline, IBM Unica Marketing Operations must determine the current date, compare it to the task scheduled dates, check how many days in advance the customer has set reminders, and then determine whether to send a reminder for that task.

Marketing Operations must run through all objects, and perform these checks, periodically. By default, the polling period which the system does these alarm checks is once every 24 hours. You can configure this on an object-by-object basis, using the following configuration parameters under **Settings > Configuration > Marketing Operations > umoConfiguration > notifications**.

- **> approval**: `notifyApprovalAlarmMonitorPollPeriod`
- **> project**: `notifyProjectAlarmMonitorPollPeriod`
- **> asset**: `notifyAssetAlarmMonitorPollPeriod`

For more information on setting these options, see the *IBM Unica Marketing Operations Installation Guide*.

Alerts and date types

When setting up default alerts, an administrator can set notifications for targeted dates, forecast dates, or both.

There are five alerts for targeted dates:

- A workflow task is targeted to start within n day(s)
- A workflow task is targeted to end within n day(s)
- A workflow milestone is targeted to end within n day(s)
- A workflow task is overdue according to targeted dates (alerted at most for n day(s))
- A workflow task is late according to targeted dates (alerted at most for n day(s))

And there are another corresponding five alerts for forecast dates:

- A workflow task is forecasted to start within n day(s)
- A workflow task is forecasted to end within n day(s)
- A workflow milestone is forecasted to end within n day(s)
- A workflow task is overdue according to forecasted dates (alerted at most for n day(s))
- A workflow task is late according to forecasted dates (alerted at most for n day(s))

These settings are in the **Projects | Reminders** section of the **Default Alert Subscriptions** screen.

How IBM Unica Marketing Operations determines the alert sender

When IBM Unica Marketing Operations sends an email alert, the email address of the sender is the first valid address of the following.

1. Email address of the person who initiated the action that triggered the alert
2. Email address for the owner of the object
3. Email address used as the value for `notifyDefaultSenderEmailAddress` under **Settings > Configuration > Marketing Operations > umoConfiguration > email**.

If none of these email addresses are valid, Marketing Operations issues a warning (to the log file) and does not send an email alert.

About setting default alert subscriptions

As an administrator, you can configure which object access roles should receive which alerts. The IBM Unica Marketing Operations objects for which you can can set up default alert subscriptions are the following.

- Projects
- Requests
- Programs
- Approvals
- Assets
- Invoices
- Accounts
- Plans
- Marketing objects; each marketing object has its own alert subscription section

Default subscriptions are set up by object access role (referred to on the Default Alert Subscriptions page as "member type"). For example, you could specify that some alerts be sent to project owners and project participants, but not project requesters, whenever a new member is added to a project.

Users see the default subscriptions when they open a program, project, or project request, click the communications icon in the Marketing Operations toolbar, and select **Subscribe to Alerts** from the drop-down menu.

Notes on setting default alert subscriptions

When you work with the the **Default Alert Subscriptions** page, note the following.

- Remember, you are creating a default setting. If users have permission through the security policies, they can change these default settings for each program, project, or project request.
- When you modify default alert subscriptions, it does not affect existing items; it affects only objects created after your modifications.

User overrides of default alert subscriptions

Users can subscribe to alerts within the following objects.

- Programs
- Projects
- Requests
- Marketing Objects

This allows them to control the alerts that they or members of their team receive, regardless of the default subscriptions that may have been set for the particular object type.

To set default alert subscriptions

1. Select **Settings > Marketing Operations Settings > Default Alert Subscriptions**.

The **Default Alert Subscriptions** page displays a list of all alerts, grouped by object type.

2. Configure which object access roles should receive which alerts by selecting the appropriate checkboxes.
3. Click **Save Changes**.

Default Alert Subscription page

The page is divided into sections for projects, requests, programs, approvals, assets, invoices, accounts, and plans. Additionally, there is a section for each marketing object type defined in the system. There are two subsection types.

- **Change Tracking**: all objects contains a list of system actions that happen within that specific area of IBM Unica Marketing Operations. For example, **A new project is created from a request** appears in the change tracking subsection of projects.
- **Reminder**: some objects contains a list of reminders for certain points in the life of an object. For example, **A project is 3 days late** appears in the reminder subsection of projects.

Changing the alerts refresh interval

By default, IBM Unica Marketing Operations updates the alert count every three minutes (180 seconds). You can change the default to any value you wish by editing the `alertCountRefreshPeriodInSeconds` parameter under **Settings > Configuration > Marketing Operations > umoConfiguration > notifications**.

Decreasing the refresh interval may have performance implications in a multi-user environment.

Customizing attributes and tabs for an alert

As an administrator, you can customize the locale, subject, header, footer, and message text for event-triggered alerts. You can customize alerts based on events for the entire system, or for a selected template. For example, you can customize the alert that is sent out whenever a program is started. Alternatively, you can customize the alert for one specific program template only, such as the **Tradeshow** sample template.

When you add attributes and links to system tabs, they are displayed as system-defined tags. When the alerts are sent out, the system replaces the tags with the values appropriate for the object.

About adding attributes

You can insert standard planning object attributes or system attributes related to an event. You can add attributes for the subject, body, header, and footer.

About adding links to system tabs

You can provide a link to any system tab of the planning object. The email message then contains a link directly to the selected tab for the planning object. For example, when a project is started, the notification could include a link to the workflow tab of the project.

In templates, you can add links to system tabs for the subject, body, header, and footer. At the system level, you can add system tab links only in the subject and body (not in the header and footer).

To customize an alert

1. Determine whether to customize an alert system-wide, or for a particular template only.
   - To customize an alert system-wide, click **Customize Alerts** from the **Other Options** section in the **Administrative Settings** page.
   - To customize an alert for a particular template, select a template on the Template Configuration page, then select the **Customize Alerts** tab of the template.

   The system displays the Customize Alerts page.
2. Select a locale in the **Locale** field.

   Note: If your system supports multiple languages and/or locales, we recommend you set custom text for each supported locale, for each alert you customize.
3. Select an object in the **Planning Object** field.

   If you are configuring a template, this field may be disabled. For example, if you are working with a project template, **Project** is selected in this field and you cannot select anything else.
4. Select an event in the **Alert Event** field.
5. Enter text for the subject and message of the alert. Optionally, enter text for the header and footer of the alert.
6. Optionally, specify attributes and links to tabs for the subject, body, header, or footer.

   Note the following.
   - Available attributes and tabs are displayed in the tabs located on the right side of the **Customize Alerts** page.
   - Click **Get Alert Details** and **Get Header and Footer** to retrieve the current or default text for the alert and the header and footer, respectively.
   - If you are using detailed task alerts, you can customize the alert header and footer only for workflow task alerts.
   - If you are customizing alerts system-wide, you cannot add links to system tabs in the header and footer.
7. After you have completed the customization for the alert, click **Save Changes** in each section where you made changes to save the alert.

Customize alerts page

This page contains the controls to set custom messages for system events that trigger alerts. It is broken into two sections: **Customize notification** and **Customize header and footer**.

Customize notification

The top area of the page contains the controls to customize the notification itself.

Field	Description
Locale	Select the locale for the custom text. Add text for each supported locale. If your system supports multiple languages and/or locales, we recommend you set custom text for each supported locale, for each alert you customize.
Planning Object	Select the object for which the custom text applies.
Alert Event	Select the event for which the custom text applies.
Get Alert Details	Fetches the current or default text for this alert.
Subject	Contains the subject for the alert. Enter or replace text, attributes, and links to system tabs to change. In some cases, the page contains two subject boxes: one each for personalized and general text.
Body Message	Contains the message text for the alert. Enter or replace text, attributes, and links to system tabs to change. In some cases, the page contains two message boxes: one each for personalized and general text.
<< and >> buttons	Move selected attributes and system tabs into or out of text boxes.
Attributes andTabs	Select either **Attributes** or **Tab** to add system attributes or links to system tabs to the subject or message text.

Customize header and footer

The bottom area of the page contains the controls to customize the message header and footer.

Field	Description
Locale	Select the locale for the custom text. Add text for each supported locale. If your system supports multiple languages and/or locales, we recommend you set custom text for each supported locale, for each alert you customize.
Get Header & Footer	Fetches the current or default text for the header and footer of the alert.
Header	Contains the heading text for the alert. Enter or replace text to change.
Footer	Contains the footer text for the alert. Enter or replace text, attributes, and links to system tabs to change to change.
<< and >> buttons	Move selected attributes and system tabs into or out of text boxes.
Attributes and Tabs	Select either **Attributes** or **Tab** to add system attributes or links to system tabs to headers and footers, such as the date of the alert.

General and personalized text boxes

The number of text area fields depends on the selected event. Some events trigger different messages based on users' access level; others do not.

For example, when a project is started, the system sends out the same alert to all affected users. However, when a workflow task is assigned to a user, the system sends out a special message to the assignee (referred to as the **personal** message), and a general message to all other affected users.

If the selected event does not have any associated personal message, the **Customize Alerts** page displays two text boxes for the message: **Subject** and **Body Message**. If the selected event has exclusive and general messages, the **Customize Alerts** page displays four text boxes: **Subject (General)**, **Subject (Personalized)**, **Body Message (General)**, and **Body Message (Personalized)**.

Example of a custom alert

In this example, we construct a custom alert when a new project is created from a request.

1. Navigate to the Customize Alerts screen.

   Locale: English (or choose your locale)

   Planning Object: Request

   Alert Event: A project request is submitted
2. Click **Get Alert Details** in the Customize Alerts section.
3. Delete the default subject and body text and use the attributes and tabs lists to construct the following subject and message.

   Subject

   <attribute>Logged in User</attribute> would like you to approve the request, <attribute>Request Name With Code/</attribute>

   Body Message

   Hello <attribute>Recipient</attribute>,

   Your approval is needed to start this project. This request was created on <attribute>Created Date</attribute>.

   You can approve the project here: <tab link="summary">Summary tab for the project</tab>
4. Click **Save Changes** in the Customize Alerts section.

Assume that Connie Contact submits a request to Mary Manager. Mary receives the following alert:

```
Connie Contact would like you to approve the request, "July Magazines (TRS100)"
Hello Mary Manager,
Your approval is needed to start this project. This request was created on
June 15, 2008.
You can approve the project here: Summary tab for the project.
```

Chapter 12. Setting Up Assets

IBM Unica Marketing Operations provides centralized management, secure storage, and web-based access for digital assets. In Marketing Operations, you store your assets in libraries, which have the following characteristics.

- An asset library is the highest level organizational structure in the digital asset repository.
- You can access libraries and add assets to the libraries (if your Marketing Operations administrator granted you permission in the security policy assigned to the asset).
- You can organize assets using folders.
- You can view all the assets that you own.
- If you do not own an asset, you can view it when it has a status of finalized.
- You must have administrative access to Marketing Operations to create a library.

You can view assets in a library either as a list (Asset List) or as thumbnails (Asset Thumbnails). By default, IBM Unica Marketing Operations displays assets in a list view when you select an asset library.

Table 39. Asset views

View	Description
Asset List	Displays the assets in the library, listed alphabetically in ascending order. You can change the sort order by clicking the **Name** column. You can also sort by any other column by clicking that column to toggle between ascending and descending sort.
Asset Thumbnails	Displays a thumbnail image for each asset in the library. Note that you can upload a thumbnail image for an asset when you add the asset to the library.

To create a library

As an administrator, you must create the libraries where users store assets. You cannot delete or move a library after you create it.

1. Log into IBM Unica Marketing.
2. Select **Settings > Marketing Operations Settings**.
3. Click **Asset Library Definitions**.
4. Click **Add a Library**.

   The New Library page appears.
5. Enter a name and description for the library. For example, you could name your library Brand Materials and describe it as the location where all images and documents related to brand management reside.
6. Select the security policy you want the library to use in the **Security Policy** field.

   Note the following:

   - Only users in the chosen security policy can access the library.

- All folders and assets in a library have the same access control rules specified in this security policy.
- If you want to have different permission apply to a specific set of documents, you should create a library for those documents.

7. Click **Save Changes.**

   Your library appears in the list of libraries.

Disabling and enabling libraries

To disable a library, click **Administration > Asset Library Definitions**, and click the **Disable** link next to the library. To enable it again, click the **Enable** link.

When you disable a library:

- Only administrators can edit a disabled library (by clicking the grayed out link to the library).
- Users cannot access the disabled library for any purpose. They cannot view or edit assets in that library or browse to the library to create project attachments or add approval items.
- If there is a link in an alert or email message to an asset in a disabled library, users cannot access the asset from the link.
- If an asset in a disabled library is also an attachment in a project or approval, users can access the asset from the project or approval.
- If an asset in a disabled library is also an attachment in a project or approval, users can access the asset from the project or approval.

Chapter 13. Setting up Accounts

A top-level account represents a specific corporate General Ledger (GL) account that is established by a finance department for the purpose of tracking and controlling expenditures and cash flows for a certain area of the business.

IBM Unica Marketing Operations breaks down accounts into top-level accounts and subaccounts. Subaccounts display under the parent or top-level accounts on the **Accounts Definitions** page. Subaccounts belong to their parent accounts for organizational purposes only; subaccount financial information does not roll up to parent accounts. Functionally, top-level and subaccounts are identical.

Key capabilities related to accounts include the following.
- Defining a hierarchy of accounts and subaccounts.
- Funding or allocating money to the account at the beginning of a time period, typically a year, which can be further seperated into weeks, months, or quarters.
- Tracking estimated and actual withdrawals from those accounts, by time period.

About account administrators

As an account administrator, you may also be a member of the Finance/Accounting department, and be responsible for setting up the accounting framework to track marketing budgets and expenditures. Or, you might be a a member of the Marketing department who is primarily responsible for reporting marketing spend details to the Finance/Accounting department within that framework.

The responsibilities of an account administrator include the following.
- Defining accounts and subaccounts.
- Funding the top-level accounts; that is, entering the top level budget numbers into each account for each time period.
- Assigning account owners to monitor and manage the accounts on an ongoing basis.

Note: An account administrator must be set up as an IBM Unica Marketing Operations administrator to be able to perform all of these tasks.

About account owners

An account owner is typically a mid- to high-level marketing manager who is responsible for managing the budget for a particular business area. In particular, they are responsible for tracking expenditures vs. budgets and cash flows to ensure that their business area is not overdrawn.

The responsibilities of an account owner include:
- Monitoring account levels and status to ensure they are not forecasted to be overdrawn and that balances remain positive (via a combination of alerts, views, and reports).
- Communicating/transferring account activity details back to corporate accounting personnel and systems.

Account owners do not have permission to create or fund subaccounts; these permissions belong to the administrator. This division allows the option of separating accounting functions from marketing functions.

About enabled vs. disabled acounts

Accounts can exist in one of two states: enabled or disabled. For example, you may want to set up an account for the future, before you are ready to start using it. IBM Unica Marketing Operations administrators can toggle the state of any account at will.

- Enabled accounts appear as account options (in the **Source Account** field) for project and program budget line items
- An account that is enabled when invoice or budget line items are linked to it is still active for those line items even if the account is disabled. No new line items can be linked to the disabled account, however.
- Disabled accounts cannot be selected for invoice items or for project and program budget line items.
- Disabled accounts are grayed out on the **Account Definitions** page.
- You can add a subaccount to a top-level account that is disabled. When you are ready to use the account, however (at the beginning of a new fiscal year/period, for example), you must enable it.

To create an account

IBM Unica Marketing Operations administrators can add accounts. You can add either a top-level account or a subaccount. You add subaccounts to an existing account, creating an organizational hierarchy. For example, if you have a top-level account set up to fund marketing efforts in the Northeast United States, you may decide to set up a subaccount for efforts in New York specifically.

1. Select **Settings > Marketing Operations Settings**.
2. In the **Root-Level Object Definitions** section, click **Account Definitions**.
3. Perform one of the following actions:
   - To add a top-level account, click **Add a Top-Level Account**.
   - To add a subaccount, click the **Add** link that is located to the right of the account to which you want to add the subaccount.

   The **Account Properties** page appears.
4. Complete the fields in the **Basic Info** section.
5. Optionally, enter account budget information for each month in the **Budget** table.
6. Click **Save Changes** to save the changes to the account.

Your account appears in the disabled state on the **Account Definitions** page. A subaccount appears below the top-level account to which it belongs.

To add or remove account owners

When you first create an account, you are automatically added as the owner of the account. This topic describes how to add and remove account owners.

1. Navigate to the account you wish to edit.
2. Click **Add/Remove Members** below the **Team Members** field.

3. To add a new member:
   a. Select a user in the **Folders** section.
   b. Click the right-pointing arrows to add the user to the **Selected Team Members** field.

      When you add a team member to the **Selected Team Members** field, they automatically become an owner of the account. This allows them to view and edit the account.
4. To remove a member:
   a. Select a user in the **Selected Team Members** field.
   b. Click the left-pointing arrows to remove the user.
5. Click **Save Changes** to save your changes or **Cancel** to cancel your changes.

To enable or disable an account

As an administrator, you can enable or disable an account. Account owners who are not administrators do not have this capability.

1. Select **Settings > Marketing Operations Settings**.
2. In the **Root-Level Object Definitions** section, click **Account Definitions**.
3. Perform one of the following actions:
   - To enable an account, click the grayed out **Enable** link, located to the right of the account or subaccount that you want to enable.
   - To disable an account, click the **Disable** link.

Accounts reference

Use the Accounts screen to add or edit a top-level account. The screen is split into two sections, basic information and budget information.

Account basic information

The **Basic Info** section contains the following fields.

Field Link	Description
Account Name	A unique, text identifier for the account. This is a required field.
Description	An optional description for the account. This description appears on the Accounts list page.
Team Members	List of owners for the account. By default, the creator of the account is listed as an owner. This is a required field.
Add/Remove Members	Displays a screen for adding and removing account owners.
Account Number	A unique, alphanumeric identifier for the account. Spaces are not permitted. This is a required field.
Security Policy	The security policy for the account. Only users in this security policy can access the account. This is a required field.

Account budget information

The **Budget** section contains cells for each month in a three-year period. IBM Unica Marketing Operations tallies the amounts up to the appropriate quarter, and totals the account funds per calendar year.

You have the option of entering an account budget for three years: the current year and the upcoming two years. These years will appear in the **Account Summary For** drop-down list on the **Summary** tab for the account.

Note: If budget or invoice line items draw from the account in other years, those years will also appear on the drop-down list.

Chapter 14. Defining Lists

There are several areas in IBM Unica Marketing Operations where an administrator can populate or define list values, or options, that a user will choose from.

List types

The following table describes the areas for which an administrator can define these options and where users encounter them in IBM Unica Marketing Operations.

Table 40. List types

List type	Description	Location
Business Areas	An area of business to which a plan can belong.	When users add a plan, they have the option of choosing a business area from a drop-down list on the Add a Plan or Edit Plan Summary pages.
Program Areas	A unit that groups one or more programs in a plan. Program areas are especially useful when allocating funds to a related group of programs that are linked to the plan.	When users add a plan, they have the option of choosing a program area from a drop-down list on the Add a Plan or Edit Plan Summary pages. The user is required to select at least one program area.
Cost Categories	A category that helps to define budget or invoice line item costs.	When users enter/edit an invoice or budget line item, they select a cost category from a drop-down list on the Edit Invoice/ Program/Project line Items page.
Vendors	The name of the business from whom an invoice line item was purchased.	When users enter/edit an invoice line item, they select a vendor from the Vendor Name field on the Add an Invoice page.
Non-work Day Types	Categories for your organization's non-work time. For example, national holidays, corporate off-sites, or Company holidays.	When users add a project or task, they can choose to schedule work during organizational non-work dates.
Roles	Roles make it easier to assign people to tasks. **Note:** These are functional roles, as opposed to security roles that determine access to various areas of the Marketing Operations interface.	When users add a project, they can assign people to functional roles or roles to tasks.
Workflow Milestones	Milestones that can be added to a workflow.	Users can select from the list when specifying a milestone.

List properties screen

Each list type has a screen where you define the entries for the list. Each screen contains the following fields:

Field	Description
Description	Enter a description of the list type. If you do not enter a description, Marketing Operations provides a default description.
Display	Select Code-Name or Name-Code from the drop-down list to specify whether you want your list options to display by code number followed by name, or by name followed by code number.
Storage Location	Displays the name of the database table where the values for this list are stored.
New or Selected Item	Enter the name and code of the list option. For example, you might call the first option you create for the Business Area Travel and assign a code of 01 to it. The code must be unique. You must click **Accept** to add the list option. It appears in the List Items field when you do so.
List Items	This field is populated with any list options already created. Select one or more items in this field and click the Enable, Disable, or Remove button to the right of this field.

This screen also contains buttons for enabling, disabling, and removing list entries:

Button	Description
Disable	Click if you want to keep the list option (for possible future use, for example), but do not want it to appear on a list. The item will be grayed out in the List Items field, but will not appear in one of the area's drop-down lists. If you create a list definition, use it, and later disable it, the list definition is still in use for the object you chose it for, but is unavailable for future use. For example, if you create cost category 001 and select it for an invoice line item, but later disable cost category 001, it will no longer appear as a cost category option for use in future invoice line items.
Enable	Click if you want the definition to appear as an option in the drop-down list. You can enable a previously disabled option. Enabled options are in regular font. By default, newly created options are enabled.
Remove	Click if you want to remove a selected option from the List Items field and from the drop-down list. An option that is being used in a workflow cannot be removed.

To add options to a list

As an administrator, you can populate the drop-down fields from which the user chooses a value for the following areas: Business Areas, Program Areas, Cost Categories, Vendors, Roles, Non-working Date Types, and Workflow Milestones.

1. Click **Settings > Marketing Operations Settings**.

   The Administrative Settings page appears.

2. Click **List Definitions**.

   The List Definitions page appears.
3. Click the area to which you would like to add list definitions.
4. Fill in the fields on the screen.
5. Click **Save** to save your changes.

To enable, disable, or remove a list definition

After you create a list definition, it appears as an option in the drop-down list from which the user can choose.

As the needs of your organization change, you can remove list definitions that are no longer needed. When you remove a list definition, it is permanently deleted. If you want to add the option again, you must recreate it.

You can also disable options, so that you can keep the list definition for possible future use while preventing it from appearing on a list. When the option is needed again, you enable it.
1. Follow the procedure described in "To add options to a list" on page 154.
2. From the List Items field, select one or more values to enable, disable, or remove.
3. Click **Disable**, **Enable**, or **Remove** according to your needs.
4. Click **Save** to save your changes.

About localizing lists

When you save a list, the system generates a properties file for the appropriate list. The file name is `<list_category>_<default_locale>.properties`. For example, if you edit the list of business areas, and your default locale is en_US, the system generates the following file:

BUSINESS_AREAS_en_US.properties

The file is saved to the directory specified in the `managedListDir` parameter under **Settings > Configuration > Marketing Operations > umoConfiguration > attachmentFolders**. A code from underlying table is a key, and name from underlying table is a value.

Translate the list and create a properties file for each IBM Unica Marketing Operations supported locale.

You can localize user roles, as well. The localized roles for a project template are based on the localization done for the Roles list.

Note: The Plan administrator must be using the default locale to create and update list definitions.

Chapter 15. Advanced Topics

This section provides information about performing technical tasks for advanced customization of the IBM Unica Marketing Operations interface. The following topics are included.

- Populating Summary tab fields programmatically
- Writing custom validation plug-ins

For information about services you can use to integrate Marketing Operations with other applications, see the *Integration Module* guide.

Populating fields programatically

You can set up any field on the Summary tab to populate programmatically based on the values in other fields. To specify that you want a field to populate programmatically, you must specify attribute of type **External Datasource**.

Once you specify that the attribute type is **External Datasource**, a Generate button appears next to the field. When a user clicks the Generate button, IBM Unica Marketing Operations accesses a program that you specify. The program can be a web service (located anywhere) or a java program running on the same server as Marketing Operations.

For example, you could call a program that generates a job number based on values entered in the business unit and product fields.

To specify the program, you must include the <servicedetails> tag within the <column> tag. The <servicedetails> tag can contain the following tags.

Tag	Description
type	Enter either javaclass or webservice as the type.
classname	Enter the serverside custom java class in this tag. This custom class must implement the com.unicacorp.common.template.IdGenerate interface. If you specify a value in this tab, you do not need to specify the <methodname> tag.
param	This tag has the following attributes. • parameter name • type • valuecolumn You must define all parameters in the same map file, such as projectatts.product_id. The order that you specify the parameters must match the order that the program expects them.
wsdl	Enter the webservice definition file located on the Plan server or the URL to the file in this tag.
methodname	Enter the webservice method name in this tag. If you specify the <classname> tag, you do not need to specify this tag.

Examples of programmatically populating fields

The following is an example of how you can use the `<servicedetails>` tag to set up a server-side Java class application implementing the `com.unicacorp.common.template.IdGenerate` interface and pass a product ID.

```
<servicedetails>
     <classname>com.unicacorp.uap.webservice.FormIdGenImpl
     </classname>
     <param name="param1" type="string"
     valuecolumn="dyn_projectatts.product_id" />
</servicedetails>
```

Similar to the previous example, the following shows how to configure the same behavior, but with a generic Java class that does not implement `com.unicacorp.common.template.IdGenerate` interface.

```
<servicedetails>
     <classname>com.unicacorp.uap.webservice.FormIdGenImpl
     </classname>
     <param name="param1" type="string"
     valuecolumn="dyn_projectatts.product_id" />
     <methodname>getFormId</methodname>
</servicedetails>
```

The following is an example of how you can use the `<servicedetails>` tag to set up a web service application and pass a business unit ID.

```
<servicedetails>
     <wsdl>
          http://rd600:7004/axis/services/Service?wsdl
     </wsdl><!--wsdl>
          C:\\Product\\Plan\\webapp\\conf\\Service.wsdl
     </wsdl -->
<methodname>getFormId</methodname>
<param name="param1" type="string" valuecolumn="dyn_projectatts.business_unit_id" />
<param name="param2" type="string" valuecolumn="dyn_projectatts.prog_type_id" />
</servicedetails>
```

Server-side ID generation and project attribute validation

You can set up a template to use custom routines to generate project IDs and validate values on the Summary tab including the generated ID when the project, plan, or program is saved.

To define a custom ID generator, you must write a Java class that implements the **com.unicacorp.uap.project.helper.PidGenerate** interface. Within the template definition, you can then specify your Java class name as the value for pidGenClass attribute and any desired prefix to append to that generated ID using the pidprefix attribute. In a similar manner, you can also define custom routines to validate attribute values of a project, plan, or program. To define a custom validation routine, you must write a Java class that implements the following interface: **com.unicacorp.uap.common.template.IdValidate**.

Within the project template definition, you can then specify your Java class name as the value for validateClass attribute.

Example Server-side ID generation

For example, assume that you have an offer marketing object template, and you need to generate custom codes for all the offers created from this template. The codes must have the following characteristics:

- The first code should be 900001.
- The range of codes is between 900001 and 999999.
- Codes should be generated sequentially.

To do this, perform the following steps:

1. Create a custom Java implementation named `CustomComponentPidGenerateImpl.java`.

   Note the following:

   - This implementation uses a file, `IDRange.properties`, to hold the minimum and maximum values for the custom IDs.
   - It uses a database table, `CUST_GENIDS`, to hold the current value of the custom ID for each object type that uses the class to generate custom IDs.
2. Compile the class. The compiled class is named `CustomComponentPidGenerateImpl.class`.
3. Copy the class file into the following folder under your Marketing Operations installation:

   `\unwar\WEB-INF\classes\com\unica\uap\component\helper`
4. Create a file named `IDRange.properties`, and add the following text to this file:

   `mktOBJId.min=900001`

   `mktOBJId.max=999999`
5. Copy this file to the `\unwar\WEB-INF` folder under your Marketing Operations installation.
6. Using your database management program, create a table named `CUST_GENIDS`, with the following columns:

   - `ENTITY_NAME; string, length 50`
   - `ID_VALUE; integer (all in file format)`
7. Restart your web server.
8. Create or edit a marketing object template that can use this custom class, and navigate to its template properties page.
9. In the **ID Generation Class** field, specify the custom class using the fully qualified class name or the canonical name, as shown here:

   `CustomComponentPidGenerateImpl`

   When you create the first **customIDs** marketing object, note that its ID is 900001.

Grid validation

IBM Unica Marketing Operations exposes a validation interface you can use to write custom validation plug-ins. A sample plug-in is provided, which uses the **Validator** interface.

IBM the following validator out-of-box.

com.unicacorp.uap.grid.validation.plugin.GridValidatorPluginImpl

In most cases, you should be able to use the plug-in provided, rather than needing to write your own custom validator.

The Grid tab uses the validator to validate input data. When you add a grid tab to a project template, one of the options you can specify is a validator.

Note the following:
- Rule files should be in a specific format. When importing a rules XML file, it is validated against the XML schema **gridrules.xsd**.
- Typically, a rule is specific to a form, as the underlying table structure is tightly bound with rules. Hence, we recommend you use a rule with only one (grid) form.
- Though Marketing Operations ships with a few sample rules (range check, begins with, check unique), we expect the customer (or a consultant) to create and import custom rules files.

Validator interface

The validator interface exposes the following functions.

Function	**Description**
init(config:GridConfig)	This function initializes the validator.
process(rulesToExecute:Validator.RulesEnum)	This function executes the validation rules. The rulesToExecute parameter determines which type of rule validation plug-in executes. It is an enumerated value that can have the following values: • allRules • gridRules • rowRules
destroy()	This is a destructor for the object, and does garbage collection.

Out-of-box IBM Unica Marketing Operations provides a sample validator, `RangeCheckRule.java`. This object takes a grid as input, then iterates through all of the grid's records validating against rules defined in an XML file.

Validation rules

The validator works by invoking a series of rules, and comparing the input data against the rules. Each rule is an executable Java file that implements the **Rule** interface.

The validation plug-in supports two types of rules.
- ROW: row-level rules are executed first
- GRID: grid-level rules are executed after row-level rules.

All the rules are fired when the grid data is saved. However, all row-level rules are fired first, and then grid-level rules are fired. Rules are fired in the order they are declared in the rules file.

Data validation rules file structure

A validation rules file is an XML file containing one or more rules. Each rule can contain the following tags.

Table 41. Tags for validation rules files

Tag	Description
rule	Begins the rule and sets the rule type, which can be either **ROW** or **GRID**.
name	The name of the rule.
desc	A text description of the rule.
enable	A boolean value for enabling or disabling the rule: • **false**: the rule is disabled • **true**: the rule is enabled
applies-to-tvc-id	The internal name of the TVC component for which the rule applies. To apply the rule to multiple grids, use a separate applies-to-tvc-id tag for each grid component. This tag is optional; if omitted, the rule is applied to all grids on the specified form.
class	The Java class containing the commands for processing the rule. To use the sample range check rule, you enter: `com.unicacorp.uap.grid.validation.rule.basic.RangeCheckRule`
set-property	The set-property tag passes parameters to the rules. Each rule can contain zero or more set-property tags.

IBM Unica Marketing Operations ships with four sample rule types.

Table 42. Sample validation rules

Rule	Description

BeginsWithRule	Ensures the text column being validated begins with the specified character. Set the following properties: **beginCharacter**, and **column**. For example:
	`<set-property property="beginCharacter" value="A"/>`
	`<set-property property="column" value="dyn_vendors.Name"/>`
	
	This rule checks the **Name field** (stored in the **dyn_vendors** database table) to make sure that it begins with the letter **A**. **Class name**: `com.unicacorp.uap.grid.validation.rule.basic.BeginsWithRule`

UniqueCheckRule	Ensures the column being validated does not contain duplicate values. Set the **column** property. **Class name**: `com.unicacorp.uap.grid.validation.rule.basic.UniqueCheckRule` **Note:** This rule is always applied across the entire grid, even if you specify **ROW** validationType.

Table 42. Sample validation rules (continued)

Rule	Description

RangeCheckRule	Ensures the integer column being validated falls within the specified range. Set the following properties: **minValue**, **maxValue**, and **column**. For example:
	`<set-property property="minValue" value="1"/>`
	`<set-property property="maxValue" value="999999"/>`
	`<set-property property="column" value=`
	`"dyn_vendors.numEmployees"/>`
	
	This rule checks the **numEmployees** field (stored in the **dyn_vendors** database table) to make sure that it is between 1 and 999,999. **Class name**: `com.unicacorp.uap.grid.validation.rule.basic.RangeCheckRule`

DateCheckRule	Ensures the date column being validated falls within the specified range. Set the following properties: **greaterThan**, **lessThan**, and **column**. For example:
	`<set-property property="greaterThan" value="12/31/1999"/>`
	`<set-property property="lessThan" value="Today"/>`
	`<set-property property="column" value=`
	`"dyn_vendors.invoiceDate"/>`
	
	This rule checks the **invoiceDate** field (stored in the **dyn_vendors** database table) to make sure that it is not before the year 2000. Optionally, you can set the **dateFormat** property. If you add this property, dates must be entered in the specified format. You can set the following format values: dd/MM/yyyy, MM/dd/yyyy, dd/MM/yy, MM/dd/yy, yyyy-MM-dd, yyyy.MM.dd **Class name**: `com.unicacorp.uap.grid.validation.rule.basic.DateCheckRule`

Validation rule example

This section describes how to create a rule, import it into Marketing Operations, add it to a template, and test it on a grid.

1. Create an XML file to contain one or more rules.
2. Upload the rules file into Marketing Operations:
   a. Click **Administration** | **Template Configuration** | **Rules**.
   b. Click **Add Rules Definition**.
   c. In the **Update Rule** dialog box, type in a name and specify a file.
   d. Click Continue to add the rules file to Marketing Operations.
3. Assign the rules file to a tab on a template.
   a. Click **Administration** | **Template Configuration** | **Templates**.
   b. Choose a template, and navigate to the **Tabs** tab.
   c. Add a tab that contains the Vendors grid, and add the rules file to this tab.

      (The **Data Validation Class** field gets populated by the system when you select a rules file.)
4. Create an object from the template, and test the rule by attempting to enter invalid data into the **empNum** field:

   We attempted to enter an invalid value (5000) in the **# of Employees** field, and received an error message, and were prevented from saving this grid row. This indicates the rule is working as designed.

Sample Java interface

This section describes the following:

- Interface - IdValidate
- Interface - IDGenerate
- Custom ID generator

Interface - IdValidate

```
package com.unicacorp.uap.common.template;
import java.util.HashMap;
/**
This is an interface to be implemented by the end user of a Marketing Operations
system for the purpose of validating system generated id values
as per business logic.
Implementations of this Interface are called by the Marketing Operations Server.
*/
public interface IdValidate
{
/**
Returns true if the specified attribute values are valid.
*
* @param id - current project or program id.  This will be the
       value if it is new project/program
* @param values - This is a set of name/value pairs, referring to
         a current database connection, the appropriate
         template id and another HashMap that contains
         name/value pairs, corresponding to the fields and
         values on the screen.
* @return true       - if it is valid; otherwise returns false or throws
        exception.
* @throws      com.unicacorp.uap.user.IdValidateException
*         Should contain a message value that is meaningful
         about what went wrong.
*/

public boolean isValid(int id, HashMap values) throws
  IdValidateException;
/**
  The name of the hashkey in the HashMap passed to IdValidate.isValid(..)
  that refers to a current database connection to the Marketing Operations
  system tables.
  This connection is available for use to implementations of this
  interface.
*/
  public final String PLAN_DB_CONNECTION = "dbconnection";
  /**
   * The name of the hashkey in the HashMap passed to
   idValidate.isValid(..) that refers to the id of the related
   template.
   */
 public final String OBJECT_TEMPLATE_ID = "templateid";
  /**
   * The name of the hashkey in the HashMap pass to
   * IdValidate.isValid(..) that refers to another Hashmap which
   * contains name/value pairs. The name corresponds to a field on
   * the screen for project/program and the value corresponds to the
   * user entered text or selection.
   */
 public final String OBJECT_ATTRIB_VALUES = "attributeValues";
 }
```

Interface - IDGenerate

```
package com.unicaorp.uap.common.template;
import java.util.HashMap;
/* This is an interface to be implemented by the end user
* of a Marketing Operations
* system for the purpose of generating unique Project Code (PIDs). The intent
* is to allow users to attach to existing enterprise systems to help make
* project IDs meaningful in their enterprise.
*
* Implementations of this Interface are called by the Marketing Operations Server.
* It is the responsibility of the Marketing Operations Server
* to assure that there is
* only one ID being generated at a time. When implementation of this
* interface are called, they can assume that there are no other IDs
* that are being generated concurrently.
*/
public interface IdGenerate {
    /**
  * Returns a string code used to define a Project object with Marketing Operations
  *
  * @param uniqueId - This is an integer value that is generated by
  *  the Marketing Operations system. This is guaranteed to be unique across
  *  the system; hence, if the project ID returned is the string
  *  representation of this integer, it will be a unique
  *  Project Code (PID).
  *
  * @param values - This is a set of name/value pairs, referring to the current
  *  database connection, appropriate template id, code prefix,
  *  request flag, and another HashMap that contains name/value
  *  pairs, corresponding to the fields and values on the screen.
  *
  * @param uniqueChecker - An implementation used to verify the uniqueness of
  *  of ID's generated by this instance.
  *
  * @return    - A string that represents the ID of the project we are
        creating.
  *
  * @throws com.unicacorp.uap.user.IdGenerateException
  *  Should contain a message value that is meaningful about
  *  what went wrong
*/
    public String generateID (int uniqueId, HashMap values, IdUniqueChecker
  uniqueChecker)
  throws IdGenerateException;
 /**
  * The name of the hashkey in the HashMap passed to IdValidate.isValid(..)
  * that refers to a current database connection to the Marketing Operations
  * system tables.
  * This connection is available for use to implementations of this interface.
  */
 public final String PLAN_DB_CONNECTION = "dbconnection";
 /**
  * The name of the hashkey in the HashMap passed to IdValidate.isValid(..)
  * that refers to the id of the related template.
  */
 public final String OBJECT_TEMPLATE_ID = "templateid";
 /**
  * The name of the hashkey in the HashMap passed to IdValidate.isValid(..)
  * that refers to the desired string prefix to prepend the generated id.
  */
 public final String OBJECT_CODE_PREFIX = "pidprefix";
 /**
  * The name of the hashkey in the HashMap passed to IdValidate.isValid(..)
  * that refers that indicates whether the calling object is a request.
  */
```

```
 public final String OBJECT_REQUEST_FLAG = "flagprojectrequest";
 /**
  * The name of the hashkey in the HashMap pass to IdValidate.isValid(..)
  * that refers to another Hashmap which contains name/value pairs. The name
  * corresponds to a field on the screen for project/program and the value
  * corresponds to the user entered text or selection.
  */
 public final String OBJECT_ATTRIB_VALUES = "attributeValues";
 /**
  * Default start plan code start number
  */
 public final int PLAN_CODE_SUFFIX_START = 1000;
 /**
  * Default start program code start number
  */
 public final int PROGRAM_CODE_SUFFIX_START = 1000;
 /**
  * Default start project code start number
  */
 public final int PROJECT_CODE_SUFFIX_START = 1000;
 /**
  * Default start rfq code start number
  */
 public final int RFQ_CODE_SUFFIX_START = 1000;}
```

Custom ID generator

```
package com.unica.uap.component.helper;
import com.unicacorp.uap.common.db.*;
import com.unicacorp.uap.common.template.*;
import org.apache.commons.lang.StringUtils;
import java.io.File;
import java.io.FileInputStream;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.util.HashMap;
import java.util.Properties;

/**
* The Class CustomComponentPidGenerateImpl.
*/
public class CustomComponentPidGenerateImpl implements IdGenerate,
 IdUniqueChecker {
 /** The lower limit. */
 public static int LOWER_LIMIT = 0;
 /** The upper limit. */
 public static int UPPER_LIMIT = 0;
 static {
  Properties attrPro = new Properties();
  try {
   String planHome = System.getProperty("plan.home");
   System.out.println("planHome : " + planHome);
   File file = new File(planHome + "/unwar/WEB-INF/IDRange.properties");
   FileInputStream fi = new FileInputStream(file);
   if (fi != null) {
    attrPro.load(fi);
    String min = (String) attrPro.get("mktOBJId.min");
    String max = (String) attrPro.get("mktOBJId.max");
    LOWER_LIMIT = Integer.parseInt(min);
    UPPER_LIMIT = Integer.parseInt(max);
    System.out.println("Lower Limit :" + LOWER_LIMIT);
    System.out.println("Upper Limit :" + UPPER_LIMIT);
   } else {
    System.out.println("IDRange Property file can not be found");
    throw new RuntimeException("IDRange Property file can not be found");
   }
```

```
 } catch (Exception e) {
  e.printStackTrace();
  throw new RuntimeException("IDRange Property file can not be found");
 }
}
/**
 * The Constructor.
 */
public CustomComponentPidGenerateImpl() {
}
/**
 * Generate ID.
 *
 * @param uniqueChecker the unique checker
 * @param values the values
 * @param instanceId the instance id
 *
 * @return the string
 *
 * @throws IdGenerateException the id generate exception
 */
  public synchronized String generateID(int instanceId, HashMap values,
 IdUniqueChecker uniqueChecker) throws IdGenerateException {
 print("inside 'generateID' method");
 print("instanceId : " + instanceId);
 print("###################\n" + values + "###################\n");
 String prefix = (String) values.get("pidprefix");
 print("prefix : " + prefix);
 String templateid = (String) values.get("templateid");
 print("templateid : " + templateid);
 Connection con = (Connection) values.get("dbconnection");
 //int nextValue = -1;
 boolean isEmptyPrefix = false;
 try {
  if (StringUtils.isEmpty(prefix)) {
   isEmptyPrefix = true;
  }
  //GET THE CURRENT VALUE OF THE TEMPLATE ID - from CUST_GENIDS table
  String sqlString = "SELECT ID_VALUE FROM CUST_GENIDS WHERE ENTITY_NAME = ?";
  print("sqlString : " + sqlString);
  PreparedStatement ps = null;
  ResultSet rs = null;
  int cnt = 0;
  try {
   ps = new UAPSQLPreparedStatement(con, sqlString);
   UAPSQLUtils.setupPreparedStatement(ps, 1, templateid, "string");
   rs = ps.executeQuery();
   if (rs.next()) {
    cnt = rs.getInt(1);
   }
   print("current ID vlaue :" + cnt);
   UAPSQLUtils.closeResultSet(rs, ps);
  } catch (SQLException ex) {
   ex.printStackTrace();
   UAPSQLUtils.closeResultSet(rs, ps);
   throw new RuntimeException(ex);
  } catch (Exception exception) {
   exception.printStackTrace();
   UAPSQLUtils.closeResultSet(rs, ps);
   throw new RuntimeException(exception);
  }
  if (cnt == 0) {
   //insert first new record for the template id into table
   cnt = LOWER_LIMIT;
   String sqlInsertStr = "INSERT INTO CUST_GENIDS values (?,?)";
   print("sqlInsertStr : " + sqlInsertStr);
```

```
    ps = new UAPSQLPreparedStatement(con, sqlInsertStr);
    ps.setString(1, templateid);
    ps.setInt(2, cnt);
        }

        else if ((cnt >= LOWER_LIMIT) && (cnt < UPPER_LIMIT)) {
    //increase the counter and update the row for the template id
    cnt++;
    String sqlUpdateStr =
     "UPDATE CUST_GENIDS SET ID_VALUE= ? WHERE ENTITY_NAME = ?";
    print("Update : " + sqlUpdateStr);
    ps = new UAPSQLPreparedStatement(con, sqlUpdateStr);
    ps.setInt(1, cnt);
    ps.setString(2, templateid);
   } else {
    print("Current ID is out of range, ID Range [" + LOWER_LIMIT +
     "-" + UPPER_LIMIT + "]");
     //throw exception that can not generate id, limit is over
     throw new IdGenerateException(
      "Current ID is out of range, ID Range [" + LOWER_LIMIT +
      "-" + UPPER_LIMIT + "]");
        }
   //UAPSQLUtils.beginTransaction(con);
   ps.execute();
   //UAPSQLUtils.endTransaction(con, true);
   String pid = (isEmptyPrefix ? "" : prefix) + cnt;
   print("return from 'generateID'  method with pid : " + pid);
   return pid;
  } catch (Exception ex) {
   ex.printStackTrace();
   throw new IdGenerateException(ex);
  }
 }
 /**
  * Checks if is unique.
  *
  * @param values the values
  * @param Id the Id
  *
  * @return true, if is unique
  */
 public boolean isUnique(String Id, HashMap values) {
  print("inside 'isUnique' method");
  //provide actual implementation for uniqueness check
  return true;
  }
 /**
  * Print.
  *
  * @param str the str
  */
 private void print(String str) {
  System.out.println(str);
 }
```

Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information about the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan Ltd.
1623-14, Shimotsuruma, Yamato-shi
Kanagawa 242-8502 Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those websites. The materials at those websites are not part of the materials for this IBM product and use of those websites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
170 Tracer Lane
Waltham, MA 02451
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

All IBM prices shown are IBM's suggested retail prices, are current and are subject to change without notice. Dealer prices may vary.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at “Copyright and trademark information” at www.ibm.com/legal/copytrade.shtml.

Printed in USA