IBM Unica Campaign
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Data Migration Guide

IBM®

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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 you should gather

Before you contact IBM Unica technical support, you should 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" below.

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 each application's installation directory.

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).

1 Introduction to Data Migration in Unica Campaign

- Overview of data migration
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Overview of data migration

This section provides an overview of the data migration process for Campaign.

> For best results, engage with IBM Unica Consulting Services before performing any data migration tasks in Campaign.

What is data migration?

Data migration refers to the moving of data from a source version to a new target installation of Campaign in a different location. You migrate data by running a set of data migration scripts provided with your IBM Unica Marketing installation.

When you perform data migration, the configuration settings, files, and data are copied from your source Campaign system to the new target system. The data migration process does not modify any source data or configuration files.

For details on migration of specific object types, see the topic for each object type in the Data Migration Reference chapter.

Which versions of Campaign require data migration?

Data migration is required to move from Affinium Campaign 5.1+ or 6.x to Campaign. Before you can perform data migration, you must successfully install the new version of Campaign in a different location from your source version. For details, see the installation documentation. There is no option to perform an in-place upgrade from a pre-7.x version of Affinium Campaign to Campaign.

If your source version of Campaign is 7.x, you do not need to migrate your data to upgrade to Campaign. To upgrade from a 7.x source version to Campaign, perform an in-place installation of Campaign over your source version. There is no option to install an empty instance of Campaign and perform data migration of objects from Affinium Campaign 7.x.

What is data re-migration?

Data re-migration refers to the migration of the same object(s) from the source system to the target system multiple times. This process might be required if any objects (campaigns, sessions, flowcharts, or offers) cannot immediately be made production-ready in the new system, and must continue to operate and be modified in a source system until another data migration attempt is made. The migration of most content is one-time only (for example, users, groups, configuration, templates, table catalogs, and so on).

For details on re-migration of specific object types, see the topic for each object type in the Data Migration Reference chapter.

Re-migration modes

When you select an object for re-migration, you can choose one of the following modes:

- **Overwrite (replace)** — In this mode, if the selected objects already exist in the target system, they are updated, except if treatments for a re-migrated offer exist in the target system. If treatments exist in the target system for an offer, that offer will not be re-migrated and a warning is written to the migration log.

- **Skip (preserve)** — In this mode, only new objects are migrated. Objects selected for re-migration that already exist in the target system are not overwritten in the target system. This mode allows you to continue using the source system while you validate the target system. After you are sure that the target system is working, you can migrate any new objects to the target system before you take the source system offline.

> If an object selected for re-migration has been edited in the target system, changes to the object in the target system will be lost if the **Overwrite** mode is selected. To preserve these changes, select the **Skip** mode.

About the data migration stages

The Campaign data migration process consists of six distinct stages, each one executed by a separate script. The scripts are installed in the `tools/migration/5.1+To8.5` folder when you run the Campaign Utililty Tools installer. For details, see the `IBM Unica Campaign Installation Guide`.

For each partition in your environment, run the six scripts in sequence to migrate system table data and all of the corresponding underlying objects.

Before executing any of the scripts, you must understand the purpose of each stage of data migration, which scripts can be run multiple times, and so on.

Stage 2 can be run multiple times for the same partition, but not after Stages 3 or 4 have run. Alternatively, Stage 2 can be run from within Stage 5.

Stage 5 can be run multiple times for the same partition to re-migrate objects, but only after running Stage 4 and before running Stage 6.

All other stages can be run only once, except in the case where the script fails to complete. You should not run Stage 6 until you are sure you have successfully completed data migration for the partition.

The six stages are as follows:

- **Stage 1** — Setup
- **Stage 2** — Perform consistency checks
- **Stage 3** — Copy file system artifacts and system configurations
- **Stage 4** — Copy database artifacts
- **Stage 5** — Copy offer, campaign, and session artifacts
- **Stage 6** — Finish data migration and clean up temporary files

In addition to the default tasks provided in the data migration stages, Campaign provides a utility that allows you to customize the workflow of migration Stages 2–5 by adding or removing data migration tasks. For details, see Customizing Data Migration.

Data migration limitations

The Campaign data migration process has the following limitations:

- It does not support "in place" data migration; that is, data is not migrated within the same instance of IBM Unica Campaign. Use the data migration tool only if you have installed the new version of Campaign in a different location from your existing version.

- It does not copy database configuration from the source to the target system tables. In particular, the following configurations are not migrated:

  - Database-specific scaling and performance features (such as DB2 partitions).

  - Existing constraints/indexes on system tables in the source database. You must re-create the constraints/indexes manually if you want them in the target tables.

- It does not copy any folders other than those originally installed by a Campaign installation to `<CAMPAIGN_HOME>`/partitions/partition[n].

- It does not allow changes to the policy ID of objects between data re-migration runs. All objects will be migrated with the single policy ID chosen during Stage 1. For this reason, no changes should be made (directly or implicitly) to policy IDs assigned to various objects.

Some types of data, including object types, files, and configuration settings, also have specific migration limitations and requirements. For details, see the specific topics in the Data Migration Reference chapter.

System compatibility

Your source and target Campaign installations must match in the following ways:

- They must be installed on the same type of operating system.

- They must use the same database type and version for their system tables.

- Their database tables must be in the same database instance.

- They must be deployed on the same type of web application server.

If you need to change any of these components (for example, upgrade the database), you must perform the upgrade on the source system prior to beginning data migration, or after data migration is complete.

File system accessibility

The Campaign source file system must be visible from the target Campaign system. Therefore, either both versions of Campaign must be hosted on the same machine, or both the Campaign and Affinium Security Manager 5.1+/6.x root directories must be added as a shared drive/NFS mount on the machine where you run the IBM Unica Campaign data migration scripts.

System table accessibility and permissions

The Campaign system tables have the following accessibility and permission requirements:

- The target Campaign system tables must be in the same database and database server instance as the source Campaign system tables. That is, it must be possible to `SELECT` from the source tables and `INSERT` into the target tables.

- The database login you provide to the data migration scripts must be able to `SELECT` from the source system tables and `SELECT` from and `INSERT` into the target system tables. For example, on an Oracle database, the equivalent of a statement such as `GRANT SELECT ON UA_SrcTableName TO UC8DbUser` must be executed for all of the Campaign system tables (for example, `UA_Folder`) in the source Campaign system database before you perform data migration.

- The data migration tool creates temporary tables in the same schema as the system tables in the target partition you specify. These temporary tables are used throughout the data migration and are then dropped in the final step, after you have finished migrating all data for the selected partition. The database login you provide to the data migration scripts must have the same or greater privileges as the user who created the target Campaign system tables.

Knowledge requirements

The instructions in this guide assume that the person performing the data migration has an understanding of the following:

- General IBM Unica Campaign functionality and components, including the structure of the file system.

- The installation and configuration process for the source and target versions of Campaign.

- The installation and configuration process for the source version of Affinium Security Manager and for the IBM Unica Marketing Platform.

- The functionality and usage of Affinium Security Manager on the source system.

- How to manage configurations in IBM Unica Marketing Platform.

- The installation and configuration process for IBM Unica reporting, if you are using IBM Unica reports.

- Viewing and working with database tables.

Required upgrades and installations

You must perform the following tasks before migrating data to Campaign.

- **Upgrade to Marketing Platform** . To upgrade from Affinium Security Manager, you must first upgrade to Affinium Manager 7.5.1, and then upgrade to Marketing Platform. For instructions, see the *Marketing Platform Installation Guide*.

- **Install, deploy, and configure Campaign** . Install Campaign in a different location from your Affinium Campaign source system. For instructions, see the *Campaign Installation Guide*.

- **Install the data migration utilities.** For instructions, see the *Campaign Installation Guide*.

2 Preparing the Data Migration Environment

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Preparing the source and target systems

This section describes the tasks required for preparing the source and target systems for migrating data.

Install the required software versions

Before you can migrate data to Campaign, the following upgrades and installations must be performed:

- Upgrade from Affinium Security Manager to Affinium Manager 7.5.1 before upgrading to IBM Unica Marketing Platform. This is required because you can upgrade to IBM Unica Marketing Platform only from Affinium Manager 7.5.x. To upgrade from Affinium Security Manager, see the instructions for upgrading from 7.3.1 and earlier versions of Affinium Manager in the *IBM Unica Marketing Platform Installation Guide*.

- Upgrade from Affinium Manager 7.5.1 to IBM Unica Marketing Platform. For details, see the *IBM Unica Marketing Platform Installation Guide.*

- Install the Campaign target system in a different location from the source version. Ensure that the target system has full access to the source system. For details, see the *IBM Unica Campaign Installation Guide*.

- Install the data migration tools using the Campaign Utility Tools installer. For details, see the *IBM Unica Campaign Installation Guide*.

Map the system tables

1. Ensure that all of the system tables on the source system have been mapped, including any that have not been used.

2. Map all of the system tables on the target system.

   ☼ eMessage and Optimize tables can be left unmapped if eMessage and Optimize are not installed.

   For information on mapping tables, see the *IBM Unica Campaign Administrator's Guide*.

Create the required partitions on the target system

If your source system has multiple partitions, create the same number of partitions on the target system.

For information on creating and configuring multiple partitions, see the installation documentation.

Set environment variables

Edit the `setenv` file on the target system to set environment variables required by the data migration scripts. The `setenv` file is located in the `tools/migration/5.1+To8.5` directory in the path where you have installed the data migration tools on the target system.

☼ `YES` and `NO` values for environment variables must be entered in uppercase.

UNIX only: After editing the `setenv` file, run the file using the following command to set the variables:

`. ./setenv`

Environment variables required for data migration

The following environment variables must be set on the Campaign target system. Note that many of these variables are set automatically for you by the Campaign installer; however, you should review the `setenv` file prior to upgrading to verify that each setting is correct for your specific upgrade scenario. The instruction comments contained in the `setenv` file itself describe each setting and can help you complete any values relevant to your installation.

Variable	Description
UNICA_PLATFORM_HOME	Root directory of the IBM Unica Marketing Platform installation. Examples: **Windows** set UNICA_PLATFORM_HOME="C:\Unica\Platform" **UNIX** UNICA_PLATFORM_HOME='/Unica/Platform' export UNICA_PLATFORM_HOME
CAMPAIGN_HOME	Home directory of your IBM Unica Campaign installation. Examples: **Windows** set CAMPAIGN_HOME="C:\Unica\Campaign" **UNIX** CAMPAIGN_HOME='/Unica/Campaign' export CAMPAIGN_HOME
JAVA_HOME	Root directory of the JDK used by your Campaign installation. For WebLogic 10gR3 or higher, which uses JDK1.6, you must provide the `JAVA_HOME` path to JDK1.6; the upgrade tool utility fails if provided with a `JAVA_HOME` other than JDK1.6. Examples: **Windows** set JAVA_HOME="C:\Program Files\bea\jdk150_14" **UNIX** JAVA_HOME='/bea/jdk150_14' export JAVA_HOME

Variable	Description

LOG_TEMP_DIR	Directory where you want the data migration scripts to create log files. Examples:
	
	Windows
	
	`set LOG_TEMP_DIR=C:\temp`
	
	UNIX
	
	`LOG_TEMP_DIR='/var/tmp'`
	
	`export LOG_TEMP_DIR`

ERROR_MSG_LEVEL	Desired logging level. Valid values, listed from most to least verbose, are:
	
	`DEBUG`
	
	`INFO`
	
	`ERROR`
	
	`FATAL`

JDBCDRIVER_CLASSPATH	Full path for the JDBC drivers, including the complete .jar file filename. For both Weblogic and WebSphere, the path needs to include the `.jar` file. For DB2 9.1, you must specify `db2jcc.jar` and `db2jcc_license_cu.jar`.
MIGRATE_FLOWCHART_ TYPES	Types of flowcharts to migrate. Keep the default value set to `Batch`. Valid values are `"Batch"`, `"Event Processing"` and `"Batch,Event Processing"` (quotation marks are required for Event Processing). However, migration of event processing (i.e., interactive) flowcharts is not currently supported. These values are for future compatibility only.
IsPartitionsSupported	Indicates whether the source installation of Campaign supports partitions. Valid values are `YES` and `NO`.
IsSkipEnvironmentVars Prompt	For source installations of Campaign that do not support partitions, the `IsSkipEnvironmentVarsPrompt` indicates whether you want the Stage 1 script to prompt for the environment variables. Valid values are `YES` and `NO`. If set to `YES`, the Stage 1 script will not prompt for these values, and the default values will be used. If the `IsPartitionsSupported` variable is set to `YES`, this setting is ignored.

Variable	Description

STRING_MAP_INFO_FILE	Location of the locale-specific message mapping file. Examples:
	
	Windows
	
	`set STRING_MAP_INFO_FILE="C:\Unica\Campaign\tools\ migration\ 5.1+To8.5\stringsmap.xml"`
	
	UNIX
	
	`set STRING_MAP_INFO_FILE='\Unica\Campaign\tools\ migration\5.1+To8.3\stringsmap.xml'`
	
	`export STRING_MAP_INFO_FILE`

IGNORE_SES_TEMP_FILES	Indicates whether temporary session files (indicated by an underscore character at the beginning of the file name) will be copied. A `YES` setting specifies that these files will not be copied. The default value is `NO`.
SOURCE_SYSTEM_VERSION	Version number of your Campaign source system (for example, 5.2.2, 6.4.10).

Variable	Description

OFFER_VERSION_COUNT_
 	
SEPARATOR
	It is necessary to change this property only if your source system data uses the underscore character in offer codes or offer version codes. The default value is underscore (_). You can set this property to any character or character combination that is not used in either the offer codes or the offer version code values in the source system tables.
	
	Before using the data migration scripts, we recommend that you confirm in advance that the chosen separator character does not exist in the source system tables. The SQL statement in the following example for a DB2 database checks for the existence of the underscore character in offer codes and offer version codes:
	
	`SELECT COUNT(*) FROM UA_Offer WHERE`
	
	`OfferCode1 LIKE '%\_%' ESCAPE '\' OR`
	
	`OfferCode2 LIKE '%\_%' ESCAPE '\' OR`
	
	`OfferCode3 LIKE '%\_%' ESCAPE '\' OR`
	
	`OfferCode4 LIKE '%\_%' ESCAPE '\' OR`
	
	`OfferCode5 LIKE '%\_%' ESCAPE '\' OR`
	
	`VersionCode LIKE '%\_%' ESCAPE '\'`
	
	If the SQL example above returns no matching rows, then the default offer version count separator character may be used. If matching rows are found, then this statement should be modified to check for other characters until a suitable character is found.

PATH (all UNIX versions only)	Add the Campaign `bin` directory and the migration tools directory to the `PATH` variable. The following example shows the path with tools installed in a directory called Migration at the root directory:
	
	`PATH=${CAMPAIGN_HOME}/bin:/Migration/tools/migration/5.1+To8.5:${PATH}`
	
	`export PATH`

Variable	Description

LD_LIBRARY_PATH (Solaris only), LIBPATH (AIX only)	The LD_LIBRARY_PATH variable (Solaris) or LIBPATH variable (AIX) in the tools/migration/5.1+To8.5 directory should match the LD_LIBRARY_PATH or LIBPATH setting in the setenv file in the Campaign bin directory. Add the variable to the setenv file in the tools/migration/5.1+To8.5 directory and include the following:
	
	• Path to the Campaign bin directory
	• For Oracle only: ORACLE_HOME and ORACLE_BASE
	
	The following example shows the required LD_LIBRARY_PATH settings for a Solaris environment with an Oracle 10.2 database:
	
	`ORACLE_BASE=/opt/oracle10.2`
	
	`export ORACLE_BASE`
	
	`ORACLE_HOME=/opt/oracle10.2`
	
	`export ORACLE_HOME`
	
	`LD_LIBRARY_PATH=/Unica/Campaign/bin:/opt/oracle10.2/lib:/usr/lib`
	
	`export LD_LIBRARY_PATH`

JAVA_OPTIONS	Optional: Specifies the minimum and maximum heap memory to be assigned to Java Virtual Machine (JVM). This variable is disabled (commented out) by default. If you receive memory errors when running the data migration scripts, uncomment this variable and set it before rerunning the scripts. Example: `JAVA_OPTIONS="-Xms256m -Xmx512m"`
UNICA_ACSYSENCODING (for migrating non-ASCII data only)	Set to the value of the system_string_encoding property in the unica_aclsnr.cfg file on the source system.
NLS_LANG (for migrating non-ASCII data on Oracle databases only)	Set to AMERICAN_AMERICA.UTF8
DB2CODEPAGE (for migrating non-ASCII data on DB2 databases only)	Set according to the database settings on the target system.

Set database ID limits

To prevent ID conflicts, the range of IDs in the source and target systems must not overlap. IDs from the source system are copied over directly, and the data migration also creates some new objects that require IDs.

Set the database ID limits for each partition using the `internalIdLowerLimit` and `internalIdUpperLimit` properties on the Configuration page.

For information on setting configuration properties, see the installation documentation.

Guidelines for setting database ID limits

Follow these guidelines for data migration when setting the database ID limit properties for the source and target systems.

Source system

Property	Guidelines
`internalIdLowerLimit`	Optional
`internalIdUpperLimit`	This property must: • be higher than the lower ID limit; • be higher than the highest ID used in the source system tables; and • allow some unused IDs for new objects to be created (if the source system remains in use after initial data migration).

Target system

Property	Guidelines
`internalIdLowerLimit`	This property must be higher than the upper ID limit in the source system.
`internalIdUpperLimit`	Optional. If you set this property, it must: • be higher than the lower ID limit in the target system; • be higher than the highest ID that will be used in the target system tables; the default largest value (4294967295) is sufficient in most cases

Set code formats on the target system

Code formats for generated codes in the target Campaign system (cell codes, offer codes, and campaign codes) must be the same as, or compatible with, the generated code formats in your source Campaign installation.

☼ For Affinium Campaign 6.4 and previous versions, the default value of `cellCodeFormat` is `Annn`. If you are using this default value on the source system, make sure to change the value on the target system to `Annn` (the default value of `cellCodeFormat` on the target Campaign system is `Annnnnnnnn`).

Create required audience levels on the target system

All audience levels referenced in templates must first be manually created in the target Campaign environment. Follow these guidelines:

- Make sure that all necessary system tables are configured and mapped for each audience level before you move the templates to the target system.

- Set up the audience levels and their required database tables and table mappings to match the audience levels on the source system.

- If you have multiple audience levels mapped to the same contact or response history table, you must use views that contain only the rows used by the individual audience levels.

For information on creating audience levels, see the *Campaign Administrator's Guide*.

Create additionally tracked fields on the target system

The data migration scripts do not add user-defined additionally tracked fields to any database tables. Before performing data migration, you must ensure that all user-defined additionally tracked fields in the source system are defined in the target system. Create and map the fields on the target system using the names and types that match those on the source system.

For more information on additionally tracked fields, see the *Campaign User's Guide*.

Verify system table compatibility

Ensure compatibility between the Campaign system tables on your source and target systems:

- User-defined fields in the Campaign system tables on your target system (for example, in your contact history, response history and product tables) must be compatible with the equivalent fields in your source Campaign installation. They must have the same data type and width.

- The contact history and response history tables on your target system must contain either user-defined columns or a column named `UserDefinedField`.

- The login that you specify in your application server's JDBC data source configuration (either in Weblogic's JNDI specification, or directly using the input prompts in the data migration scripts) must be able to access the system tables in both your source installation and your Campaign target installation.

Create the pathmap file (Campaign 6.2.x or earlier versions only)

If your source version of Campaign is 6.2.x or earlier, you must create a `pathmap` file to map Campaign directories from your source system to your target system.

Each line in the `pathmap` file contains two directory paths (source system path and target system path) separated by a single `<tab>` . Save the file with the file name `pathmap` (no extension) to the `<CAMPAIGN_HOME>`/partitions/partition[n]/conf directory on your target system.

Entries required in the pathmap file

The `pathmap` file must contain the following entries:

```
UNICA_UDICATDIR <partition home>/<partition[n]>/catalogs

UNICA_ACCUBEDIR <partition home>/<partition[n]>/cubes

UNICA_ACFTPDIR <partition home>/<partition[n]>/ftp

UNICA_ACSEGDIR <partition home>/<partition[n]>/segments

UNICA_ACTPLDIR <partition home>/<partition[n]>/templates

UNICA_CAMPAIGNROOTDIR <partition home>/<partition[n]>/campaigns

UNICA_SESSIONROOTDIR <partition home>/<partition[n]>/sessions

UNICA_UDICATDIR <partition home>/<partition[n]>/catalog

UNICA_ACLOGDIR <partition home>/<partition[n]>/logs
```

If you have subdirectories under the above directories, you must list them as well. For example, if you have `Q1` , `Q2` , `Q3` and `Q4` directories under `UNICA_CAMPAIGNROOTDIR`, add the following entries to the `pathmap` file:

```
<UNICA_CAMPAIGNROOTDIR>/Q1 <partition
home>/<partition[n]>/campaigns/Q1
```

```
<UNICA_CAMPAIGNROOTDIR>/Q2 <partition
home>/<partition[n]>/campaigns/Q2
```

```
<UNICA_CAMPAIGNROOTDIR>/Q3 <partition
home>/<partition[n]>/campaigns/Q3
```

```
<UNICA_CAMPAIGNROOTDIR>/Q4 <partition
home>/<partition[n]>/campaigns/Q4
```

Database driver requirements for migrating data from 32-bit to 64-bit versions

If you are moving from a 32-bit to a 64-bit version of IBM Unica Campaign, your environment must meet the following requirements:

- The database drivers for your Campaign data sources must be 64-bit.

- All relevant library paths (for example, startup or environment scripts) must correctly reference the 64-bit versions of your database drivers.

Preparing a distributed environment on multiple operating systems

If your Campaign web application, Campaign analytical server (containing the Campaign listener), and the Marketing Platform are installed on different operating systems (for example, Campaign web application and Platform on Windows and Campaign analytical server on UNIX), you must perform additional steps to prepare your environment for data migration. These steps vary depending upon whether your source system has been upgraded from Affinium Security Manager 6.x to Affinium Manager 7.x.

For source systems with Affinium Security Manager 6.x

1. Install the data migration tools on the Campaign analytical server target system. For information on installing the data migration tools, see the *IBM Unica Campaign Installation Guide*.

   ☼ All data migration tasks are performed on the Campaign analytical server. The migration tools are not required on the Campaign web application server.

2. Copy the database templates for all of the database types in your Campaign environment (for example, `DB2Template.xml, OracleTemplate.xml, SQLServerTemplate.xml`) from the `<CAMPAIGN_HOME>/conf` directory on the Campaign web application target system to the `<CAMPAIGN_HOME>/conf` directory on the Campaign analytical server target system. These template files are required for migration Stage 3.

3. Make the following changes to the `setenv` file in the `<MIGRATION_TOOLS_HOME>/tools/migration/5.1+To8.5` directory:

   a. Set the `JAVA_HOME` property to the JRE on the Campaign analytical server target system (`<CAMPAIGN_HOME>/jre`).

   b. Set the `UNICA_PLATFORM_HOME` property to the same directory as `CAMPAIGN_HOME`.

4. Create an `authorization/confdata` directory under the `<CAMPAIGN_HOME>` directory on your Campaign analytical server target system.

5. Copy the `affinium_config.xml` file from Affinium Security Manager to the `<CAMPAIGN_HOME>/authorization/confdata` directory that you created on the Campaign analytical server target system. This file is required for migration Stages 1 and 3.

For source systems with Affinium Manager 7.x

1. Use the `configTool` utility on your Marketing Platform system to export the `<PLATFORM_HOME>/conf/Manager_config.xml` file to a different location.

   This step is required because the migration stages overwrite your desired Platform settings with the settings in the `affinium_config.xml` file. (You will add the `affinium_config.xml` file to your Campaign analytical server in a later step.) To restore your desired configuration settings after completing data migration, you will need to import your saved `Manager_config.xml` file.

   For information on using the `configTool` utility, see the *IBM Unica Marketing Platform Administrator's Guide*.

2. Install the data migration tools on the Campaign analytical server target system. For information on installing the data migration tools, see the *IBM Unica Campaign Installation Guide*.

   ☼ All data migration tasks are performed on the Campaign analytical server. The migration tools are not required on the Campaign web application server.

3. Copy the database templates for all of the database types in your Campaign environment (for example, `DB2Template.xml, OracleTemplate.xml, SQLServerTemplate.xml`) from the `<CAMPAIGN_HOME>/conf` directory on the Campaign web application target system to the `<CAMPAIGN_HOME>/conf` directory on the Campaign analytical server target system. These template files are required for migration Stage 3.

4. Make the following changes to the `setenv` file in the `<MIGRATION_TOOLS_HOME>/tools/migration/5.1+To8.5` directory:

   a. Set the `JAVA_HOME` property to the JRE on the Campaign analytical server target system (`<CAMPAIGN_HOME>/jre`).

   b. Set the `UNICA_PLATFORM_HOME` property to the same directory as `CAMPAIGN_HOME`.

5. Create an `authorization/confdata` directory under the `<CAMPAIGN_HOME>` directory on your Campaign analytical server target system.

6. Obtain a copy of the `affinium_config.xml` file from Affinium Security Manager (this file does not exist in Affinium Manager 7.x). This file is required for migration Stages 1 and 3.

   You can obtain this file from a backup of Affinium Security Manager 6.x or from Unica technical support. Alternatively, you can create your own file, but you must ensure that it is compatible with Affinium Security Manager authentication. For more information, see the Affinium Security Manager 6.x documentation.

7. Copy the `affinium_config.xml` file to the `<CAMPAIGN_HOME>/authorization/confdata` directory that you created on the Campaign analytical server target system.

   ☀ You can ignore the settings in the `affinium_config.xml` file; after data migration, you will overwrite them with the contents of your saved `Manager_config.xml` file.

3 Migrating Data

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Before you migrate data

This section describes the procedures for migrating your existing data from any 5.1+ to 6.x version of Campaign to Campaign. These tasks assume that you have successfully completed the installation tasks detailed in the installation documentation, and that you are aware of data migration concepts and prerequisites as described in Overview of data migration and Preparing the source and target systems.

In addition, we recommend that you read the following before migrating data:

- All of the topics in this section.

- Topics in the Data Migration Reference chapter that describe the expected results for the types of data you want to migrate.

About web application server status during data migration

Follow these guidelines for the web application servers during data migration:

Source system

The source system web application server can be in any state (running or shut down) during the data migration process. However, if the source system is running and available for use, any changes made by users to source system data during data migration may not be migrated correctly. Moreover, it is possible that changes made to the source system may cause data to be migrated in an inconsistent state to the target system. Therefore, the best practice is to shut down the source system web application server and listener to prevent use during data migration. If this practice is not followed, IBM Unica technical support may not be able to properly support the migrated system without starting the data migration process again with a clean target system.

Target system

The target system web application server must always remain running and its listener should be stopped. This server provides access to the JDBC database drivers used for data migration. Also, the Marketing Platform web application must be deployed and active during data migration, as some of the configuration information from the source system is stored on the Configuration page in Marketing Platform.

About migrating multiple partitions

Follow these guidelines for migrating multiple partitions:

- If your source system has multiple partitions, make sure that you have set up the same number of partitions on the target system.

- For each partition in your environment, run the six scripts in sequence to migrate system table data and all of the corresponding underlying objects. When you start the data migration at Stage 1, you must choose an initial partition to migrate. If only one partition exists, it is automatically selected.

- You cannot change the name of a partition while migrating data; the partition name must match on the source and target systems.

- You must complete the data migration for each partition before beginning the process for another partition; you cannot resume an incomplete data migration after you have switched to a new partition.

About the data migration log

After you run each data migration stage, the scripts write processing details, warnings, or errors to a log file named `migration.log`. You set the log's location and level of verbosity in the `setenv` script file, as specified in Set environment variables. When a stage completes, it displays the location of the log file.

Details from each stage are appended to the log after the details for the previous stage. If you prefer that details for each data migration stage are captured in a separate file, rename the log file with a different name after each stage completes, so that logging details from the next data migration stage you run are captured in a new log file without the details from the previous stage.

For example, after you run Stage 1, rename `migration.log` to `stage1.log`. Logging details for Stage 2 will be written to `migration.log`.

Cancelling data migration

You can abort the data migration at any prompt during any stage by typing `abort`.

Run the data migration scripts

Run the data migration scripts to migrate Campaign data and files to the target system.

The data migration scripts are located in the `tools/migration/5.1+To8.5` directory in the path where you have installed the data migration tools on the target system. The script files are named for the stage they execute, as follows:

- `stage1`
- `stage2`
- `stage3`
- `stage4`
- `stage5`
- `stage6`

The scripts prompt you to provide passwords for your web application server or JDBC database login for the target system. Passwords are not saved by data migration scripts.

Guidelines for running the data migration scripts

The following guidelines apply to all of the data migration scripts:

- The data migration scripts create files that are required for the migration to execute correctly. These files are located in the same directory that you specified for the `migration.log` file using the `LOG_TEMP_DIR` parameter. Do not delete any of the files in this directory during the migration process.

- UNIX only: Run the data migration scripts as root to ensure access to files with multiple levels of ownership or permissions.

- UNIX only: Verify that the path to the shell specified at the start of each data migration script is correct for your system. If it is not correct, modify it before running the script.

- After running any of the data migration stages, we recommend that you check the `migration.log` file for errors, even if no errors are reported.

- If any errors are reported, correct the errors and re-run the script.

Stage 1 – Setup

The `stage1` script performs the following actions:

- Gathers information about the source and target system

- Sets up database connections to the source and the target system

- Creates or updates temporary migration tables in the target system

Guidelines for running Stage 1

Run the `stage1` script only once for each partition that you are migrating. However, if the script fails to complete, you must run it again.

> After Stage 1 of the data migration is complete, do not change any Marketing Platform user names or Campaign system table mappings. Any users that are added to Marketing Platform after you run Stage 1 will not be known to the data migration scripts in any later stage. Stage 1 constructs an internal mapping of user names to user IDs, which is then referenced by all later data migration stages. New users added after running Stage 1 may cause errors in data migration, for example, if objects owned by a new user are migrated during later stages.

Information required for Stage 1

This section describes the information that the `stage1` script prompts you to provide. In most cases, the script attempts to detect the information, and either presents options for you to select or, if it cannot find the infomation, prompts you to provide it.

Information required	Description
Root installation directory of target system	The root installation directory of the target system (`PLATFORM_HOME`). The script provides a default based on the value of `PLATFORM_HOME` you set in the `setenv` script.
Partition details	**Partition** — The script attempts to detect the partitions in the source Campaign system. If only one partition is defined, it is automatically selected for data migration. If more than one partition is defined, you must choose an initial partition to migrate.
	Security policy for PolicyID fields
	Default user name for CreateBy fields
	Date for CreateDate fields

Information required	Description
Connection details to source system tables database	The script prompts you to select a connection method to the system tables in both the source and target systems.
	If you use WebLogic as the web application server, you can select WebLogic or JDBC. If you use WebSphere as the web application server, you must select JDBC.
	Select one of the options:
	WebLogic — If you select this option, the script prompts you to enter the following details:
	• Host name — for example, `mymachine` • Port number — for example, `7001` • Web application server username and password • Full path (including filename) to the Web application server's library `.jar` file — for example: `C:\bea\weblogic81\server\lib\weblogic.jar`
	JDBC — If you select this option, the script prompts you to enter the following details:
	• Driver class name — for example, `oracle.jdbc.driver.OracleDriver` • URL including host, database name, and port — for example, `jdbc:oracle:thin:@machinename:1521:orcl` • Database username and password
Source system tables information	Catalog/database (depending on your database system's terminology) — the script detects the available options for you to select.
	Schema/owner (depending on your database system's terminology) — the script detects the available options for you to select.
Target system tables information	Catalog/database (depending on your database system's terminology) — the script detects the available options for you to select.
	Schema/owner (depending on your database system's terminology) — the script detects the available options for you to select.
Configuration file directory on the source system	The full path to the directory containing the `affinium_config.xml` file on the source system. Do not include the file name. For example, `C:\Affinium\authorization\confdata`

Information required	Description
Campaign installation directory on the source system	The path to the Campaign installation directory on the source system. For example, `C:\Affinium\Campaign`
Partition's parent directory on the source system	The path to the selected partition's parent directory on the source system. For example, `C:\Affinium\Campaign\partitions`
Database ID limits for the source and target systems	Enter new values or change existing values for lower and upper ID limits in your source system. If during data migration you define ID range values that are different from existing values in the source system's configuration, you must manually update your source system's configuration to correspond with the new ID range values you specified during data migration. Otherwise, if the source system remains in production, new objects created there might be assigned IDs that fall outside the specified range, and might not be migrated by the data migration process. The data migration scripts do not automatically modify any source data or files, including configuration files. For instructions on setting database ID limits, see Set database ID limits.

Stage 2 – Consistency checks

The `stage2` script performs the following actions:

- Performs database and file system consistency checks on the source system and reports errors.

- Validates internal ID ranges on both the source and the target system. IDs from the source system are copied over directly, and the data migration also creates some new objects requiring IDs. For that reason, the ID range for both systems must not overlap. For details, see Set database ID limits.

- Checks if the `AssignOffer` macro exists in any stored derived fields. Fields that use this macro cannot be migrated (the `AssignOffer` macro is no longer supported).

- Identifies whether the audience levels from the source have also been created and mapped on the target, including the same fields and data types.

- Identifies whether there is more than one row in contact or response history having the same combinatioin of `CustomerID`, `OfferTrackID`, and `ContactDate`. Redundant rows must be removed from such the contact and response history tables.

- Identifies whether the source system has contact and response history records populated from session flowcharts. Session flowcharts must be removed before migrating data.

- Identifies whether the target system is empty (clean).

Guidelines for running Stage 2

Follow these guidelines for running Stage 2:

- Stage 2 can be run multiple times for the same partition, but not after Stages 3 or 4 have run. Running Stage 2 after Stage 3 or Stage 4 will cause the Clean Target Checks task to fail. If you need to run Stage 2 multiple times, you must run it after Stage 1 and before Stage 3. Alternatively, you can run Stage 2 from within Stage 5, but you cannot run Stage 2 explicitly after you have run Stage 3 or Stage 4.

- You may need to make adjustments to your source database system or file system to correct any dependency violations or other errors noted in the log after each run of Stage 2.

Stage 3 – File system artifacts

The `stage3` script performs the following actions:

- Copies artifacts on the source file system to the target system.

- Copies configuration settings from the following files to the Configuration page on the target system:

  - `affinium_config.xml`

  - `dbconfig.lis`

  - `unica_aclnsr.cfg`

  - `unica_acsvr.cfg`

The following files from pre 6.4.x versions of Campaign are not migrated:

- `udisvr.cfg`

- `Campaign_config.xml`

☼ The stage3 script does not migrate any folders other than those originally installed by a Campaign installation in *<CAMPAIGN_HOME>*`/partitions/partition[n]`.

Prerequisites for Stage 3

Ensure that the following prerequisites are met before you run the `stage3` script:

- The target server partition must be free of any Campaign objects (for example, folders, campaigns, or offers) before you run the `stage3` script. If any Campaign data exists in the partition, remove it before running the `stage3` script.

- In the `dbconfig.lis` file on the source system, remove any entries for databases that are not supported by Campaign, or for which there are no database templates on the target system. These entries will cause Stage 3 to fail if they are not removed. (If you are migrating from version 5.2.1, you must remove the entry for Redbrick.) The data source templates on the target system are located in the <CAMPAIGN_HOME>/conf directory.

Guidelines for running Stage 3

Run the `stage3` script only once for each partition that you are migrating. However, if the script fails to complete, you must initiate it again. Manual intervention might be required before you can re-run this script successfully after a failure.

Information required for Stage 3

The `stage3` script prompts you for the following information:

- Passwords for your web application server or JDBC database login for the target system. Passwords are not saved by data migration scripts.

- Name of the source version's system tables data source (for example, `AC_SYSTEM_TABLE`).

Stage 4 – Database artifacts

The `stage4` script performs the following actions:

- Migrates data that is not associated with a specific campaign or session from the source system table database into the target system database.

- Migrates as a whole all stored objects referenced by flowcharts in campaigns (custom macros, triggers, and stored derived fields) from the source system to the target system. These objects cannot be individually specified for data migration.

Guidelines for running Stage 4

Run the `stage4` script only once for each partition that you are migrating. However, if the script fails to complete, you must initiate it again. Manual intervention might be required before you can re-run this script successfully after a failure.

☼ If you create any new custom macros, triggers or derived fields after you run the `stage4` script, you must manually recreate these objects in the target system.

Stage 5 – Offer, campaign, and session artifacts

The `stage5` script performs the following actions:

- Migrates any campaigns or sessions that you specify, including their associated offers.

- Allows you to choose whether to migrate the associated contact history and response history data for campaigns.

- Allows you to select, for the item type selected, whether you migrate:

  - Individual items — the script prompts you to enter the item name if you choose this option.

  - A folder of items — the script prompts you to enter the folder name if you choose this option. All contents of its subfolders are also migrated.

  - All available items of this type

- Allows you to specify an individual flowchart to re-migrate.

Prerequisites for Stage 5

Ensure that the following prerequisites are met before you run the `stage5` script.

- If you choose to migrate the contact history and response history data, ensure that you have created and mapped all audience level tables in both the source and target systems.

- If any of the flowcharts you are migrating has flat files as a data source, the flat files must be manually copied from the source system to the target system in the appropriate corresponding location.

- Before migrating sessions, remove all contact processes from session flowcharts.

- Make sure that contact history or response history tables from your source system do not contain multiple records with the same customer, date, and offer. For more information, see Contact and response history.

- Make sure that the default audience level Customer is mapped in the target system, even if the Customer audience level is not used in the source system.

- The `stage5` script does not verify that campaign and flowchart names contain only legal characters. Prior to version 6.2.x, Affinium Campaign allowed campaign and flowchart names to contain some characters that are now restricted. See the *IBM Unica Campaign User's Guide* for details about special characters and ensure that campaign and flowchart names contain only legal characters before migrating these objects.

Guidelines for running Stage 5

Follow these guidelines for running the `stage5` script:

- Stage 5 can be run multiple times for the same partition to re-migrate objects or to migrate new objects.

- Each time this script finishes migrating a selected item or group of items, you can choose whether to migrate more data. You can repeat the data migration steps within the script for all items that you want to migrate, before the script completes.

- Migrating contact and response history may take a long time depending on the amount of data to be migrated. You may want to migrate the campaign and its flowcharts without contact history first and subsequently migrate just the contact and response history.

Information required for Stage 5

The `stage5` script prompts you for the following information:

- Passwords for your web application server or JDBC database login for the target system. Passwords are not saved by data migration scripts.

- For migrating contact or response history data — a user name with administrative privileges in Campaign. If you are running the `stage5` script for multiple partitions, make sure that you enter a user name that has administrative privileges for the partition you are currently migrating.

Stage 6 – Finish data migration

The `stage6` script cleans up and removes temporary data migration tables from the target system.

> When you run Stage 6, temporary tables created during data migration are deleted. Therefore, you cannot perform further data migration on the same partition after running Stage 6. To perform a new cycle of data migration, you must start again from Stage 1, on a clean installation of Campaign.

Prerequisites for Stage 6

Run Stage 6 only if you are completely finished with all data migration and re-migration for the current partition and no longer need any of the partition's content from the source system.

> If any of the campaigns or sessions fail to migrate in Stage 5, the `stage6` script will fail to execute. If you want to execute Stage 6 without taking further action on any failed campaigns or sessions, change the status of taskid 501 in the `MigConfig_Status` table from `0` to `1`.

Import the Platform configuration file (distributed environment on multiple operating systems with Affinium Manager 7.x only)

After completing data migration, if your Campaign web application, Campaign analytical server, and the Marketing Platform are installed on different operating systems (for example, web application and Marketing Platform on Windows and Campaign analytical server on UNIX), and your source system has been upgraded to Affinium Manager 7.x, use the Marketing Platform `configTool` utility to import the `Manager_config.xml` file that you exported before performing data migration.

For information on using the `configTool` utility, see the *IBM Unica Marketing Platform Adminstrator's Guide*.

Verify data migration

After executing the six data migration stages, verify that the data migration was completed successfully.

1. Restart the Campaign server(s).

2. Log in to the target installation of Campaign and verify that you can perform the following tasks:

    •   View and open flowcharts and process boxes

    •   Test run flowcharts

About migration results

Most of the objects that you migrate to Campaign successfully do not require further action to complete migration. However, you should be aware of the exceptions listed in the following topics.

For more information about migrating these and other Campaign objects, see Data Migration Reference.

Objects that may require manual steps to complete migration

•   Control groups

•   Dimension hierarchy tables

•   Flowcharts that create cubes or strategic segments

- Files or scripts invoked by triggers
- The following processes:
    - Contact
    - Create Seg
    - Optimize
    - Response
    - Snapshot
    - Track
    - Any process that uses the `AssignOffer()` macro

Processes that are migrated but not supported

The following processes are migrated as part of flowcharts in which they exist, but are no longer supported in Campaign. You must manually delete these processes from flowcharts before they can be run successfully in the new version of Campaign.

- Decision
- eMessage
- EventIn
- EventOut
- Recommend

Processes that are not migrated or supported

- Evaluate
- SelectOpt
- TestOpt

Configuration settings files from pre-6.4.x versions of Campaign that are not migrated

- `Campaign_config.xml`

4 Data Migration Reference

Introduction

This section provides details about the requirements and limitations for migrating specific types of data in Campaign, including object types, files, and configuration settings. Before migrating data from your source system to the target system, refer to the topics in this section to gain an understanding of the expected results for the type of data that you want to migrate.

Campaigns

Migration

Campaigns can be migrated individually or as part of a specified folder. Associated offers and flowcharts are migrated as part of each campaign. When you migrate a campaign, you can choose to include the associated contact and response history, or you can migrate the contact and response history at a later time. For details, see Contact and response history.

Re-migration

Campaigns can be re-migrated individually or as part of a specified folder. Associated offers and flowcharts are re-migrated as part of the campaign. Flowcharts and offers can be re-migrated as well.

When you re-migrate campaigns, you can specify how objects already in the target system are handled by choosing either **Overwrite** or **Skip** mode. Campaigns that are re-migrated into an existing folder ignore any specified security policy during migration and use the security policy of the destination folder specified in the target system.

Any new flowcharts in the target system that do not exist in the source system are not affected or changed when the campaign is re-migrated.

Cells

Cells are migrated and re-migrated with processes in flowcharts. For details, see Processes.

Configuration settings

Migration

Settings from the following configuration files are migrated to the Configuration page in Marketing Platform:

- `affinium_config.xml`
- `dbconfig.lis`
- `unica_aclnsr.cfg`
- `unica_acsvr.cfg`

The following files from pre 6.4.x versions of Campaign are not migrated:

- `udisvr.cfg`
- `Campaign_config.xml`

Re-migration

Configuration files cannot be re-migrated.

Contact and response history

Migration

You can select whether to migrate contact history and response history when you select campaigns for migration. You can only migrate both contact history and response history together; you cannot migrate only one and not the other.

You should be aware of the following limitations when migrating contact and response history:

- **Sessions** — IBM Unica Campaign does not allow migration or re-migration of contact or response history records from sessions. Before migrating or re-migrating sessions to Campaign, you must remove any contact processes from session flowcharts.

- **Date and time fields** — Contact and response history records in Campaign now contain both date and time fields; contact and response history records from pre-7.x versions of Campaign contain the date but not the time. The combination of offer, date, and customer must be unique for each of these records in Campaign. If the contact history or response history tables from your source system contain multiple records with the same customer, date and offer, data migration will fail and the `stage2` script will detect the condition and flag it as an error.

  To work around this issue, choose one of the following options:

  - Clean up the contact history records by deleting redundant entries.

  - Create a view on contact history where rows are normalized by audience key(s), offer, and date. Map this view as the contact history system table.

- **Inferred response history records** — The data migration script cannot determine whether a migrated response was direct or inferred, so by default all of these records are migrated as direct responses.

  As an alternative, you can set all migrated records to be inferred instead of direct. To do this, after migrating response history records, update response records to inferred by changing the value of the `DirectResponse` field in the `UA_ResponseHistory` table to 0.

Re-migration

The following requirements and limitations apply to re-migrating contact and response history:

- You can select whether or not to re-migrate contact history and response history when you select campaigns for re-migration. You can choose to migrate only the history, leaving the campaign (and any subsequent changes that have been made on the target system) intact. You can only re-migrate both contact history and response history together; you cannot re-migrate only one and not the other.

- Contact and response history records that were generated on the same date as records already in the target system tables cannot be re-migrated.

- When re-migrating contact and response history, the data migration script checks contact and response history records on the target system based on date. Records from the source system that do not have the same dates as records in the target system are inserted into the target system tables. However, if contact and response history records from the source system share dates with records already in the target system, these records are not migrated. This situation might arise if flowcharts that generate contact or response history were run multiple times on the same date. If your source system contains such data, you must remove the redundant records from the target system before attempting to re-migrate contact and response history.

- If you delete and re-configure a Response process on the source system, the `ResponseID` in the `UA_Response` table is deleted and a new `ResponseID` is inserted, corresponding to the same `OfferTrackID`. Any response history records corresponsing to the deleted `ResponseID` are now "orphaned" (that is, they have no associated `OfferTrackIDs`). If response history records are generated for a new date, the records are inserted for the new `ResponseID`. The data migration script cannot migrate the orphaned response history records; only the response history records corresponding to the new `ResponseID` are migrated.

- If you make changes to a migrated flowchart in Affinium Campaign 6.x that result in changes to OfferTrackIDs, the old OfferTrackIDs are deleted and the associated contact history records are "orphaned" (that is, they have no associated OfferTrackIDs). If you re-migrate the modified flowchart and contact history, only the OfferTrackIDs and associated contact history records from the current configuration are migrated. Any orphaned contact history records are not migrated.

- To re-migrate the contact and response history, you must also re-migrate the modified flowchart. If you re-migrate only the contact and response history without re-migrating the flowchart, the contact history will not be migrated.

Re-migrating contact and response history only

Option 1 of Stage 5 allows you to choose to migrate contact and response history only. This section describes the results of re-migrating only contact and response history data under two scenarios.

Scenario 1

1. Migrate a flowchart from the source system to the target system, without contact and response history.

2. Run the flowchart on the source system.

3. Modify the flowchart on the target system.

4. Re-migrate only the contact and response history from the source system to the target system.

Result: The modified flowchart on the target system is unchanged (not overwritten). All contact and response history from the source system is moved to the target system. If you then run the modified flowchart on the target system, the new contact and response history data from that flowchart run will be added to the target system and the migrated contact and response history data on the target system will remain unchanged.

Scenario 2

1. Migrate a flowchart from the source system to the target system, including contact and response history.

2. Re-run the flowchart on the source system.

3. Modify the flowchart on the target system.

4. Re-migrate only the contact and response history from the source system to the target system.

Result: The modified flowchart on the target system is unchanged (not overwritten). All contact and response history from the source system is moved to the target system, including any updates to individual contact history records that may have been made with the Track process (for example, changes to contact date). If you then run the modified flowchart on the target system, the new contact and response history data from that flowchart run will be added to the target system and the migrated contact and response history data on the target system will remain unchanged.

Control groups

Control groups are not migrated to the Campaign target system due to significant differences in control group functionality between the current version of Campaign and earlier versions of Campaign.

In the current version of Campaign, all controls are:

- no-contact controls,

- never output in contact lists, and

- never rolled up in performance reports.

If you have controls in earlier versions of Campaign you must manually re-create them in the target system.

Cubes and strategic segments

Migration

Although flowcharts containing the Cube or Create Seg processes are migrated, the actual underlying cube or strategic segment files are not migrated.

You must re-run these flowcharts after migration to re-create the cubes or strategic segments before the cubes or strategic segments can be used in the target system.

Cubes configured with multiple input segments are not supported in Campaign. If you migrate a cube with multiple input segments to a Campaign target system, the cube will be unconfigured on the target system after migration.

In addition, if any of the cubes that you migrate are based on dimension hierarchies that use flat files as tables for input, you must move those flat files to the target system and remap them as they were on the source system. If a cube process still fails to run on the target system after moving and remapping the associated flat files, delete the cube process and create a new one, configuring it exactly the same as the deleted one, and then run the new cube process.

Re-migration

Flowcharts containing the Cube or Create Seg processes can be re-migrated, but cube or strategic segment files are not migrated or re-migrated.

Custom attributes

Migration

Custom attributes can be migrated only once, in association with the object of which they are an attribute.

Checks for these attributes are performed as a part of Stage 2 execution (Special Checks Task); if either of these conditions are present, Stage 2 will fail and the condition will be logged as an error in the `migration.log` file.

Non-string data type drop-down values

Campaign versions 8.1.x and 8.2.x do not support non-string data type drop-down values for campaign or offer custom attributes. If you are migrating from a 6.x version or upgrading from a 7.x version and you have non-string data type drop-down values for campaign or offer custom attributes, the best option is to remove the sections that contain these values from the `unica_fldinfo.xml` file on your source system before upgrade or migration. If you do not remove these values, they are likely to cause errors after upgrade or migration.

Custom campaign attributes

You should be aware of the following limitations when migrating custom campaign attributes:

- Campaign stores custom campaign attribute values for data types such as `text`, `varchar`, and `string` in the `StringValue` column in the `UA_CampAttribute` table. By default, this column is set to `varchar(1024)`. In Affinium Campaign version 7.5.x and earlier, these attributes are stored in columns of the `UA_CampaignExtAttr` table. When you migrate custom campaign attributes to Campaign, if your source version of Campaign contains custom attributes with character values that exceed 1024 bytes, you must either modify these attributes or change the `StringValue` column in the `UA_CampAttribute` table in the SQL upgrade script to accommodate your data.

- If any custom campaign attributes on your source system have names that exactly match any of the target's default system-defined fields or the source's custom offer attributes, you must rename these attributes before you can migrate them to the target system.

Custom offer attributes

You should be aware of the following limitations when migrating custom offer attributes:

- The `UA_OfferExtAttr` table from earlier versions of Campaign no longer exists in the current versions of IBM Unica Campaign. Contents of `UA_OfferExtAttr` in the source system and offer attribute details from the `unica_fldinfo.xml` file are migrated to the corresponding new tables in the target system: `UA_OfferAttribute`, `UA_AttributeDef`, and `UAEnumAttrValues`.

- Campaign stores custom offer attribute values for data types such as `text`, `varchar`, and `string` in the `StringValue` column in the `UA_OfferAttribute` table. By default, this column is set to `varchar(1024)`. When you migrate custom offer attributes to Campaign, if your source version of Campaign contains custom attributes with character values that exceed 1024 bytes, you must either modify these attributes or change the `StringValue` column in the `UA_OfferAttribute` table in the SQL upgrade script to accommodate your data.

- If any custom offer attributes on your source system have names that exactly match any of the target's system-defined fields or the source's custom campaign attributes, you must rename these attributes before you can migrate them to the target system.

> The default attribute definitions supplied with IBM Unica Campaign should not be edited after data migration, as this may cause errors. For more information on default and custom attributes, see the *IBM Unica Campaign Administrator's Guide*.

Re-migration

Re-migration is not supported for custom attributes. That is, new custom attributes added to source system objects that have already been migrated cannot be migrated even if the main object (for example, a campaign or offer) can be re-migrated.

However, if you change the values of custom offer attributes in the source system then re-migrate the offers, the new values of the custom offer attributes are carried over to the target system. Not all offer attribute values can be re-migrated. For details, see the Re-migration section in Offers.

Custom macros

Migration

Custom macros and other stored objects referenced by flowcharts in campaigns (triggers and derived fields) are migrated as a whole from the source system during Stage 4; they cannot be individually specified for migration.

In Stage 5, when campaigns are migrated, flowcharts are migrated, including their references to these objects.

AssignOffer macro

The `AssignOffer()` macro is not supported in Campaign. Stored derived fields that use the `AssignOffer()` macro are not migrated. When any instances of stored derived fields are not migrated for this reason, a warning is logged in the migration log generated by the `stage2` script.

Re-migration

Re-migration is not supported for custom macros.

Derived fields

Migration

Derived fields and other stored objects referenced by flowcharts in campaigns (custom macros and triggers) are migrated as a whole from the source system during Stage 4; they cannot be individually specified for migration.

In Stage 5, when campaigns are migrated, flowcharts are migrated, including their references to these objects.

Re-migration

Re-migration is not supported for derived fields.

Dimension hierarchies

Migration

Dimension hierarchies can be migrated only once. Dimension hierarchy definitions are migrated, but the dimension hierarchy tables are not migrated. They must be set up in the target system after migration.

Re-migration

Re-migration is not supported for dimension hierarchies.

Flowcharts

Migration

Flowcharts are migrated as part of campaigns or sessions. For details, see Campaigns and Sessions.

Some flowcharts may require manual intervention after migration. In addition, some migrated flowcharts may contain processes from earlier versions of Campaign that are no longer supported. For details, see About migration results.

Re-migration

The following requirements and limitations apply to re-migrating flowcharts:

- Flowcharts can be re-migrated as part of campaigns or sessions. In addition, specific flowcharts within campaigns can be selected for re-migration without re-migrating all flowcharts in a campaign.

- Any flowchart associated with a campaign will not be re-migrated if the flowchart already exists in the target system and there are treatments associated with it in the target system.

- If the flowchart selected for re-migration is not found in the target system, but there are treatments associated with it, the existing treatments and any contact and response history associated with that flowchart are deleted before migrating the flowchart. This behavior addresses the scenario where a flowchart has been deleted from the target system without its history being cleared.

- If ownership of re-migrated flowcharts has changed in the source system since previous migration, the ownership in the target system will be updated to reflect this.

- If the name of a migrated flowchart has changed on the source system or the target system, the flowchart cannot be re-migrated. Do not change the name of a migrated flowchart if you anticipate the need to re-migrate it.

Flowchart templates

Migration

All flowchart template files are migrated intact to the target system, but entries in the `UA_FlowchartTmpl` table are not populated by migration. The target IBM Unica Campaign system automatically populates the table the first time that stored templates are pasted in a flowchart in **Edit** mode after migration.

Re-migration

Re-migration is not supported for flowchart templates.

Folders

Migration

You can choose to migrate entire folders of objects. The existing tree structure from the source system is migrated intact.

Re-migration

You can re-migrate entire folders of objects.

If objects have been moved between folders in the source system after initial migration, when you attempt to re-migrate, supporting files that were previously migrated to the target system will remain in their original folder locations. Folders that are re-migrated ignore any specified security policy during migration and use the security policy specified in the target system.

Initiatives

Initiatives can be migrated and re-migrated.

Offers

Migration

Offers can be migrated individually, as part of a folder's contents, or as part of a campaign (that is, if a campaign references the offer).

You should be aware of the following limitations when migrating offers:

- Offers are not migrated if they have treatments associated with them in the target system. Such offers are skipped by the migration process, but migration continues.

- The Stage 5 menu option "Offers not associated with any campaign" allows you to specify an individual offer for migration (you must provide the name of the offer and the offer version, separated by a comma). Only offers that are not associated with a campaign can be migrated using this option.

- Offers migrated from pre-7.x Campaign versions use offer version code formats that are not compatible with those used in Campaign. These offers cannot be edited unless the offer version codes are regenerated to use the new format.

- Multi-part offer codes that contain more than four parts cannot be migrated. You must modify these offers on the source system before you can migrate them to the target system.

Creatives

Campaign does not support multiple creatives per offer. If you are migrating offers with multiple creatives from a pre-7.x version of Campaign, only the first creative for each offer is migrated. Creatives other than the first one associated with an offer are dropped.

Custom offer attributes

For details, see the Custom offer attributes section in Custom attributes.

Offer templates

For details, see Offer templates.

Re-migration

Re-migration of offers is supported in Stage 5 migration, either as part of campaign re-migration, or individually selected when not used in campaigns. When you re-migrate offers, you can specify how objects already in the target system are handled by choosing either **Overwrite** or **Skip** mode. For details, see Re-migration modes.

Offers that are re-migrated into an existing folder ignore any specified security policy during migration and use the security policy of the destination folder specified in the target system.

If an offer that has been used in production in the target system (that is, an offer that has written out treatments to the target system tables) is re-migrated, the contact history for the offer may become invalid on the target system, depending upon the changes that have been made to the offer attributes on the source system. Before re-migrating an offer, be sure to evaluate the impact of re-migration on contact history.

When you re-migrate an offer, changes made in the source system (since previous migration) to any of the following offer attributes are not carried over by re-migration:

- Offer version name
- Version code
- Offer code
- Offer group ID

Offer templates

Migration

Pre-7.x versions of Campaign do not contain offer templates. When offers are migrated to Unica Campaign from pre-7.x source systems, the migration process creates a default template. All migrated offers will use this default offer template in the target system.

Re-migration

When offers are re-migrated, their offer templates are not changed. The original template associated with an offer when the offer was first migrated is left unchanged.

Offer versions

Migration

Offer versions from pre-7.x versions of Campaign are migrated to Campaign as new offers. Contact history that was associated with each offer version is migrated to each new offer in the target system.

After migration, the new offer in the target system has the following:

- Offer name — `<Offer name> - <offer version name>`

- Offer code — `<System-generated offer code> - <version code>`

- New offer custom attribute — the value of the offer custom attribute is the offer version code from the source system

- New offer custom attribute — `<Offer name> - <group code>` where `<group code>` is the `OfferGroupID` in the `UA_Offer` table.

Re-migration

Re-migration of offer versions is handled in the same way as re-migration of offers. For details, see the Re-migration section in Offers.

Processes

Migration

Processes that were configured in the source system can in most cases be migrated to Campaign as configured processes and should be available for running without manual intervention. Exceptions are noted below.

☼ After migration, some processes may be unconfigured on the target system and display an `Invalid cell code format` error, even if the cell code format is the same as the format on the source system. To configure these processes, open the process configuration and click the **OK** button on the General tab. The process box will be configured automatically.

Processes that do not require manual intervention

The following processes are configured and can be run after migration without user intervention:

- Audience
- Call List*
- Cube
- Extract
- Merge

- Mail List*

- Model

- Sample

- Schedule

- Segment

- Select

- Score

*See the exceptions noted in the Migrating Call List and Mail List processes section.

Processes that require manual intervention

The following processes require manual intervention after data migration:

Process	Results of migration
Contact	Converted to a Mail List process in migrated flowcharts, but must be manually reconfigured.
Create Seg	Migrated but unconfigured after data migration. You must select a security policy for the segment being created.
Optimize	Migrated but unconfigured after data migration.
Response	Migrated but unconfigured after data migration. After data migration, you must set up valid User Response Types in the UA_UsrResponseType table, then in the Response process configuration dialog, select a Response Type Code and, at a minimum, map Treatment Code as a matching field.
Snapshot	Files that have been output from Snapshot processes are not migrated. You must move these files manually to the target system if desired.
Track	Migrated but unconfigured after data migration. Contact status does not exist in pre-7.x versions of Campaign. You must configure migrated Track processes to log to contact history, then set a contact status and treatment code for all existing generated treatments.

Migrating Call List and Mail List processes

Call List and Mail List processes are configured and can be run after migration without user intervention, with the following exceptions:

- **Export destinations:** Campaign requires contact processes (Call List and Mail List) to have an export destination specified. In Affinium Campaign 6.x, an export destination was not required. If you are migrating contact processes from Campaign 6.x that do not have export destinations specified, these processes will be unconfigured after migration to Campaign. You can specify an export destination in your source system before migration, or reconfigure them in Campaign after migration.

- **Offer version names:** Offer version names are not supported in Campaign. If you have assigned offers containing version names in Call List or Mail List processes in flowcharts on your source system, these processes will become unconfigured when they are migrated to Campaign. You must manually reconfigure these processes.

Processes no longer supported

Flowcharts containing the following processes are migrated. However, these processes are not supported in Campaign. These flowcharts may be configured and may execute, but their results may be unpredictable. Therefore, we recommend that you delete them from the target system after migration.

- Decision

- eMessage

- EventIn

- EventOut

- Recommend

Legacy processes not migrated

The following processes from Affinium Campaign 4.x are not supported in Campaign. When flowcharts containing these processes are migrated, these processes will not appear in the migrated flowcharts.

- Evaluate

- SelectOpt

- TestOpt

Cell codes

The Cell Code tab in processes from pre-7.x versions of Campaign does not exist in Unica Campaign. The data migration process finds the proper cell code to associate with the process from the output process that created a target cell. In the rare case that there are two or more different cell code values downstream for the same cell, the data migration process will choose any one of these to use. The details pertaining to the cell code chosen and the cell code(s) not chosen are captured in the individual flowchart's log.

Unica Campaign does not allow a cell used as input into multiple contact processes to have different cell codes. If different cell codes are desired, you must first copy the cell (for example, use a Select process to "select all") and then assign a different cell name to the copy of the cell when using it in the second contact process.

AssignOffer macro

The `AssignOffer()` macro from pre-7.x versions of Campaign is not supported in Campaign. Any processes that use the `AssignOffer()` macro appear unconfigured after migration and must be manually reconfigured.

Re-migration

Re-migration of processes is achieved through re-migration of flowcharts. For details, see Flowcharts.

Security

Migration

Users and groups that existed in the source system are preserved and migrated intact.

The default security policy shipped with IBM Unica Campaign is backward-compatible for the following roles without manual intervention:

- Read-only

- Read/write

- Read/write/execute

- Administrator

Re-migration

Re-migration is not supported for security data.

Sessions

Migration

Sessions can be migrated individually or as part of a specified folder. Associated flowcharts are migrated as part of each session.

Stored objects

All stored objects referenced by flowcharts in sessions (custom macros, triggers, and stored derived fields) are migrated as a whole from the source system during Stage 4; they cannot be individually specified for migration.

In Stage 5, when sessions are migrated, flowcharts are migrated, including their references to these objects.

Contact processes

Campaign does not allow contact processes (Mail List, Call List) to be used in flowcharts associated with sessions. Before migrating sessions to Campaign, you must remove any contact processes from session flowcharts. Any contact or response history data generated from these processes will be lost.

Re-migration

The following requirements and limitations apply to re-migrating sessions:

- Sessions can be re-migrated individually or as part of a specified folder. When a session is re-migrated, any flowcharts in that session are also re-migrated.

- When you re-migrate sessions, you can specify how objects already in the target system are handled by choosing either **Overwrite** or **Skip** mode. For details, see Re-migration modes.

- Any new flowcharts in the target system that do not exist in the source system are not affected or changed when the session is re-migrated.

Table catalogs

Migration

All table catalog file system folders are migrated intact to the target system, but entries in `UA_TableCatalog` are not populated by migration. The target IBM Unica Campaign system automatically populates the table when stored catalogs are first viewed from a flowchart in **Edit** mode.

Re-migration

Re-migration is not supported for table catalogs.

Triggers

Migration

Triggers and other stored objects referenced by flowcharts in campaigns (custom macros and derived fields) are migrated as a whole from the source system during Stage 4; they cannot be individually specified for migration.

In Stage 5, when campaigns are migrated, flowcharts are migrated, including their references to these objects.

References to triggers, which are stored in the `UA_Triggerlist` system table, are migrated. However, the files or scripts invoked by triggers are not migrated. These files are stored in arbitrary locations, and the migration tool does not move these files. You must move the files manually to your target system and ensure that the corresponding value in `UA_TriggerList` is updated.

When the `UA_TriggerList` table is migrated with definitions pointing to locations on the source system, the trigger definitions must be modified to reflect correct trigger definition locations in the target system. Alternatively, any trigger executable that was referenced on the source system can be copied to a location on the target system, and `UA_TriggerList.Definition` can be updated to reflect the new location(s).

Re-migration

Re-migration is not supported for triggers.

5 Troubleshooting

- Troubleshooting
- Snapshot process that accepts a Score output cell as input appears unconfigured after it is migrated
- New folders on the source system do not appear on the target system after data re-migration
- Inferred response history records are migrated as direct responses
- Stage 2 error after re-running Stage 5
- Stage 2 consistency check fails for a campaign or session when the lock file is missing
- Stage 3 fails to create default offer template
- Stage 5 fails to migrate contact and response history records prior to year 2000
- Error when migrating or re-migrating flowcharts
- AGFs associated with retired features and migrated through a template fail to run
- Warning when migrating data from Campaign 5.1.1

Troubleshooting

Refer to this section for troubleshooting issues with migrating and re-migrating data in Campaign.

Snapshot process that accepts a Score output cell as input appears unconfigured after it is migrated

Problem or error: A Snapshot process that accepts a Score output cell as input appears unconfigured after it is migrated.

Solution: To work around this issue, perform the following steps:

1. Open the migrated flowchart for editing on the target system.

2. In the Snapshot process configuration, select the input cell from the Score process in the **Input** drop-down list.

3. Click **OK** to save your changes to the Snapshot configuration.

New folders on the source system do not appear on the target system after data re-migration

Problem or error: After re-migrating items such as campaigns, sessions, or offers in newly created folders on the source system, the new folders do not appear on the target system.

Solution: To work around this issue, re-start the target server to flush the cache, or wait until the target server updates its cache. Any new folders and their contents will then appear on the target server.

Inferred response history records are migrated as direct responses

Problem or error: Inferred response history records are migrated as direct responses.

Solution: The data migration script cannot determine whether a response tracked in a pre-7.x version of Campaign was direct or inferred, so by default all of these records are migrated as direct responses.

As an alternative, you can set all migrated records to be inferred instead of direct. To do this, after migrating response history records, update response records to inferred by changing the value of the `DirectResponse` field in the `UA_ResponseHistory` table to 0.

Stage 2 error after re-running Stage 5

Problem or error: After correcting errors reported by Stage 2 (called from within Stage 5), the following error is displayed after directly re-running the `stage5` script:

`"Initial migration stages are not run successfully. Aborting migration."`

Solution: To continue with data migration, perform the following steps:

1. Run the `stage2` script (externally, not from within Stage 5).

2. Ensure there are no errors except for the "Clean Target Check Task" of Stage 2 (ignore this error). If other errors are reported, correct them and re-run the `stage2` script.

3. To correct the "Clean Target Check Task" error, manually update the `MigConfig_Status` table and set `Status = 1` where `StageId = 2` and `taskID = 212`.

4. Run the `stage5` script (do not run Stage 3 or Stage 4).

Stage 2 consistency check fails for a campaign or session when the lock file is missing

Problem or error: If a campaign or session lock file is missing from the `partition[n]/campaigns` or `partition[n]/sessions` folder, the Stage 2 consistency check will fail for the campaign or session, even though it exists on the source system.

Solution: Run the `stage2` script with the `-f` option to create the lock file. You should then be able to migrate the campaign or session successfully.

Stage 3 fails to create default offer template

Problem or error: The `stage3` script fails to create the default offer template, and an error appears in the migration log indicating that five or more offer codes are in use.

Solution: Campaign does not support multi-part offer codes that contain more than four parts. You must modify these offers on the source system before you can migrate them to the target system.

To work around this issue, follow these steps:

1. Modify the offers on your source system so that none contain offer codes with more than four parts.

   For example, on a Campaign 6.2.5 source system, set the `UACOfferCodeUsed` property in the `unica_acsvr.cfg` file to a value less than five. The `unica_acsvr.cfg` file is located in the `/Campaign/config` directory of your Campaign source system.

2. Run the appropriate DDL scripts for your database type to re-create and re-populate the Campaign system tables.

3. Remove the temporary migration tables (prefixed with `MIG_`) from the target system's database.

4. Delete any files and folders that have been added to the default folders (partitions/<partition_name>/campaigns, partitions/<partition_name>/catalogs, and so on) for the partition on the target system. Do not delete the default folders.

5. Delete the `bootstrap_migration.xml` file from the location where you are running the data migration scripts.

6. Restart the target system and verify that it is a clean system.

7. Rerun the data migration stages beginning with Stage 1.

Stage 5 fails to migrate contact and response history records prior to year 2000

Problem or error: Stage 5 fails to migrate contact and response history records dated prior to January 1, 2000 and displays an `integrity constraints violated (parent key not found)` error.

Solution: By default, the `UA_Calendar` table contains `DateID` records beginning with 20000101 (corresponding to January 1, 2000). Contact and reponse history records prior to January 1, 2000 fail to migrate because their `ContactDateTime` or `ResponseDateTime` values refer to date IDs that do not exist in the `UA_Calendar` table.

To work around this problem, follow these steps to populate the target system's `UA_Calendar` table with the required date IDs.

1. Execute the following queries on your source system's database to determine the earliest contact and response history records:

   `select min(ContactDate) from UA_ContactHistory`

   `select min(ResponseDate) from UA_ResponseHistory`

2. Populate the target system's `UA_Calendar` table with date IDs for the desired range of dates. The following example for SQL Server inserts records for January 1, 1999 to December 31, 1999. Replace the values in bold to specify the beginning and end dates, respectively.

   ☼ The following example code is from the `ac_populate_tables_sqlsvr.sql` script in the ddl directory under your Campaign installation. If your database is DB2 or Oracle, use the code from the DDL script for your database type (`ac_populate_tables_db2.sql` for DB2 or `ac_populate_tables_ora.sql` for Oracle).

```
declare @date_v datetime
set @date_v = '01/01/1999'
set datefirst 7
set dateformat mdy
while @date_v <= '12/31/1999'
begin
    insert into UA_Calendar
    (Year, FiscalYear, Quarter, FiscalQuarter,
    Month,
    WeekOfYear,
    WeekOfMonth,
    DayOfYear, DayOfMonth, DayOfWeek,
    ActualDate,
```

```
    FirstDayOfWeek,
    LastDayOfWeek,
    DateID) values
    (DATEPART(yyyy, @date_v), DATEPART(yyyy, @date_v), DATEPART(q,
@date_v),DATEPART(q, @date_v),
    DATEPART(mm, @date_v),
    DATEPART(ww, @date_v),
    DATEDIFF(dd, DATEADD(dd,-1,DATEADD(ww, DATEDIFF(ww,0,DATEADD(dd,-
(DAY(@date_v)-1),@date_v)), 0)), @date_v)/7 + 1,
    DATEPART(dy, @date_v), DATEPART(dd, @date_v), DATEPART(dw, @date_v),
    @date_v,
    DATEADD(dd, -1, DATEADD(wk, DATEDIFF(wk,0,@date_v), 0)),
    DATEADD(dd, 5, DATEADD(wk, DATEDIFF(wk,0,@date_v), 0)),
    CAST (CONVERT (varchar(20), @date_v, 112) AS BIGINT))
    set @date_v = DATEADD(dd, 1, @date_v)

end
```

Error when migrating or re-migrating flowcharts

Problem or error: During data migration/re-migration of flowcharts in Stage 5, the `migration.log` file may display an error such as the following:

`"ERROR stage5.....No resource is associated with key "<KeyName>"`

or

`ERROR stage5.Stage5Driver [2988] – Unable to get ID table for identifier null or No resource associated with key....`

Solution: You can ignore these errors. They have no adverse effect on the data migration process or on migrated objects.

AGFs associated with retired features and migrated through a template fail to run

Problem or error: If any Affinium Generated Fields (Campaign Generated Fields in Campaign) associated with features that have been retired in Campaign are used in a migrated template, the template will not run successfully.

Solution: The references to the AGFs in the template will continue to exist in the new environment, but must be modified to reference current objects for the templates to run successfully. For example, if tracking codes from Affinium Campaign 6.x are referenced in a derived field calculation, then that derived field must be modified to use Campaign's new treatment code, or modified in some other way to remove the reference to obsolete tracking codes. Likewise, if the tracking code or any other retired AGF is mapped to an output field for a vendor file or to contact history, the retired AGF must be removed and replaced with a different field before the template can run successfully.

Warning when migrating data from Campaign 5.1.1

Problem or error: After running the `stage2` script for migrating data from Affinium Campaign 5.1.1, the `migration.log` file displays the following warning:

`warning: Failed to find the table mapping for UA_IDSByType.` It also displays: `templatetablename <---> templatetblname...Fail.`

Solution: You can ignore this warning.

A Customizing Data Migration

- About customizing data migration
- Example custom data migration tasks
- Implementing a custom task
- Removing a custom task from a data migration stage
- Running a customized data migration stage script
- Sample Java classes for implementing data migration tasks

About customizing data migration

For best results, engage with IBM Unica Consulting Services before performing any data migration tasks in Campaign.

Campaign allows you to customize the workflow of migration Stages 2–5 by using the migration configuration utility (`acMigConfigTool`) to add or remove data migration tasks. Use custom tasks for data migration needs that are not addressed by the default tasks in the data migration stages. Use the Java API provided with Campaign to implement the Java interface for the data migration stage that you want to customize.

Example custom data migration tasks

The following are examples of tasks that can be added to the data migration workflow in Stages 2–5:

- Back up Campaign data and disk artifacts to a different disk location
- Delete temporary files
- Migrate flat-file output, such as a customer contact lists, from flowchart runs
- Migrate supporting data from user tables
- Migrate log files

Implementing a custom task

Implementing a custom data migration task has four major steps:

1. Create the task. Depending upon the task and the needs of your environment, the task could be implemented, for example, as a shell script, SQL script, or a `.bat` file.

2. Choose a Java class to implement the Java interface for the data migration stage that you are customizing. Unica provides a set of sample Java classes for Stages 2–5. For details, see Sample Java classes for implementing data migration tasks.

3. Ensure that the environment variables required by the data migration scripts have been properly set. See Set environment variables.

4. Run the Campaign migration configuration utility (`acMigConfigTool`) to add the custom task to the data migration stage. When you run the `acMigConfigTool` utility, you pass a command to include your custom task as a parameter to the Java class. For details, see To add a custom task to a data migration stage.

To add a custom task to a data migration stage

❗ Ensure that the `stage1` data migration script has been executed before you run `acMigConfigTool`. If the `stage1` script has not been run, `acMigConfigTool` will generate an error.

Run the migration configuration utility (`acMigConfigTool`) and follow the prompts to add a custom task to a migration stage.

☼ If the custom task that you are adding has dependencies upon other tasks in the migration stage, ensure that you place the custom task in an appropriate position in the workflow.

Information required for adding data migration tasks

When you choose to add a migration task, the `acMigConfigTool` utility prompts for the following information:

- Data migration stage where you want to add the task.

- Position in the stage workflow where you want to insert the new task.

- Descriptive name for the task. Example: "Run shell command during Stage 2".

- Full path and file name of the `.jar` file that contains the Java class that you are using to implement the task.

- Full class name of the Java class.

- Command used to execute your custom task. This command is passed as a parameter to the Java class.

Removing a custom task from a data migration stage

> Ensure that the `stage1` data migration script has been executed before you run `acMigConfigTool`. If the `stage1` script has not been run, `acMigConfigTool` will generate an error.

To remove any custom tasks in migration Stages 2–5, run the `acMigConfigTool` utility and follow the prompts to specify the task you want to delete.

> Removing a default task is not recommended. Running a migration script after removing a default task will likely invalidate your migration and may cause significant problems.

Running a customized data migration stage script

After customizing a data migration script, you can run the script following the instructions in Run the data migration scripts.

Sample Java classes for implementing data migration tasks

The Campaign installation supplies one sample Java class for each of the customizable migration stages. These classes implement the Java interfaces that allow you to customize the migration stages. Each sample class invokes a system call during the migration stage that executes the custom migration task that you specify.

The `samplecallouts.jar` file in the `/tools/migration/5.1+To8.5` directory contains the following sample Java classes:

- `Stage2ShellTask.java`
- `Stage3ShellTask.java`
- `Stage4ShellTask.java`
- `Stage5ShellTask.java`