Contents

About This Book ........................................................................................................ v
Recommended Reading ............................................................................................. vii

Chapter 1 • Introduction to Migration in the SAS Forecast Server ......................... 1
  Overview of the Migration Process ........................................................................ 1
  About Project Organization ................................................................................... 1
  Migration Considerations ..................................................................................... 2
  What Happens during Migration? ......................................................................... 3
  About Migrating Archives .................................................................................... 4

Chapter 2 • Migration Options .................................................................................. 5
  Overview of the Migration Options ........................................................................ 5
  Option 1: The SAS Migration Utility ..................................................................... 6
  Option 2: Automatic Registration .......................................................................... 7
  Option 3: Archives .................................................................................................. 9

Chapter 3 • Migrating Environments on the Same Machine ....................................... 11
  About Performing a Migration on the Same Machine ........................................... 11
  How to Migrate Environments on the Same Machine .......................................... 11

Chapter 4 • Migrating Reports ................................................................................ 13
  Directories Specified in the Source File Field ...................................................... 13
  Considerations When Migrating Reports ............................................................... 13
  Import Reports to the SAS Forecast Server 12.1 ................................................ 14
  Post-Migration Tasks for Reports ......................................................................... 15
About This Book

Audience

The *SAS Forecast Server 12.1: Migration Guide* is intended for system administrators who need to migrate environments and projects to the SAS Forecast Server 12.1.
Recommended Reading

•  *SAS Forecast Server: Administrator's Guide*

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Overview of the Migration Process

The tasks in this chapter explain the options that you have to migrate content from previous releases of the SAS Forecast Server to SAS Forecast Server 12.1. Evaluate the options and choose the time to migrate that best fits your business cycle.

*Note:* If you have projects that were created with the SAS Forecast Server 1.4 and you want to use the SAS Migration Utility, then you must upgrade those projects to the SAS Forecast Server 2.1 before upgrading to release 12.1.

This chapter explains the correct order in which to perform all migration tasks. It references information in other documents as necessary. You should read this entire chapter before you begin the migration process for your SAS Forecast Server content.

For best results, you should install the migrated SAS deployment of SAS Forecast Server on a separate group of machines from your original SAS deployment.

About Project Organization

Prior to the SAS Forecast Server 3.1, you did not have the ability to group projects together into workspaces. Releases 3.1 and later support forecasting environments that enable this functionality. A forecasting environment is defined by the following basic attributes:

- logical name
- host SAS Workspace Server
- content path on the SAS Forecast Server

A forecasting environment defines each of the following:
• a container for projects
• a workspace for users
• a partition of a SAS Workspace Server

In releases 3.1 and later, forecasting environments replace SAS Workspace Servers in the user interface of the SAS Forecast Server. However, the concept of a forecasting environment existed in earlier releases of the SAS Forecast Server in a more basic form. In those earlier releases, the SAS Forecast Server provided a single and configurable default location value. This value was effectively a globally shared content path on all SAS Workspace Servers. Because the path was shared, the effect was that all new projects were stored in the same location in the SAS Workspace Server file system. This “same location” is referenced by the current default location value. Since release 3.1, you can use forecasting environments to identify multiple project locations for each SAS Workspace Server. This enables significantly more flexibility and control for site administrators. In addition, you can use metadata permissions to control access to each forecasting environment. Therefore, you can use forecasting environments to define private workspaces for groups of users, while still allowing sharing among group members.

Migration Considerations

Before migrating content from a previous release of the SAS Forecast Server, review these issues:

• When updating a release prior to 3.1, the default location value was customizable. When the default location value was changed, projects were not moved to the new location. Therefore, a server could have projects in multiple locations on the file system, even though new projects were created in the new location. Review your existing projects carefully to determine from which directories to migrate content.

  *Note:* The SAS Migration Utility for SAS 9.1.3 provides an analyze mode that you can use to automatically detect existing locations for projects in that SAS release.

• A forecasting environment supports restricted access using metadata permissions. Therefore, you must determine appropriate access settings for each existing location before migrating content. This task is not necessary if you are using a migration option that copies the permissions from the original deployment. Sharing a project changes the access settings of a project within its forecasting environment.

• The user_locations.properties file is deprecated for release 3.1 and later. The purpose of this file was to define a project area that was accessible to only a subset of users. This scenario is now supported by defining a forecasting environment and using metadata permissions to make the forecasting environment accessible to only a subset of users.

• Starting with SAS Forecast Studio 3.1, sample reports are removed during migration. All sample reports use the FS_SAMPLE keyword. To ensure that no custom reports are removed during migration, custom reports should not use this keyword. All custom reports can be migrated using a stored process in the SAS Intelligence Platform framework.

• How the SAS Forecast Server derives the owner of a project has changed from release 3.1. For more information, see the *SAS Forecast Server: Administrator's Guide*.

  **CAUTION:**
Do not change the metadata name of a user in SAS Management Console.

- One of the post-configuration steps in release 2.1 was to create an HPF server definition in SAS Management Console. When you migrate from release 2.1 to release 4.1, the HPF server definition remains configured under the Server Manager in SAS Management Console 9.3. After you have configured release 12.1, you should remove the HPF server definition in SAS Management Console before you attempt to access any of the SAS Forecast Studio tasks in SAS Enterprise Guide or the SAS Add-In for Microsoft Office.

What Happens during Migration?

The migration process copies the forecasting environments and project details to the new deployment. How this is accomplished depends on the source deployment.

When migrating from release 3.1 and later, the source deployment contains compatible metadata that describes the forecasting environments and projects. In these releases, migration copies that metadata to the new deployment.

For releases older than 3.1, the source deployment does not contain forecasting environment metadata. However, the relative path to each project is consistent and known. Therefore, the implied location of the environment in the file system can be derived from the full path to the project files. This full path is recorded in the project metadata and allows definitions for forecasting environments to be automatically generated during migration.

In either of these cases, because of the potential size of the file system content, most migration options focus on moving only the metadata that describes the content. As a result, you must manually move the content to complete the migration.

When manually moving content, the files on the destination machine must have the same file paths as they had on the source machine to ensure project integrity. For example, if you have content located at C:\Forecasting on the source machine, you must move it to the same location on the destination machine. Neither the drive letter nor the directory name can be different. This consistency is required because the file path is stored in several locations in the project’s content. If you want to change a file path during the upgrade, see “Option 3: Archives” on page 9.

Note: If you are migrating content on the same machine, see “Migrating Environments on the Same Machine” on page 11.

Although you have migrated projects to the new deployment, these projects are still formatted for the previous release of the SAS Forecast Server. You must update each project’s version so that the internal structure of each project is updated to use the formatting in the current release of the SAS Forecast Server. If you have permission to update the project version, then SAS Forecast Studio automatically prompts you to convert the project when you open it for the first time. You can also convert projects manually by using SAS Forecast Server macros, the SAS Forecast Server Plug-ins for SAS Management Console, or the SAS Forecast Project Manager.

Note: Before migrating any project, you should back up the project. You can use the backup copy to restore your project if there are any problems during the migration or when you update the project version.
About Migrating Archives

As with all file content, you must manually migrate project archives. Because no search is performed for archive files, no reminders or warnings are generated for them during the migration process.
Overview of the Migration Options

When migrating from a previous release of the SAS Forecast Server, you can choose from three migration options.

1. The SAS Migration Utility. Use this option to perform a system migration. The migration destination path for the SAS Forecast Server environment must be in the same location on the source machine.

2. Automatic Registration. Use this option to migrate only the SAS Forecast Server. The migration destination path for the SAS Forecast Server environment must be in the same location on the source machine.

3. Archives. Use this option to change the path of a SAS Forecast Server project during an upgrade to a new release.

Note: If you are migrating content on the same machine, see “Migrating Environments on the Same Machine” on page 11.
Option 1: The SAS Migration Utility

About the SAS Migration Utility

The standard migration mechanism for all SAS products is the SAS Migration Utility. This utility generates a package of migrated content and settings that the SAS Deployment Wizard uses to configure the new system. This option is best for a full system migration. The package does not include all of the content for the SAS Forecast Server. This is because of the expected size. Instead, you must manually move the content for the SAS Forecast Server to the new system. However, the utility does analyze and migrate the metadata for the content. The utility issues warnings about special concerns, which might require consideration or additional planning.

Note: For content that you are migrating from release 2.1, it is recommended that you use the analyze mode provided by the SAS Migration Utility for SAS 9.1.3. You should use the analyze mode even if you do not intend to use the utility to migrate your data because the utility can assess the state of your source machine. The analysis report that it generates identifies all projects and forecasting environments that you should migrate. Using this analysis report reduces the chance of losing content during migration.

About Project Description and Version Information

The SAS Migration Utility does not have access to the project description and version information in releases prior to 3.1. During migration, default values for the project description and version information are provided in the metadata. The SAS Migration Utility assigns the value < 3.1 for the version information and leaves the project description blank. However, after you use the migrated project, the project description is automatically restored in the metadata.

You can unregister a forecasting environment and then re-register it in the SAS Forecast Server Plug-ins for SAS Management Console to re-create the metadata. Or, you can unregister and re-register a forecasting environment using SAS Forecast Server macros or the SAS Forecast Project Manager. For more information, see the online Help for the SAS Forecast Server Plug-ins for SAS Management Console, the online Help for the SAS Forecast Project Manager, or the online Help for the SAS Forecast Batch Interface.

How to Migrate Using the SAS Migration Utility

To perform a migration using the SAS Migration Utility:


2. Review the analysis report generated by the SAS Migration Utility.

Tip: If you are migrating from release 2.1, the analysis report generated by the SAS Migration Utility lists the file system paths for all implied forecasting environments. Those paths are detected indirectly using project definitions. Therefore, only paths that host at least one active project are detected.
3. For each of your forecasting environments, copy each content file from the source machine to the matching location on the destination machine.

   Note: You must create a directory structure in the destination file system that matches the directory structure in the source file system. For example, if the content is located in the C:\Forecasting directory, then you must create a C:\Forecasting directory in the destination file system to store the content.

4. Start the SAS Deployment Wizard from your SAS Software Depot.

5. When you are prompted, select Perform migration, and then click Browse to specify the SAS Migration Utility Package Directory.

6. Complete the remaining steps in the SAS Deployment Wizard.

7. Assign appropriate user permissions to the forecasting environment directories on the destination file system.

8. Review and configure metadata permissions. The metadata that is copied from the source deployment retains its permissions. However, any metadata that is generated with the migration is configured to use default permissions.

   Note: You can update multiple projects to use the current project version. In the SAS Forecast Server Plug-ins for SAS Management Console, right-click on a forecasting environment under the Forecast Server folder, and select Batch Operations Update. You can update a single project as well. In addition, updates can be performed with SAS Forecast Server macros or the SAS Forecast Project Manager. For more information about batch operations or updating, see the online Help for the SAS Forecast Server Plug-ins for SAS Management Console, the online Help for the SAS Forecast Project Manager, or the online Help for the SAS Forecast Batch Interface.

Option 2: Automatic Registration

About Automatic Registration

The SAS Forecast Server Plug-ins for SAS Management Console include several forecasting environment features that you can use for migration. The automatic registration feature searches through a newly registered forecasting environment for any unregistered projects. It then automatically registers them. Using the plug-ins, you can manually define a new forecasting environment (using the Register Environment command) that points to a directory structure that you copy from an existing deployment of the SAS Forecast Server. In addition, the plug-ins offer an automatic registration option to re-create metadata registrations with default permissions for all content in the directory structure.

   Note: Even with automatic registration, you must still copy content to a matching location in the new file system to ensure project integrity.

How to Migrate Using Automatic Registration

To perform a migration using automatic registration:

1. For each of your forecasting environments, copy each content file from the source machine to the matching location on the destination machine.
Note: You must create a directory structure in the destination file system that matches the directory structure in the source file system. For example, if the content is located in the \Forecasting directory, then you must create a C:\Forecasting directory in the destination file system to store the content.

T I P If you are migrating from release 2.1, the analysis report generated by the SAS Migration Utility lists the file system paths for all implied forecasting environments. Those paths are detected indirectly using project definitions. Therefore, only paths that host at least one active project are detected.

2. Assign appropriate user permissions to the forecasting environment directories in the new file system.

3. After you have installed and configured the SAS Forecast Server, open SAS Management Console, and log on with a user account that has been configured to use the SAS Forecast Server Plug-ins for SAS Management Console. The user account must also be configured to use the SAS Forecast Server administrator capabilities.

4. Right-click the Forecast Server folder on the Plug-ins tab, and select Register Environment. The Register Environment dialog box appears.

5. In the Register Environment dialog box:
   a. Enter a name for the forecasting environment.
   b. Enter a description for the forecasting environment. The description is optional.
   c. Select the Host name of the SAS Workspace Server. The first available SAS Workspace Server is selected by default. You can select a different server from the menu.
   d. Enter a location or click Browse to specify the location of the file system content.
   e. Specify the metadata location of the Reports folder.
   f. Select Automatically register all projects within this environment to execute project registration.
   g. Click OK.

6. Review and configure metadata permissions for the project metadata objects.

Note: If you have an existing forecasting environment or if you selected to not automatically register all of the projects in the forecasting environment, you can register multiple projects at any time. Right-click on a forecasting environment under the Forecast Server folder, and select Batch Operations ⇒ Register. You can update multiple projects to use the current project version. Right-click on a forecasting environment under the Forecast Server folder, and select Batch Operations ⇒ Update. You can update a single project as well. In addition, updates can be performed with SAS Forecast Server macros or the SAS Forecast Project Manager. For more information about the batch operations or updating, see the online Help for the SAS Forecast Server Plug-ins for SAS Management Console, the online Help for the SAS Forecast Project Manager, or the online Help for the SAS Forecast Batch Interface.
Option 3: Archives

About Archives

As in previous releases, you can archive individual projects into a portable format, and then you can unarchive them into working projects in a separate deployment of the SAS Forecast Server. This functionality is supported in the macros (including the batch archive operations). In addition, it is supported in the SAS Forecast Project Manager and the SAS Forecast Server Plug-ins for SAS Management Console. The archives option is slower. However, this option is the option that should be used in most cases. For example, the archives option should be used for migration across architectures, migration across forecasting environments, selective migration, and so on. Unlike the other two options, the archives option moves all of the file system content in the archive files. However, this option is limited to migrating projects. If you want to migrate the forecasting environment details, you must use another option.

Tip The macros for reporting (FSGETENV) and creating (FSNEWENV and FSREGENV) forecasting environments can be used to migrate environment definitions.

How to Migrate Using Archives

Archive files must be created on the source file system before beginning the migration process. For information about creating archive files, see the documentation on the currently installed release of the SAS Forecast Server.

To perform a migration using archives:

1. Export the project. (This should be a project that was created with a previous release of the SAS Forecast Server.)
   - If you are upgrading from release 3.1 or later, you can use the FSEXPORT or FSEXPALL macro in the SAS Forecast Server Plug-ins for SAS Management Console to archive your projects.

2. After you have installed and configured the SAS Forecast Server, open SAS Management Console, and log on with a user account that has been configured to use the SAS Forecast Server Plug-ins for SAS Management Console. The user account must also be configured to use the SAS Forecast Server administrator capabilities.
   Note: The following steps can be performed using SAS Forecast Server macros or the SAS Forecast Project Manager.


4. In the Create Environment dialog box:
   a. Enter a name for the forecasting environment.
   b. Enter a description for the forecasting environment. The description is optional.
   c. Select the Host name of the SAS Workspace Server. The first available SAS Workspace Server is selected by default. You can select a different server from the menu.
d. Enter a location or click **Browse** to specify the location of the file system content.

e. Specify the metadata location of the **Reports folder**.

f. Click **OK**.

5. Assign user permissions to the forecasting environment directories on the new file system.

6. Right-click on the forecasting environment under the **Forecast Server** folder in which you want to add the project, and select **Unarchive Project**. The Unarchive dialog box appears.

7. Enter a location or click **Browse** to specify the location of the archive file.

8. Click **OK**.

*Note:* You can import multiple projects if the archive files are in the same directory. Right-click on the forecasting environment under the **Forecast Server** folder, and select **Batch Operations** ⇒ **Unarchive**. You can update multiple projects to use the current project version. Right-click on the forecasting environment under the **Forecast Server** folder, and select **Batch Operations** ⇒ **Update**. You can update a single project as well. In addition, updates can be performed with SAS Forecast Server macros or the SAS Forecast Project manager. For more information about the batch operations or updating, see the online Help for the SAS Forecast Server Plug-ins for SAS Management Console, the online Help for the SAS Forecast Project Manager, or the online Help for the SAS Forecast Batch Interface.
Chapter 3
Migrating Environments on the Same Machine

About Performing a Migration on the Same Machine

When you use the SAS Migration Utility and the SAS Deployment Wizard to perform a migration on the same machine, the destination (also called migrated) deployment is staged with a copy of the product metadata from the source deployment. However, the copied product metadata references the same file system content as the source deployment. This is because the metadata configuration assumes the destination deployment will replace the source deployment. When this replacement occurs, the destination deployment inherits the file system content.

If you intend to continue using the source deployment in addition to the destination deployment, then additional steps are required. You must create a copy of the file system content in a different location. In addition, you must change the product metadata in the destination deployment to reference the copy of the file system content, rather than referencing the file system content in the source deployment. To ensure that all metadata references and internal references are updated correctly, copies must be made using the SAS Forecast Server. Do not move file system content using operating system tools because they corrupt the content.

How to Migrate Environments on the Same Machine

Note: Complete these steps after using the SAS Migration Utility.

To create two independent deployments of the SAS Forecast Server that use the same file system:

1. Shut down the source deployment of the SAS Forecast Server.

   CAUTION: Running two deployments of the SAS Forecast Server simultaneously when both deployments access the same file system content can result in data
loss. By shutting down the source deployment, the destination deployment has exclusive access to the file system content so that the content can be copied. Each deployment will then have its own copy of the content.

2. For each migrated forecasting environment, use tools from the destination deployment to copy the content from the source deployment.

3. Use either the SAS Forecast Server Plug-ins for SAS Management Console, the SAS Forecast Project Manager, or SAS Forecast Server macros to unregister each migrated forecasting environment. Only the copied forecasting environments should remain.

   **CAUTION:**
   
   Do not use Delete instead of Unregister. Selecting Unregister removes the metadata of the environment without changing the file system content. Selecting Delete removes the file system content also.

4. Use either the SAS Forecast Server Plug-ins for SAS Management Console, the SAS Forecast Project Manager, or SAS Forecast Server macros to rename each copied environment to match the name of the environment from which it was copied. This step is optional.

   For example, suppose that the forecasting environment that you copied in step 2 is named Sales. So, you name the copied environment SalesCopy. Now that only the SalesCopy forecasting environment exists (because you unregistered the original Sales environment in step 3), you can rename the copied environment Sales and there will be no naming conflict.

Each deployment has its own exclusive area for environments. You can restart the source deployment of the SAS Forecast Server.
Chapter 4
Migrating Reports

Directories Specified in the Source File Field

Note: An incompatibility was identified in release 2.1 between sample report objects and SPK files. Specifically, in release 2.1, the Source file field for a sample report object is restricted to accept only a simple filename. (It should not include a directory name.) The Source file field in later releases does not have this restriction. As a result, a problem might occur if you migrate report objects from release 2.1. When importing an SPK file that contains report objects, the attempt to import the source file fails. To prevent this problem, you must manually create any directory specified in the Source file field before you import.

To successfully migrate report objects, do one of the following:

• Correct the filename (remove any other information) in the Source file field in the source file system before importing the SPK file.

• Manually create the directory in the destination file system before importing the SPK file. If you do this, you should also correct the Source file field values in the destination file system after importing the SPK file to avoid future problems.

Considerations When Migrating Reports

Before migrating your reports from release 2.1, you must consider how you would like to organize them in the new file system. Prior to release 3.1, reports for all projects were stored together in a single global tree in the metadata. This single global tree was shown with no filtering from the Reports and Stored Processes dialog box in SAS Forecast Studio. It was the user’s responsibility to ensure that each stored process was indeed a report and that it was configured to execute on the SAS Workspace Server that hosts the project.
Starting with release 3.1, you can have a separate reports area within the metadata for each forecasting environment. The location of this reports area is configurable (using the SAS Forecast Server Plug-ins for SAS Management Console or the SAS Forecast Project Manager). When a report is registered in metadata, its stored process metadata object is configured to use the FS_REPORT keyword. A sample report is configured to use the FS_SAMPLE keyword. Reports that appear in the Reports and Stored Processes dialog box are filtered. This means that all reports that are shown are appropriate for the current user and project.

*Note:* Because reports are managed the same way in release 3.1 and later, you do not need to organize your reports when migrating between these releases.

To appear in the Reports and Stored Processes dialog box, your report must meet the following conditions:

- The reports area for the project’s forecasting environment must be configured.
- The report’s stored process metadata object must be located in the reports area.
- The user must have ReadMetadata permission to the report.
- The report’s stored process metadata object must have the keyword FS_REPORT, which identifies it as a SAS Forecast Server report.
- The report’s stored process metadata object must be configured to execute on the same SAS Workspace Server that hosts the project. (This is the same SAS Workspace Server that hosts the project’s forecasting environment.)

*Note:* To simplify the task of migrating reports that do not have the FS_REPORT keyword, the SAS Forecast Server Plug-ins for SAS Management Console and the SAS Forecast Project Manager provide a **Search** command. This command automatically adds the FS_REPORT keyword to any stored process metadata object that is found in the reports area. It is recommended that you use the **Search** command when you are importing a large collection of reports.

As you migrate reports, you might need to package reports in multiple SPK files. This enables you to import reports into separate report areas.

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**Import Reports to the SAS Forecast Server 12.1**

**Import Reports to the SAS Forecast Server 12.1**

To import reports to the SAS Forecast Server 12.1:

1. Start SAS Management Console. Connect as a SAS administrator (for example, sasadm@saspw).
2. Click the **Folders** tab.
3. Right-click on the root report folder, and select **Import SAS Package**. The Import SAS Package Wizard opens.
4. Enter the location of the SAS package file or click **Browse**. Select **All Objects**. Click **Next**.
5. In the Select Objects to Import step, all objects are selected for import. You can select a subset of the objects if you do not want to import all of them. Click **Next**.
6. In the About Metadata Connections step, information about the objects that you are importing, application servers, and other servers appears. Click **Next**.
7. In the SAS Application Servers step, specify the SAS Application Server. Click Next.

8. In the Source Code Repositories step, select the target path for the source code repository. Click Next.

9. Review the Summary page. Click Next to start the import process.

10. After the import process completes, click Finish.

---

Post-Migration Tasks for Reports

*Note:* These post-migration steps are required only when you are migrating reports created with release 2.1 or earlier.

After you have migrated reports to the current release, you might need to modify the code. Whether you need to modify the code should be determined on a case-by-case basis. Code modifications can include the following:

- changes to the macros provided for reports, including new macros
- a change to how multiple-value parameters are passed to the code
- enhanced support for libraries
- enhanced support for dynamically populated parameters (for example, parameters with options that are generated by the SAS Forecast Server at run time)
- enhanced output format and style support

*Note:* For more information about modifying code, see “Creating Reports” in Chapter 6 of *SAS Forecast Server: Administrator’s Guide.*

In most cases, to make your reports usable with release 3.1 or later, you can modify the preamble code in the source code file to use the same code that is used by sample reports. The preamble code in the source code file is shown below:

```sas
* ProcessBody;

/*------------------------------------------*/
/*- initialize the HPF stored process support */
/*------------------------------------------*/
%hpfstp();

/*------------------------------------------*/
/*- initialize the ODS output               */
/*------------------------------------------*/
%HPF_InitODSOutput();

%stpbegin;

/*------------------------------------------*/
/*- convert any list parameters to space-delimited lists */
/*------------------------------------------*/
%HPF_MergePromptListParameters();
```

---

7. In the SAS Application Servers step, specify the SAS Application Server. Click Next.

8. In the Source Code Repositories step, select the target path for the source code repository. Click Next.

9. Review the Summary page. Click Next to start the import process.

10. After the import process completes, click Finish.
/*- include the LIBNAME statements for the project  -*/
/*---------------------------------------------------------*/
$include "&HPF_INCLUDE";