

# **SAS<sup>®</sup> Customer Analytics for Communications 5.4 Migration Guide**



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**SAS® Customer Analytics for Communications 5.4: Migration Guide**

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# About This Book

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## Audience

This document explains how to migrate SAS Customer Analytics for Communications from a source machine to a target machine. The document assumes that you are familiar with the SAS 9.3 installation and configuration processes.

The instructions in this document describe the installation of SAS Customer Analytics for Communications on a three-tier environment in migration mode. A three-tier plan file includes the SAS server tier, middle tier, and client tier. The document explains how each tier of the solution (including the metadata and the user-created objects) and data are migrated from a source machine to a target machine.

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## Prerequisites

Before you migrate SAS Customer Analytics for Communications to your production environment, complete the following tasks:

- Read the *SAS Intelligence Platform: Installation and Configuration Guide*, which is available at the following location: <http://support.sas.com/documentation/cdl/en/biig/62611/PDF/default/biig.pdf>.
- Review the <http://support.sas.com/documentation/installcenter/index.html> page.

This page has the most up-to-date installation and configuration documentation for SAS software. The documentation on this site is grouped by SAS release, installation, and configuration type.

- SAS Customer Analytics for Communications is installed through the SAS Deployment Wizard. For more information, see the *SAS Customer Analytics for Communications: Administrator's Guide*, which is available at the following location: [http://support.sas.com/documentation/onlinedoc/securedoc/index\\_cac.html](http://support.sas.com/documentation/onlinedoc/securedoc/index_cac.html).
- Review the system requirements for your operating system and upgrade to the required JDK. The system requirements document for SAS Customer Analytics for Communications can be found at: <http://support.sas.com/resources/sysreq/index.html>.
- Review the checklist that is generated with your plan file. This checklist lists the user accounts that you will need to create in your environment.

- Check that you have the correct version of the web application server for your environment. SAS Customer Analytics for Communications requires one of the following application servers:
  - IBM WebSphere
  - Oracle WebLogic Application Server
  - Red Hat JBoss
- Check the system requirements specification for details about the supported versions of the application server. Information about upgrading your web application server can be found at: <http://support.sas.com/resources/thirdpartysupport/v93/index.html>.
- You will need a plan file to install SAS Intelligence Platform and SAS Customer Analytics for Communications. Plan files can be obtained in the following ways:
  - Your SAS consultant can provide a plan file for your installation.
  - You can create a plan file using the planning tool, which is located at: [https://www3.sas.com/apps/cpi/admincenter\\_planning\\_login.jsp](https://www3.sas.com/apps/cpi/admincenter_planning_login.jsp).
- From the target machine, if you are using a database other than SAS, verify that you can access that third-party database (available on the data server) by using the database client.

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## Document Conventions

The following table lists the conventions that are used in this document:

Convention	Description
<SAS Home>	Represents the path to the folder where SAS is installed. For example, on a Windows computer, this can be <b>C:/Program Files/SASHome</b> .
<SAS configuration directory>	Represents the path to the folder where SAS configuration data is stored. For example, on a Windows computer, this can be <b>C:/SAS/Config</b> .
<SAS software depot>	Represents the path to the folder where the executable file for the SAS Deployment Wizard is available. For example, on a Windows computer this can be <b>C:/SAS Software Depot</b> .

# Recommended Reading

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When you refer to this document, you could refer to the following documents:

- *SAS Customer Analytics for Communications: Administrator's Guide*
- *SAS Customer Analytics for Communications: User's Guide*

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## Chapter 1

# Migration Steps

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## Overview of the SAS Customer Analytics for Communications Migration

Moving SAS Customer Analytics for Communications from a pre-production environment (source machine) to a production environment (target machine) involves the following steps:

1. Create a migration package on the source machine by using the SAS Migration Utility.
2. Install SAS Customer Analytics for Communications on the target machine by using the migration package.
3. Import data.

*Note:* Any customization that you have done to the SAS Customer Analytics for Communications Server configuration outside the **<SAS configuration directory>** is not automatically migrated. You must manually make this customization after migration. This customization includes any SAS code modifications, user-defined macros, custom scenarios, and database changes.

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## Pre-Migration Tasks

Complete the following tasks before you run the SAS Migration Utility on the source machine:

1. Stop the web application server (JBoss, WebSphere, or WebLogic, as applicable) and restart all other SAS Servers.

2. Edit the `smu.properties.template` file, which is available at the following location:  
`<SAS Software Depot>/utilities/smu93`.

Add the following code at the end of the file. This code prevents the data that is available in the following directories from being included in the migration package.

### Windows

```
levconfig.exclude.dir.12BYTE.1=C:\\SAS\\Config\\Lev1\\AppData\\
SASDynamicAnalyBaseTblSvr\\5.4
levconfig.exclude.dir.12BYTE.2=C:\\SAS\\Config\\Lev1\\AppData\\
SASCustAnalyticsCommServer\\5.4
levconfig.exclude.dir.12BYTE.3=C:\\SAS\\Config\\Lev1\\AppData\\
SASCommunicationsCommononSvr\\5.4
levconfig.exclude.dir.12BYTE.4=C:\\SAS\\Config\\Lev1\\AppData\\
SASCommAnalyticsArch\\5.4
```

*Note:* `C:\\SAS\\Config\\` is the default **<SAS configuration directory>**. If you have the SAS configuration directory in a different location, update this path accordingly.

### UNIX

```
levconfig.exclude.dir.12BYTE.1=<SAS configuration directory>/AppData/
SASDynamicAnalyBaseTblSvr/5.4
levconfig.exclude.dir.12BYTE.2=<SAS configuration directory>/AppData/
SASCustAnalyticsComm/5.4
levconfig.exclude.dir.12BYTE.3=<SAS configuration directory>/AppData/
SASCommunicationsCommononServer/5.4
levconfig.exclude.dir.12BYTE.4=<SAS configuration directory>/AppData/
SASCommAnalyticsArch/5.4
```

3. In the `smu.properties.template`, change the values of the following properties according to your deployment.

*Note:* If the property is commented, uncomment it by removing the hash symbol (#) from the beginning of the line.

On a Windows machine, the properties can be as mentioned below:

- `SMU.config.dir=C:\\SAS\\Config\\Lev1`
- `SMU.SASHOME=C:\\Program Files\\SASHome`
- `SMU.host.metadata=<Complete name of the source machine>`

For example, the property-value pair can be: `SMU.host.metadata=server01.abc.com`.

- `SMU.user=sasadm@saspw`
- `SMU.password=<Password>`
- `SMU.SASROOT=<Complete path of SAS root>`

For example, the property-value pair can be: `SMU.SASROOT=C:\\Program Files\\SASHome\\SASFoundation\\9.3`.

- SMU.Output.Dir=<Complete path where the migration package will be created>  
For example, the property-value pair can be SMU.Output.Dir=C:\SMU\_Latest\migrationPackage.
  - SMU.webinfpltfm.dbms.userid=sasadm@saspw
  - SMU.webinfpltfm.dbms.password=<Password of the sasadm user>
4. Create the schema and database tables on the target machine according to those available on the source machine. Make sure that the user name for each schema on the target machine is same as the user name of the corresponding schema on the source machine. You can change the user names later according to your requirements. Also, make sure that the privileges that you grant to each user are the same as what you have granted to the corresponding user of the source machine.

## Migration Steps

### Create a Migration Package on the Source Machine

To create a migration package:

1. On the source machine, run the SAS Migration Utility.
  - a. On the command prompt, go to the <SAS software depot>/utilities/smu93 directory in which the smu93\_xxx executable file is available.
  - b. On the command prompt, run the following command to create the migration package:
    - For SAS 9.3 on Windows 64-bit:
 

```
smu93_x64 -properties <absolute path name to the smu.properties.template property file> -replace
```
    - For SAS 9.3 on UNIX:
 

```
./smu93 -- -properties <absolute path name to the smu.properties.template property file> --replace
```

For detailed instructions on how to run the SAS Migration Utility, see the *SAS 9.3 Intelligence Platform: Migration Guide*, which is available at <http://support.sas.com/documentation/cdl/en/bimig/62613/HTML/default/viewer.htm#titlepage.htm>.

2. The analysis phase of the migration checks the version of the solution that you are migrating, and then creates a migration package. The migration package is created at the location that you specified in the SMU.Output.Dir property in the smu.properties.template file.

It also generates a report (FullReport.html) that shows whether the migration package was created successfully. The report is generated at the following location:

#### Windows

<Output path specified in the smu93.properties file>/  
<machine name>/AnalysisReport/

#### UNIX

```
<Output path specified in the smu93.properties file>/  
<machine name>/AnalysisReport/
```

3. Verify the warnings and errors in the analysis report and resolve these warnings or errors.
4. Copy the migration package to the target machine.

### ***Install SAS Customer Analytics for Communications on the Target Machine***

You have to install SAS Customer Analytics for Communications by using the migration package.

To install SAS Customer Analytics for Communications:

1. On the target machine, run the SAS Deployment Wizard.
2. On the Migration Information page of the wizard, specify the path to the migration package on the target machine.
3. Change the default application server context name from SASMeta to SASApp at places wherever applicable.
4. Complete the remaining steps using the default settings of the SAS Deployment Wizard.

*Note:* Change of database (wherever database is applicable) is not supported.

## Chapter 2

# Post-Migration Tasks

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## Data Migration

### *Migrate Data Available in Physical Folders*

Copy the physical folders with data from the following directories in the source machine to the corresponding directory in the target machine:

#### **Windows**

- C:\\SAS\\Config\\Lev1\\AppData\\SASCommAnalyticsArch\\5.4
- C:\\SAS\\Config\\Lev1\\AppData\\SASDynamicAnalyBaseTblSvr\\5.4
- C:\\SAS\\Config\\Lev1\\AppData\\SASCustAnalyticsCommonServer\\5.4
- C:\\SAS\\Config\\Lev1\\AppData\\SASCommunicationsCommonSvr\\5.4

*Note:* C:\\SAS\\Config\\ is the default <SAS configuration directory>. If you have the SAS configuration directory in a different location, update this path accordingly.

#### **UNIX**

- <SAS configuration directory>/AppData/SASCommAnalyticsArch/5.4

- <SAS configuration directory>/AppData/SASDynamicAnalyBaseTblSvr/5.4
- <SAS configuration directory>/AppData/SASCustAnalyticsCommonServer/5.4
- <SAS configuration directory>/AppData/SASCommunicationsCommonSvr/5.4

### **Migrate Data Available in Databases and Schemas**

Export the data that is available in the databases or schemas of the source machine and import it into the respective databases and schemas of the target machine. To complete this task, you can use the appropriate tool that is available for the database.

### **Migrate Metadata of Analytical Models**

Manually transfer the metadata information of SAS Enterprise Miner models that is required for existing projects from the source machine to the target machine. You can complete this task by using the .spk export and import utility. After you transfer the metadata to the target machine, change the properties of the imported components as required.

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## **Post-Installation Instructions**

### **Verify Operating System Users and Grant Permissions**

Verify that a user group named SAS Server Users exists at the operating system level. This user group is created as a part of the SAS installation. Make sure that this group includes the sassrv user (a SAS Server user).

Grant the SAS Server Users group Full Control permission (on Windows) or 775 permission (on UNIX) for the following folders and their subfolders:

- <SAS configuration directory>/Lev1/AppData/SASCommunicationsCommonServer
- <SAS configuration directory>/Lev1/AppData/SASCustAnalyticsComm
- <SAS configuration directory>/Lev1/AppData/SASDynamicAnalyBaseTblSvr
- <SAS configuration directory>/Lev1/Applications/SASCommunicationsCommonSvr5.4
- <SAS configuration directory>/Lev1/Applications/SASCustAnalyticsCommServer5.4
- <SAS configuration directory>/Lev1/Applications/SASDynamicAnalyBaseTblSvr5.4

## Deploy the Master Loop Job

The MasterLoopDABTJob invokes the jobs that populate the ABT during the ABT building process.

To deploy the MasterLoopDABTJob job, complete these steps:

1. Log on to SAS Data Integration Studio and connect to an appropriate profile.
2. On the **Folders** tab, expand **Products** ⇒ **SAS Dynamic Analytical Base Table Server 5.3** ⇒ **Application Mart** ⇒ **Jobs**.
3. Right-click **MasterLoopDABTJob**, and then select **Scheduling** ⇒ **Deploy**.
4. In the Deploy a job for scheduling dialog box, from the **Batch Server** list, select **<Application server> - SAS DATA Step Batch Server**.

*Note:* **<Application server>** represents the application server on which you installed SAS Customer Analytics for Communications. For example, if you installed SAS Customer Analytics for Communications on SASApp, select **SASApp – SAS DATA Step Batch Server**.

5. Click **New** to define the deployment directory. The New directory dialog box appears.
  - a. In the **Name** field, enter a name for the deployment directory. For example, you can enter **dabt\_deployedjobs**.
  - b. In the **Directory** field, type **<SAS configuration directory>/Lev1/Applications/SASDynamicAnalyBaseTblSvr5.3/depoyed\_jobs/dabt**. Alternatively, you can click **Browse** to navigate to the deployment directory.
  - c. Click **OK**.
6. Do not change the default values in the **Deployed Job Name** field and the **Location** field.
7. Click **OK**.

If the MasterLoopDABTJob job is deployed successfully, a file named MasterLoopDABTJob.sas is created in the deployment directory (**<SAS configuration directory>/Lev1/Applications/SASDynamicAnalyBaseTblSvr5.4/depoyed\_jobs/dabt**).

8. Edit the MasterLoopDABTJob.sas file and make the following changes:

*Note:* You must edit the MasterLoopDABTJob.sas file and make these changes every time you deploy or redeploy the MasterLoopDABTJob job.

- a. Search for the line of code beginning with the following declaration: **%let etls\_controlName**

You will find two occurrences of this line of code.

- b. On the first occurrence, replace the value of the etls\_controlName variable with the following: **&outer\_loop\_remote\_session\_prefix;**
- c. On the second occurrence, replace the value of the etls\_controlName variable with the following: **&inner\_loop\_remote\_session\_prefix.;**

9. Save the changes, and then close the MasterLoopDABTJob.sas file.
10. Close SAS Data Integration Studio.

---

## Validation Instructions

### **Verify the Installation of SAS Customer Analytics for Communications**

To verify whether SAS Customer Analytics for Communications has been installed properly, complete these steps:

1. Enter the application URL in the address field of your web browser, and then press ENTER. For example, you might enter **http://server01.abc.com:<port number>/SASCustAnalyticsComm**.
2. Log on to SAS Customer Analytics for Communications as a user who has all the capabilities of the Business Analysis role. For details about roles and capabilities, see *SAS Customer Analytics for Communications: User's Guide*.
3. You should see the following workspaces:

- Projects
- Scoring

*Note:* You see the Administrative workspace only if you log on to the application as an administrator.

4. In the Projects workspace, check that you can create a project. After you create a project, you can open it and define its components such as a subset criterion, an analytical base table (ABT), and variables. For instructions on how to create a project and define its components, see *SAS Customer Analytics for Communications: User's Guide*.

*Note:* Installing SAS Customer Analytics for Communications does not automatically populate the base tables. Base tables are populated when you run the ETL jobs. Therefore, unless you populate the base tables with the required data, you cannot perform the tasks that access the base tables. These tasks include the following:

- build a modeling ABT
- view the number of members in the target population defined through a subset criterion (the Show Count operation)

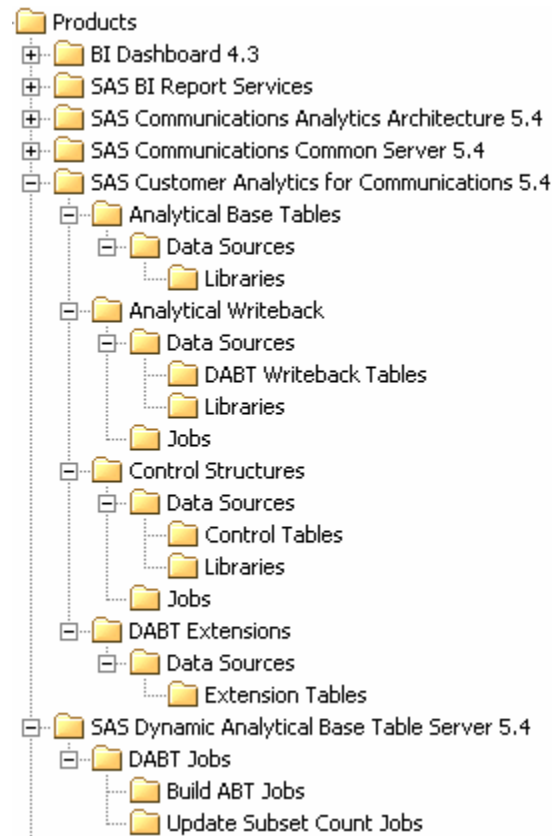
### **Verify the Metadata Layout**

To verify that all the required metadata components are created successfully, complete these steps:

1. Log on to SAS Management Console with a certain profile.
2. On the **Folders** tab, expand **Products** ⇨ **SAS Customer Analytics for Communications 5.4**.
3. Confirm that the following subfolders are created in each of these folders.



Figure 2.1 Metadata Layout



4. Close SAS Management Console.

### Verify the Predefined Libraries

To confirm that the predefined libraries are created appropriately, complete these steps:

1. Log on to SAS Management Console with the profile of an administrator.
2. On the **Plug-ins** tab, expand **Environment Management** ⇒ **Data Library Manager** ⇒ **Libraries**.
3. Make sure that the following libraries are created:
  - ARM
  - CAC\_ACT
  - CAC\_MDL
  - CAC\_SCR
  - CACMDSCR
  - CACSCSCR
  - CACCATSCR
  - CFDBASE
4. Close SAS Management Console.
5. Go to the <SAS configuration directory>/Lev1/<SAS Application Server context name> folder.

6. Depending on whether the operating system is Windows or UNIX, run the sas.bat or the sas.sh file respectively. For example, on the Windows machine, run the `C:\SAS\Config93/Lev1/SASApp/sas.bat` file.
7. In the SAS Explorer, double-click **Libraries** and verify that the following library names are displayed:
  - ARM
  - CAC\_ACT
  - CAC\_MDL
  - CAC\_SCR
  - CACMDSCR
  - CACSCSCR
  - CACCATSCR
  - CFDBASE
8. Close Base SAS.