

# Chapter 1

## Overview of SAS Data Integration

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## About SAS Data Integration

Data integration is the process of consolidating data from a variety of sources in order to produce a unified view of the data. SAS supports data integration in the following ways:

- **Connectivity and metadata.** A shared metadata environment provides consistent data definition across all data sources. SAS software enables you to connect to, acquire, store, and write data back to a variety of data stores, streams, applications, and systems on a variety of platforms and in many different environments. For example, you can

manage information in Enterprise Resource Planning (ERP) system, relational database management systems (RDBMS), flat files, legacy systems, message queues, and XML.

- Data cleansing and enrichment. Integrated SAS Data Quality software enables you to profile, cleanse, augment, and monitor data to create consistent, reliable information. SAS Data Integration Studio provides a number of transformations and functions that can improve the quality of your data.
- Extraction, transformation, and loading. SAS Data Integration Studio enables you to extract, transform, and load data from across the enterprise to create consistent, accurate information. It provides a point-and-click interface that enables designers to build process flows, quickly identify inputs and outputs, and create business rules in metadata, all of which enable the rapid generation of data warehouses, data marts, and data streams.
- Migration and synchronization. SAS Data Integration Studio enables you to migrate, synchronize, and replicate data among different operational systems and data sources. Data transformations are available for altering, reformatting, and consolidating information. Real-time data quality integration allows data to be cleansed as it is being moved, replicated, or synchronized, and you can easily build a library of reusable business rules.
- Data federation. SAS Data Integration Studio enables you to query and use data across multiple systems without the physical movement of source data. It provides virtual access to database structures, ERP applications, legacy files, text, XML, message queues, and a host of other sources. It enables you to join data across these virtual data sources for real-time access and analysis. The semantic business metadata layer shields business staff from underlying data complexity.
- Master data management. SAS Data Integration Studio enables you to create a unified view of enterprise data from multiple sources. Semantic data descriptions of input and output data sources uniquely identify each instance of a business element (such as customer, product, and account) and standardize the master data model to provide a single source of truth. Transformations and embedded data quality processes ensure that master data is correct.

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## Advantages of SAS Data Integration

SAS data integration projects have a number of advantages over projects that rely heavily on custom code and multiple tools that are not well integrated.

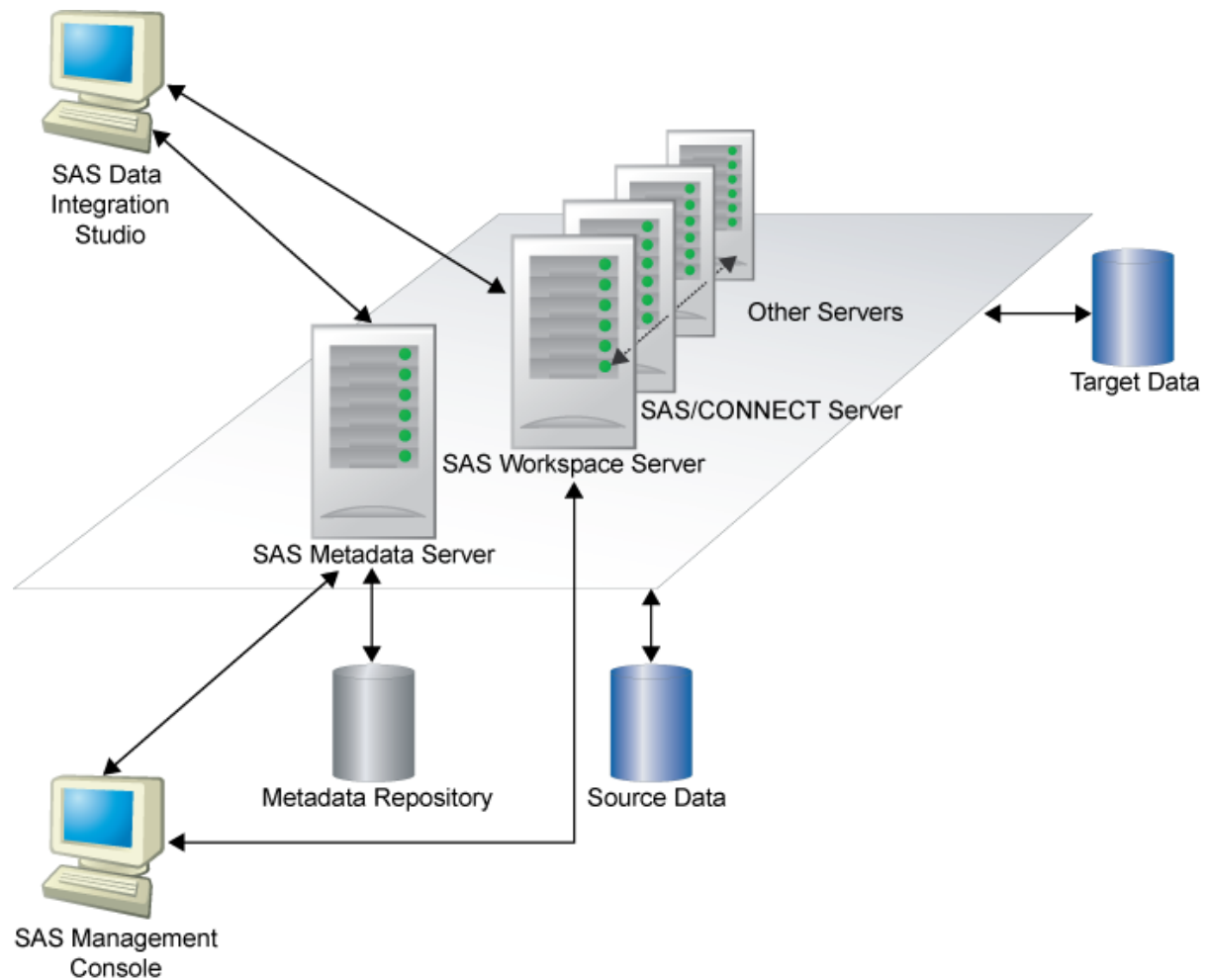
- SAS data integration reduces development time by enabling the rapid generation of data warehouses, data marts, and data streams.
- It controls the costs of data integration by supporting collaboration, code reuse, and common metadata.
- It increases returns on existing IT investments by providing multi-platform scalability and interoperability.
- It creates process flows that are reusable, easily modified, and have embedded data quality processing. The flows are self-documenting and support data lineage analysis.

## A Basic Data Integration Environment

### Overview of a Data Integration Environment

The following figure shows the main clients and servers in a SAS data integration environment.

**Figure 1.1** SAS Data Integration Studio Environment



Administrators use SAS Management Console to connect to a SAS Metadata Server. They enter metadata about servers, libraries, and other resources on your network and save this metadata to a repository. SAS Data Integration Studio users connect to the same metadata server and register any additional libraries and tables that they need. Then, they create process flows that read source tables and create target tables in physical storage.

### SAS Management Console

SAS Management Console provides a single interface through which administrators can explore and manage metadata repositories. With this interface, administrators can

efficiently set up system resources, manage user and group accounts, and administer security.

### **SAS Data Integration Studio**

SAS Data Integration Studio is a visual design tool for building, implementing and managing data integration processes regardless of data sources, applications, or platforms. Through its metadata, SAS Data Integration Studio provides a single point of control for managing the following resources:

- data sources, from any platform that is accessible to SAS and from any format that is accessible to SAS
- data targets, to any platform that is accessible to SAS, and to any format that is supported by SAS
- processes that specify how data is extracted, transformed, and loaded from a source to a target
- jobs that organize a set of sources, targets, and processes (transformations)
- source code that is generated by SAS Data Integration Studio
- user-written source code

## **Servers**

### **SAS Application Servers**

When the SAS Intelligence Platform was installed at your site, a metadata object that represents the SAS server tier in your environment was defined. In the SAS Management Console interface, this type of object is called a SAS Application Server. By default, this application server is named **SASApp**.

A SAS Application Server is not an actual server that can execute SAS code submitted by clients. Rather, it is a logical container for a set of application server components, which do execute code—typically SAS code, although some components can execute Java code or MDX queries. For example, a SAS Application Server might contain a workspace server, which can execute SAS code that is generated by clients such as SAS Data Integration Studio. A SAS Application Server might also contain a stored process server, which executes SAS Stored Processes, and a SAS/CONNECT Server, which can upload or download data and execute SAS code that is submitted from a remote machine.

The following table lists the main SAS Application Server components and describes how each one is used.

**Table 1.1** SAS Application Servers

<b>Server</b>	<b>How the Server Is Used</b>	<b>How the Server Is Specified</b>
SAS Workspace Server	Executes SAS code; reads and writes data.	As a component in a SAS Application Server object.
SAS/CONNECT Server	Submits generated SAS code to machines that are remote from the default SAS Application Server; can also be used for interactive access to remote libraries.	As a component in a SAS Application Server object.

Server	How the Server Is Used	How the Server Is Specified
SAS OLAP Server	Creates cubes and processes queries against cubes.	As a component in a SAS Application Server object.
Stored Process Server	Submits stored processes for execution by a SAS session. Stored processes are SAS programs that are stored and can be executed by client applications.	As a component in a SAS Application Server object.
SAS Grid Server	Supports a compute grid that can execute grid-enabled jobs that are created in SAS Data Integration Studio.	As a component in a SAS Application Server object.

Typically, administrators install, start, and register SAS Application Server components. SAS Data Integration Studio users are told which SAS Application Server object to use.

### **SAS Data Servers**

The following table lists two special-purpose servers for managing SAS data.

**Table 1.2** SAS Data Servers

Server	How the Server Is Used	How the Server Is Specified
SAS/SHARE Server	Enables concurrent access of server libraries from multiple users.	In a SAS/SHARE library.
SAS Scalable Performance Data (SPD) Server	Provides parallel processing for large SAS data stores; provides a comprehensive security infrastructure, backup and restore utilities, and sophisticated administrative and tuning options.	In an SPD Server library.

Typically, administrators install, start, and register these servers and register the SAS/SHARE library or the SPD Server library. SAS Data Integration Studio users are told which library to use.

### **Database Management System (DBMS) Servers**

SAS Data Integration Studio uses a SAS Application Server and a database server to access tables in database management systems such as Oracle and DB2.

When you start the Register Tables wizard or the New Tables wizard, the wizard tries to connect to a SAS Application Server. You are then prompted to select an appropriate database library. SAS Data Integration Studio uses the metadata for the database library to generate a SAS/ACCESS LIBNAME statement, and the statement is submitted to the SAS Application Server for execution.

The SAS/ACCESS LIBNAME statement specifies options that are required to communicate with the relevant database server. The options are specific to the DBMS to which you are connecting. For example, here is a SAS/ACCESS LIBNAME statement that can be used to access an Oracle database:

```
libname mydb oracle user=admin1 pass=admin  
path='V2o7223.world'
```

Typically, administrators install, start, and register DBMS servers and register the DBMS libraries. SAS Data Integration Studio users are told which library to use.

### **Enterprise Resource Management (ERM) Systems**

Optional Composite Software provides access to ERM systems such as Siebel, PeopleSoft, Oracle Applications and Salesforce.com. An optional data surveyor wizard provides access to SAP ERM systems. For details about Composite Software and the data surveyor wizard for SAP ERM systems, see the *SAS Intelligence Platform: Data Administration Guide*.

## **Libraries**

In SAS software, a library is a collection of one or more files that are recognized by SAS and that are referenced and stored as a unit. Libraries are critical to SAS Data Integration Studio. You cannot begin to enter metadata for sources, targets, or jobs until the appropriate libraries have been registered in a metadata repository.

Accordingly, one of the first tasks in a SAS Data Integration Studio project is to specify metadata for the libraries that contain sources, targets, or other resources. At some sites, an administrator adds and maintains most of the libraries that are needed, and the administrator tells SAS Data Integration Studio users which libraries to use.

## **Additional Information**

For more information about setting up a data integration environment, administrators should see see “[Administrative Documentation for SAS Data Integration Studio](#)” on page 9.

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## **Online Help for SAS Data Integration Studio**

The online Help describes all windows in SAS Data Integration Studio, and it includes all topics in the user's guide. The Help also includes a What's New topic and a set of Usage Note topics for the current version of the software.

Perform the following steps to display the main Help window for SAS Data Integration Studio.

1. Start SAS Data Integration Studio.
2. From the menu bar, select **Help** ⇒ **Contents**. The main Help window displays.

To display the Help for an active window or tab, click its **Help** button. If the window or tab does not have a **Help** button, press the **F1** key.

To search for topics about concepts or features that are identified by specific words, such as “application server,” display the main Help window. Then, click the **Search** tab (magnifying glass icon). Enter the text to be found and press the **Enter** key.

## Administrative Documentation for SAS Data Integration Studio

Administrative tasks that are performed outside of the SAS Data Integration Studio interface are described in SAS Intelligence Platform documentation, which can be found at the following location: <http://support.sas.com/92administration>.

The following table identifies the main SAS Intelligence Platform documentation for SAS Data Integration Studio.

**Table 1.3** SAS Intelligence Platform Documentation for SAS Data Integration Studio

Administrative Task	Related Documentation
<ul style="list-style-type: none"> <li>• Set up a folder structure for your site in the <b>Folders</b> tree.</li> <li>• Promote metadata (additional information and metadata export and import).</li> <li>• Start, stop, and check the status of servers.</li> <li>• Monitor the system and set up system logs.</li> <li>• Back up and restore your system.</li> <li>• Optimize the performance of the SAS Metadata Server.</li> <li>• Manage SAS metadata repositories.</li> </ul>	SAS Intelligence Platform: System Administration Guide
<ul style="list-style-type: none"> <li>• Set up security.</li> </ul>	SAS Intelligence Platform: Security Administration Guide
<ul style="list-style-type: none"> <li>• Set up data servers and libraries for common data sources.</li> </ul>	SAS Intelligence Platform: Data Administration Guide
<ul style="list-style-type: none"> <li>• Set up SAS Application Servers.</li> </ul>	SAS Intelligence Platform: Application Server Administration Guide
<ul style="list-style-type: none"> <li>• Set up grid computing (so that jobs can execute on a grid).</li> </ul>	Grid Computing for SAS 9.2
<ul style="list-style-type: none"> <li>• Set up scheduling for jobs that have been deployed for scheduling.</li> </ul>	Scheduling In SAS

Administrative Task	Related Documentation
<ul style="list-style-type: none"> <li>• Set up change management.</li> <li>• Set up servers and libraries for remote data (multi-tier environments).</li> <li>• Set up support for message queue jobs.</li> <li>• Set up support for Web service jobs and other stored process jobs.</li> <li>• Enable the bulk-loading of data into target tables in a DBMS.</li> <li>• Set up SAS Data Quality software.</li> <li>• Set up support for job status handling.</li> <li>• Set up support for FTP and HTTP access to external files.</li> </ul>	SAS Intelligence Platform: Desktop Application Administration Guide
<ul style="list-style-type: none"> <li>• Work with SAS OLAP cubes.</li> </ul>	SAS OLAP Server: User's Guide

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## Accessibility Features in SAS Data Integration Studio

### Overview

SAS Data Integration Studio includes features that improve usability of the product for users with disabilities. These features are related to accessibility standards for electronic information technology that were adopted by the U.S. Government under Section 508 of the U.S. Rehabilitation Act of 1973, as amended.

If you have questions or concerns about the accessibility of SAS products, send e-mail to [accessibility@sas.com](mailto:accessibility@sas.com).

### Enabling Assistive Technologies

For instructions about how to configure SAS Data Integration Studio software so that assistive technologies work with the application, see the information about downloading the Java Access Bridge in the section about accessibility features in the *SAS Intelligence Platform: Desktop Application Administration Guide*.

### Accessibility Standards

SAS Data Integration Studio follows the standards that are recommended in the *Java Look and Feel Design Guidelines, Second Edition* (available at [java.sun.com](http://java.sun.com)). All known exceptions are documented in the following table. SAS is committed to improving the accessibility and usability of our products. Many of the issues will be addressed within future releases of the application.



Table 1.4 Accessibility Exceptions

Accessibility Issue	Support Status	Explanation
Keyboard equivalents for user actions.	Supported with exceptions	<p>The software supports keyboard equivalents for all user actions. Tree controls in the user interface can be individually managed and navigated through using the keyboard. However, some exceptions exist. Some ALT key shortcuts are not functional. Also, some more advanced manipulations require a mouse. Still, the basic functionality for displaying trees in the product is accessible from the keyboard.</p> <p>Based on guidance from the Access Board, keyboard access to drawing tasks does not appear to be required for compliance with Section 508 standards. Accordingly, keyboard access does not appear to be required for the <b>Diagram</b> tab in the Job Editor window, or the <b>Designer</b> tab in the SQL Join properties window.</p> <p>Specifically, use of the <b>Diagram</b> tab in the Job Editor and the <b>Designer</b> tab in the SQL Join Properties window are functions that cannot be discerned textually. Both involve choosing a drawing piece, dragging it into the workspace, and designing a flow. These tasks require a level of control that is provided by a pointing device. Moreover, the same result can be achieved by editing the source code for flows.</p> <p><b>Example:</b> Use of the <b>Diagram</b> tab in the Job Editor is designed for visual rather than textual manipulation. Therefore, it cannot be operated via keyboard. If you have difficulty using a mouse, then you can create process flows with user-written source code.</p> <p>The software supports keyboard equivalents to navigating between different prompts in a window. If the TAB key does not move focus to the next prompt, press CTRL+TAB to access the next prompt.</p> <p>When you are defining or editing a static list in a prompt, if pressing SPACEBAR once does not select or clear the check box or radio button, then press SPACEBAR twice to select or clear a default value selection.</p> <p>If focus is transferred to another prompt after you finish editing a row, use the TAB key or SHIFT+TAB until focus is back on the prompt you want, and then you can use the TAB key or the arrow keys to navigate through the rows of values.</p>

Accessibility Issue	Support Status	Explanation
Keyboard equivalents for user actions.	Supported with exceptions	In a window with multiple tabs, sometimes pressing CTRL+TAB can switch to another tab instead of moving to the next prompt in the current tab. If the current prompt exhibits this behavior, press TAB instead of CTRL+TAB to move focus to the next prompt in the current tab. In general, press TAB to move to the next prompt in the current tab, and press only CTRL+TAB if TAB by itself adds space to the current prompt.
Identity, operation, and state of interface elements.	Supported with exceptions	In some wizards, identity, operation, and state of some interface elements is ambiguous. SAS plans to address these issues in a future release.  <b>Example:</b> When you select a library in the Register Tables wizard, you must use the SAS Library combo box. If you are using the JAWS screen reader, the reader immediately reads not only the library name but also all of its details. If you want to know the libref, you must know that the label exists and that its shortcut is ALT+F. Then, you must press ALT+F so that the JAWS screen reader reads the label and its read-only text. You can move among the items in Library Details only after you use a shortcut to get to one of them.
Application override of user-selected contrast and color selections and other individual display attributes.	Supported with exceptions	SAS Data Integration Studio inherits the color and contrast settings of the operating system with the following exception:  As with most other Java applications, system font settings are not inherited in the main application window. If you need larger fonts, then consider using a screen magnifier.
Color alone as the only significant difference in controls or displays.	Supported with exceptions	In the Authorization dialog box, and on the <b>Authorization</b> tab in the properties windows for some objects, the background colors of the check boxes in the permissions table indicate how a permission is assigned. For information about the meaning of each color, see the Help for the <b>Authorization</b> tab or dialog box.

Accessibility Issue	Support Status	Explanation
Electronic forms and displays.	Supported with exceptions	<p>When navigating with a keyboard to choose a path in the Browse dialog box, the focus disappears. To work around the problem, either (1) count the number of times that you press the TAB key and listen closely to the items, or (2) type the path explicitly.</p> <p>When the user sets the operating system settings to high contrast, some attributes of that setting are not inherited. <b>Example:</b> In some wizards such as the Register Tables wizard, the visual focus can disappear sometimes when you operate the software with only a keyboard. If so, continue to press the TAB key until an interface element regains focus.</p>
F1 key	SAS plans to address this issue in a future release.	The F1 key does not open the Help for the New Prompt and Edit Prompt dialog boxes. The workaround is to click the <b>Help</b> button at the bottom of dialog boxes.
JAWS reader	SAS plans to address this issue in a future release.	For any window or dialog box that contains a table, JAWS cannot read the column and row headings. JAWS can read the contents of the table cells, but not the headings, so the context might be confusing.
JAWS focus on a list box	SAS plans to address this issue in a future release.	<p>For any Open, Save, or Select dialog box that does not display items in a tree, when the focus is on the list box, JAWS can read the name of the selected item only. If you use the arrow keys to navigate through the list of items, JAWS does not read the names of any of the items that are not selected.</p> <p>To enable JAWS to read the name of an item, select the item in the list box, and then use the TAB key to move back into the list box. After you move back into the list box, JAWS can read the name of the selected item.</p>

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## Upgrading from Earlier Versions

### Overview

SAS Data Integration Studio users who are migrating to version 4.2 should take special note of the following changes:

- [“Objects That Are Not Migrated” on page 14](#)
- [“Updates to Jobs and Transformations During Migration” on page 14](#)

- “User Action Required for Migrated Jobs with Data Quality Transformations” on page 15
- “Updates to Jobs and Transformations during Partial Promotion” on page 15
- “Changes to the Tree View” on page 16
- “SAS Workspace Server Requirements for New Jobs” on page 16
- “Impacts on Change Management” on page 17
- “Impacts on SAS Solutions” on page 17
- “Migration Web Site” on page 17

### **Objects That Are Not Migrated**

SAS 9.1 metadata objects for external files, and any jobs that include these objects, will not be migrated. The external files must be re-registered in the 9.2 environment. Any jobs that include SAS 9.1 metadata objects for external files must be recreated in the 9.2 environment.

The Forecasting transformation is not supported in SAS Data Integration Studio 4.2. Jobs that include the Forecasting transformation will not be migrated.

User-defined job status Conditions and Actions are not supported in SAS Data Integration Studio 4.2. Jobs that include custom Conditions and Actions will not be migrated.

### **Updates to Jobs and Transformations During Migration**

After migration, you will see the following changes to jobs and transformations.

All migrated transformations, including generated transformations before 3.2, are converted to use the new prompting framework. For most users, the main impact of this change is on the **Options** tab for transformations. It is now easier to select options from this tab. After migration, jobs with updated transformations should produce the same output as before.

Any versions of the Table Loader transformation and the SQL Join transformation created before version 3.4 are replaced with the latest versions of these transformations. After migration, jobs with converted transformations should produce the same output as before.

Any job whose process flow included a separate Report transformation, such as Correlations Report and Frequency Report, no longer have that transformation in the process flow. The need for separate Report transformations has been eliminated. After migration, jobs that used to require the Report transformations should produce the same output as before.

All jobs that were deployed for scheduling or were deployed as stored processes should be redeployed in the SAS 9.2 environment. From the SAS Data Integration Studio desktop, you can select **Tools** ⇒ **Redeploy Jobs for Scheduling** or **Tools** ⇒ **Redeploy Jobs to Stored Processes**.

Any job that was deployed as a Web Service in SAS Data Integration Studio 3.4 now appears in the Stored Process folder of the Inventory tree, not the Web service (generated) folder. This special kind of stored process can be used as before.

## **User Action Required for Migrated Jobs with Data Quality Transformations**

If jobs that include the Create Match Code transformation do not run successfully after migration, verify that the appropriate Quality Knowledge Base (QKB) location value (DQSETUPLOC value), is specified on the global options window for SAS Data Integration Studio. To verify the DQSETUPLOC value, select **Tools** ⇒ **Options** from the menu bar, click the **Data Quality** tab, and then verify that the appropriate value is specified in the **DQ Setup Location** field.

Jobs that include the Apply Lookup Standardization transformation will not run successfully after migration until you take one of the following actions:

- Open each affected job and replace the migrated Apply Lookup Standardization transformation with a new (4.2) Apply Lookup Standardization transformation. You must also restore the mappings in each job.
- Alternatively, you can go back to your SAS Data Integration Studio 3.4 environment, export the original Apply Lookup Standardization jobs to SAS 9.1.3 package format, and then use the Import SAS Package wizard in SAS Data Integration Studio 4.2 to convert and register these jobs on your metadata server.

*Note:* The export SAS Package method is possible only if you are using SAS 9.1.3 Service Pack 4, with SAS Data Integration Studio 3.4, and the 34DATABLEDR09 hotfix installed.

The following additional steps are required in order for the export SAS Package method to work:

1. (Optional) In SAS Data Integration Studio 4.2, if you are not using the migrated jobs that include the Apply Lookup Standardization transformation, delete them. Otherwise, you have to manage multiple copies of the same metadata objects when you import the same jobs as a SAS Package.
2. In SAS Data Integration Studio 3.4, create a package of jobs that use the same scheme repository type in the Apply Lookup Standardization. Create one package for the BFD scheme type and a separate package for the NOBFD scheme type.
3. In SAS Data Integration Studio 4.2, verify that the default DQ Setup Location is correct, and that the default Scheme Repository Type matches the type (BFD or NOBFD) for the package of jobs that you are importing.

To verify these values before importing the SAS Package, select **Tools** ⇒ **Options** from the menu bar, click the **Data Quality** tab, and then verify that the appropriate value is specified in the **DQ Setup Location** field. Then specify the appropriate values in the **DQ Setup Location** field and the **Scheme Repository Type** field. The **DQ Setup Location** field should specify appropriate Quality Knowledge Base (QKB) location value (DQSETUPLOC value). The **Scheme Repository Type** field should match the type (BFD or NOBFD) for the package of jobs that you are importing.

When the package is imported, the job and its transformations are updated as they are during migration. The Apply Lookup Standardization transformation uses the default scheme repository values, and if the values are correct the transformation runs successfully.

## **Updates to Jobs and Transformations during Partial Promotion**

You might have jobs stored in locations that are not part of the migration process. If these jobs can be exported to SAS 9.1.3 Package format, you can use the Import from SAS

Package wizard in SAS Data Integration Studio 4.2 to convert and register these jobs on your metadata server.

If you have jobs that were exported in XML format before SAS Data Integration Studio 3.4., you must either include these jobs in a system migration, or import them in SAS Data Integration Studio 3.4, export them as a SAS Package, then import the SAS Package in SAS Data Integration Studio 4.2.

*Note:* When a job in SAS 9.1.3 Package format is imported with the SAS 9.2 Import from SAS Package wizard, the job and its transformations are updated as they are during migration.

## Changes to the Tree View

After migration, you will see the following changes to the tree view on the left side of the desktop.

The Custom tree is now called the Folders tree. Any user-defined folders in the Custom tree now appear in the Folders tree. If a migrated or imported object was not located in a folder, and it is an object type that requires a folder, it is placed in the Shared Data folder.

My Folder is the private folder of the user who is currently logged on. Metadata in this folder is visible only to the current user and to unrestricted users. When you add a new metadata object, and you want to share it with other users, do not save it to My Folder.

In the Folders tree, you cannot have duplicate objects with the same name in the same folder. Accordingly, after migration or when importing metadata from versions before version 4.2, if there were duplicate objects with the same name in the same folder, a number will be added as a suffix to the duplicate file name (filename(1), filename(2), etc.). Also, metadata objects can no longer have slash characters in their names. If a migrated or imported object had slash characters in its name, the slashes are replaced by underscores.

Unlike the Custom tree, in the Folders tree, you cannot drag and drop objects from one top-level folder to another. Instead, you can right-click the object and select **Move to Folder**.

The Inventory tree now contains folders for more kind of objects. Most of the time, however, SAS Data Integration Studio users work with the same objects as before, such as tables, libraries, and jobs. Some actions, such as importing metadata, can no longer be done in the Inventory tree. You must perform these actions from the Folders tree.

The Process Library tree is now called the Transformations tree. The Transformations tree supports one level of folders only. If transformations in your Process Library were organized in a hierarchy of folders, they now appear at the top level of the Transformations tree.

The Project tree, a special tree that was used under change management, is now called the Checkouts tree.

In previous versions of SAS Data Integration Studio, metadata repositories were the top level objects in the Inventory tree and the Custom tree. Now, metadata repositories are not visible in the Inventory tree, and they are just another folder in the Folders tree. In most cases it is no longer important which metadata repository contains a particular object. If you have the appropriate privilege, you can work with any object in the tree views, regardless of what metadata repository contains the object.

## SAS Workspace Server Requirements for New Jobs

From this release forward, new jobs with code that is generated by SAS Data Integration Studio must be executed on a SAS 9.2 Workspace Server or newer.

### **Impacts on Change Management**

Administrators who are responsible for setting up change management in SAS Data Integration Studio must do some additional work after migration. For more information, see the SAS Data Integration Studio chapter in the *SAS Intelligence Platform Desktop Application Administration Guide*.

### **Impacts on SAS Solutions**

Some SAS 9.2 solutions might not be available until after the release of SAS Data Integration Studio 4.2. Accordingly, if your site is using a SAS solution, it is recommended that you not import individual solution objects until that solution is ready for SAS 9.2 and is installed.

Alternatively, you can migrate or import jobs with missing solution transformations and simply not open them until after the SAS 9.2 solution is installed. After the SAS 9.2 solution is installed, you can select a job in a tree view and use the **Upgrade** pop-up menu option to upgrade the job.

### **Migration Web Site**

For more information about migration, see our Migration Web site: <http://support.sas.com/rnd/migration/utility/utilitynotes>.

