

SAS[®] Deployment Wizard and SAS[®] Deployment Manager 9.3: User's Guide



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Chapter 1 — Overview of the SAS Deployment Wizard, the SAS Deployment Manager, and the User's Guide

What is the SAS Deployment Wizard?

The SAS Deployment Wizard is the common interface used to install and deploy all SAS 9.3 software. Using the SAS Deployment Wizard, you can create and interact with the SAS Software Depot, the repository of files and data necessary to install your SAS 9.3 software. When the SAS Deployment Wizard is exercised to its full capability, it provides a broad range of deployment opportunities, from installing software on a single machine to installing on many machines across several tiers, either silently or interactively.

What is the SAS Deployment Manager?

The SAS Deployment Manager is a tool that looks very much like the SAS Deployment Wizard. However, the SAS Deployment Manager is used for post-installation configuration tasks such as configuring some products, applying hot fixes, updating metadata, and uninstalling SAS software.

Using this Guide

This *User's Guide* is a high-level document providing support information for the SAS Deployment Wizard and its processes. It is our expectation that this document, combined with the Help information available from each SAS Deployment Wizard dialog, should be sufficient information to assist you to install and deploy your software. However, if you need more technical information or would like to see detailed screen-by-screen instructions, SAS has created the *SAS 9.3 Intelligence Platform: Installation and Configuration Guide*, available at <http://support.sas.com/93administration>. As always, if you cannot find the answers to your questions, SAS Technical Support is available to assist you.

Definition of Terms

As the installation process for SAS software has matured, we have introduced several new ideas in order to facilitate our advances. This section defines terms key to installing and deploying your SAS software.

Software Order E-mail

The *Software Order E-mail* contains important information about your SAS Software Package and instructions for preparing to install your software. The Software Order E-mail is sent to the SAS Installation Representative at your site.

If you cannot find your Software Order E-mail, you should go to the web site <http://support.sas.com/adminservices-SID> to have it re-sent to the SAS Installation Representative at your site.

SAS Software Depot

The *SAS Software Depot* is a centralized disk copy of your installation media. The SAS Deployment Wizard can invoke a process that will automatically create a SAS Software Depot from any SAS 9.3 installation media you might have.

SAS Installation Data file (SID file)

The *SAS Installation Data file* consists of customized installation information and product authorization information. The SAS Deployment Wizard uses the installation information in the SID file to install your licensed software and apply customized product authorization information to your system. The file is named something like `sas93_XXXXXX_YYYYYYYY_zzz.txt`, where `XXXXXX` is your order number, `YYYYYYYY` is your setnumid (also sometimes referred to as "site number," a unique identifier that Tech Support uses), and `zzz` is the operating system the order is licensed for.

The SID file for your software (order) will be located in the `sid_files` directory at the root of your SAS Software Depot or, if you have received media, on the first disk of that installation media.

SAS Order Information

The *SAS Order Information* is a file that contains the list of SAS software that you have ordered. This list is the same as the one that is included with your Software Order E-mail, but is included in your software. The SAS Order Information file is located in your SAS Software Depot at `/install_doc/<order number>/soi.html`.

"Basic" and "Planning"

Your Software Order E-mail and SAS Order Information have a field described as "Order Type." The value in the field will be either "Basic" or "Planning." Basic orders are generally straightforward single-machine deployments. Planning orders are more complex, multi-machine deployments. The type of order you have helps you to identify your orders (if you have more than one order) and determines the path you use to go through the SAS Deployment Wizard.

SASHOME

SASHOME is the file location where your SAS software is installed on a machine. SASHOME is determined when you install software through the SAS Deployment Wizard the first time, and that location will become the default installation location for any other SAS software you install on the same machine. For Windows users, this means that you will only be prompted for the SASHOME location the first time you use the SAS Deployment Wizard on a machine.

For example, the default SASHOME for Windows is `c:\Program Files\SASHome`. Do not use the same location you used for installations of earlier versions of SAS.

Note: *SAS Foundation products are the only 32-bit products that SAS supports in compatibility mode on 64-bit Linux. When installing on 64-bit Linux systems, we recommend that you install 32-bit SAS Foundation under a separate SASHOME directory.*

Deployment Plan

Most installations of Basic orders will not require a deployment plan. A *deployment plan* is a pre-selection of the software that will be installed by the SAS Deployment Wizard. It contains a description of what the plan deploys, identifies the target machines, and lists the software to be installed and configured. It is an XML file and is named `plan.xml`.

The SAS Deployment Wizard contains a set of standard deployment plans that may be used with little customization. If you are working with a SAS consultant in the deployment of your software, that consultant has access to a tool to create a customized deployment plan for your installation.

If you perform a planned deployment, a copy of the deployment plan that was used is stored in the configuration directory in the `plan.<year-month-day-hour-minute>.xml` format. For example:

```
C:\SAS\Config\Lev1\Utilities\plan.2011-01-24-02.24.xml
```

Note about Large Fonts

If you are running the SAS Deployment Wizard or SAS Deployment Manager on a computer using larger fonts or a higher DPI setting, some of the pages may be truncated in the viewable area of the application. You can improve this by enlarging the size of the application when it first opens.

Note about Running Simultaneously with SAS Download Manager

The SAS Deployment Wizard writes to many of the same files as the SAS Download Manager. Therefore, instances of the SAS Deployment Wizard and the SAS Download Manager cannot be run at the same time.

Note about UNIX Installer Account

For UNIX, the installer account must be the sas account. The root account should not be used since it will cause deployment failures.

Note about Deployment Registry

In order to support updates to the SAS software, installation data is stored in a deployment registry created in your SASHOME directory and located under `<SASHOME>\deplymntreg`. This registry should not be moved, modified, or deleted in any way while you have SAS software installed in order to ensure successful application of updates. The registry should only be deleted if you are performing a complete removal of all SAS software from the machine.

Note for Windows Terminal Server Users

If you are using a Windows terminal server, you **must** use the same account for every installation on the terminal server and for any subsequent updates to the terminal server.

Note about UNIX Windowing Environments

The SAS Deployment Wizard has a graphical user interface by default. If you are installing your software on a UNIX system, make sure that a windowing environment—such as X11—is installed. If you would prefer to use a text interface on UNIX, refer to the “Using a Text-Based Interface” section in Chapter 3, “SAS Deployment Wizard: Command Line Options” or in Chapter 7, “SAS Deployment Manager: Command Line Options”.

Note about Federal Desktop Core Configuration

If you are using Federal Desktop Core Configuration (FDCC) security standards on your system, do not use the autologin functionality when the SAS Deployment Wizard is performing updates and a reboot is required.

Chapter 2 — Best Practices

This chapter contains suggestions about how best to use the SAS Deployment Wizard and SAS Software Depot.

Using Defaults

As you use the SAS Deployment Wizard, SAS recommends that you accept the defaults provided to you throughout the dialogs. As long as the SAS Deployment Wizard remains open, you can go back through the dialogs to see and change your entries. Use the **Help** button to get more information about what the defaults are for individual pages.

If you do change any initial defaults, your responses become the defaults for each subsequent pass with the SAS Deployment Wizard.

The SAS Software Depot

The SAS Software Depot is a centralized disk copy of your installation media.

Directory Structure

The SAS Software Depot has a common directory structure across all orders. The following is a description of the directories at the root of each SAS Software Depot and their contents. SAS strongly recommends not changing the directory structure in any way manually, instead using the SAS Deployment Wizard for any directory manipulation that may be required.

There are only a few subdirectories that you should ever have to interact with:

- `sid_files` – This is the subdirectory that contains the SAS Installation Data file (SID file) for your order or orders. The SAS Deployment Wizard will ask for the location of your SID file during the install process and will point to this directory by default. When you receive a new SID file upon renewing your software, usually annually, you should store it in the `sid_file` directory as well. Tech Support recommends not deleting your original SID file.
- `third_party` – This subdirectory contains any third-party software required for your order that SAS can provide, as well as the documentation for installing it. The QuickStart Guide for your order will direct you to the appropriate point in the installation process to install the third-party software.
- `standalone_installs` – This subdirectory contains SAS software that must be installed outside the SAS Deployment Wizard. Instructions for installing this software are available either in the `ReadmeFiles` subdirectory described below or in installation instructions described by the preinstallation checklist, if one is available for the products.
- `install_doc` – This subdirectory is divided into smaller subdirectories based on your orders. Each order subdirectory contains a Software Order Information file and an `ordersummary.html`, which is the full list of the products contained in your order.

If your order includes a `third_party` or `standalone_installs` subdirectory, the readme documents describing how to install software in those subdirectories will be available in the `/install_doc/<order number>/ReadmeFiles` folder.

Creating Media from SAS Software Depots

The SAS Deployment Wizard has a process by which you can create media from an existing SAS Software Depot. This process can only duplicate what was in the original order, since it is what is described in the order's data. Adding files, such as renewal SID files, to the SAS Software Depot will not result in their automatically being included in the automated duplication process since such manual movement is not recorded into the order data. Note that this process will not actually create the media, but prepare images that you should burn for yourself, using whatever media burning software you have installed. Use the following steps to copy your SAS software to media.

1. Start the SAS Deployment Wizard from the SAS Software Depot containing the desired order, and at the opening **Select Deployment Task** dialog, select **Manage this SAS Software Depot** and click **Next**.
2. The **Manage SAS Software Depot** page opens. Select the software order you want to copy and click **Create Media-Ready Image**.
3. The **Create Media** page opens. In the **Media Type** field, select the type of media you want to create. In the **Target Directory** field, enter the location where the media-ready images will be created. You can use the **Browse** button to find an appropriate directory. Click **Start** to begin creating the media-ready images.
4. When the SAS Deployment Wizard has finished creating the images, close the **Create Media** dialog and click **Finish** on the SAS Software Depot.
5. Go to the target directory you selected in step 3. The SAS Deployment Wizard has created a directory structure consisting of a `labels.txt` file and at least one subdirectory. The `labels.txt` file contains a list of the created subdirectories and names for them as well as information about those names. It will also list any additional steps that may be required based on your specific software order.

Find as many pieces of media as there are subdirectories in your target directory. Label each piece of media according to the `labels.txt` file.

6. Using your media burning software, burn the contents of each subdirectory onto the correspondingly labeled media.

***Note:** Do not burn the subdirectory itself on to the media, but open it and burn its contents onto the media. Use of the media you make relies on some of the files being at the top of the media. Burning the subdirectory inserts an extra directory level on the media that will hamper its use.*

Note on Hot Fixes and Media Creation

Any hot fixes in the order that you are burning to media will not be included in this process. To retrieve the latest hot fixes for the software in the order, create a SAS Software Depot from the media you just created and start the SAS Deployment Wizard. At the **Select Deployment Task** page, select **Manage this SAS Software Depot** and then select **Retrieve Hot Fixes** on the **Manage SAS Software Depot** page in order to find and download the latest hot fixes.

Note on Media Burning

During the development and testing of the SAS Deployment Wizard, SAS discovered inconsistencies between media-burning applications, sometimes resulting in unexpected errors. Note, however, that

the SAS software, including the SAS Deployment Wizard, was not the cause of the errors. Instead, the errors occurred as a result of failures in the burning process or as a result of different specifications between the drives burning the media and the drives reading the media.

Try to use the exact same type of drive for burning and reading the media you create. If you use a different drive to read the media, unexpected errors like installation hangs and messages about corrupted files may occur. Testing has shown that, in every case, corruptions that occur are a result of the burning process and that the hangs are a result of the reader not being able to read the burned media. Note, though, that even using the same type of drive is not a guarantee that the errors will not occur; it just makes them less likely. Also ensure the media creation software you use preserves the directory and file names used in the media target directory structure; that is, it does not truncate pathname components.

Note also that much of the burning software is operating system-specific. If you intend to use your burned media on a different operating system than the one used to create it, ensure that your burning software is capable of supporting that operating system.

Moving SAS Software Depots

If you decide to move or copy your SAS Software Depot from the location where it was originally built, the method you use depends on the network status of the original and target locations.

Moving Between Shared Networked Locations

The SAS Deployment Wizard allows you to copy a SAS Software Depot from an existing one by choosing the **Create or Add to a SAS Software Depot** at the opening **Select Deployment Task** page. If you choose to use the **Create or Add to a SAS Software Depot** option, the SAS Deployment Wizard also allows you to subset orders within the SAS Software Depot being copied so that you can create smaller depots in new locations. The Help information for the **Select Deployment Task** page and the subsequent pages describe the subsetting process.

Moving Between Non-Shared Network Locations

If you are moving a SAS Software Depot between locations that are not networked, SAS has created the SAS Software Depot Copy Utility for Windows and UNIX that uses FTP processes in order to move a depot.

Note: *The SAS Software Copy Utility for UNIX uses FTP libraries. If you only have SFTP enabled on your UNIX machine, you can use the media creation process to copy a depot, described below. Future releases of SAS 9.3 will include a SAS Software Depot Copy utility that will work with SFTP.*

SAS Software Depot Copy Utility

The SAS Software Depot Copy Utility copies an entire depot and places it in a target that you describe. You cannot subset your software depot using the Copy Utility.

The SAS Software Copy Depot Utility is located in the `\utilities\depotcopier` directory of your SAS Software Depot. Windows users should double-click `SASDepotCopierUtility.exe` while UNIX users should execute `SASDepotCopierUtility.sh`. The Command Prompt window will open for Windows users, while UNIX users will see the questions in their xterm window.

1. The Copy Utility asks you to enter the host name of the remote machine that you want to copy the software depot to. Type the location for the copy of your software depot and press ENTER.
2. The Copy Utility asks for the user ID for the machine you are copying to. Type the user ID and press ENTER.
3. The Copy Utility asks for the password for the user ID you described in the step above. Type that password and press ENTER. For security reasons, you will not see your password as you type it.
4. The Copy Utility asks for the location of the software depot on the machine you are working from. Type the location and press ENTER.
5. The Copy Utility asks for the location on the remote machine where you want to place the copied software depot. Type that location and press ENTER. When you press ENTER, the copying process begins.

Note: The location that you select must already exist. The utility cannot create a new directory.

6. When the copying process is complete, you will receive a success message. Windows users can close their Command Prompt window.

Note: If you are copying the depot from a Windows environment to a UNIX environment, the appropriate execute permissions will need to be set manually. After the copy process is complete, issue the following command:

```
chmod -R 755 <depot location>
```

Using the Media Creation Process (UNIX only)

If your UNIX system only has SFTP enabled, you should use the media creation process described above to help with that task. It is important that whatever tool you use to move/copy the depot will not affect the case of any files and that it will not truncate long filenames to 8.3 format.

1. Perform the steps described in the "Creating Media from SAS Software Depots" section above.
2. Take your media to the machine you wish to install the SAS Software Depot on. Insert the first piece of media, and select the executable that corresponds to the operating system of the machine to start the SAS Deployment Wizard (for example, Windows users should use the `setup.exe` file). If you are working from a single piece of media, at the opening **Select Deployment Task** dialog, select **Create a SAS Software Depot** and click **Next**. Follow the instructions in the SAS Deployment Wizard to move your software from the media to the new location.

If you have more than one piece of media, the SAS Deployment Wizard will automatically begin with the dialogs to create a SAS Software Depot.

Deleting SAS Software Depots

SAS strongly recommends not removing SAS Software Depots. When you keep your SAS 9.3 depot, applying maintenance and upgrades become easier because you only need to download the changed depot files instead of having to download an entire SAS order again.

For space reasons, you may want to remove a SAS Software Depot after your software has been installed. If you decide to remove a SAS Software Depot, SAS strongly recommends that you make a backup of your SAS Software Depot on media so that you will have a copy of the installation files should they be required. You can create media by using the process described the "Creating Media from SAS Software Depots" section above.

Note that if you remove the SAS Software Depot without making a copy of it, you have also removed the SAS Deployment Wizard and the files necessary to make it run.

Managing Your SID Files

As noted above, there really are only two rules of thumb for managing your SID files. First, use the default location for storing your SID files or keep an accurate record of where you store your SID files. Second, ensure that subsequent SID files that you receive are kept in the same location. Storing your SID files in the `sid_files` subdirectory described above meets both of these objectives.

Users who have an enterprise-wide deployment should also consider having their SID files in a networked location in order to ensure that all users have access to them.

Storing and Using Deployment Plan Files

By default, any deployment plan files shipped with your software will be stored in the `plan_files` directory at the root of your SAS Software Depot. If you receive or create a customized deployment plan file, you should also store it in the `plan_files` directory. In order to differentiate between deployment plan files, you can either create a new directory for each `plan.xml` file inside the `plan_files` directory or simply add a prefix (for example, `entbiserver.plan.xml`). If you do add a prefix, ensure that the end of the file name does not change from "plan.xml."

After your SAS software is installed, your deployment plan files are no longer strictly necessary, but you may want to keep them on hand for record-keeping purposes, for possible future re-installation and re-configuration tasks, or for the addition of products.

Chapter 3 — SAS Deployment Wizard: Command Line Options

Quiet Installation

A quiet installation allows you to provide all of the responses that would normally be supplied to the wizard when running interactively, but without the presence of a user. It is intended for use in any context that does not require a user to be present at the machine.

In order to perform a quiet installation, you should first create a response file according to the "Record Mode" section of "Record and Playback" below. After you have created a response file, you should use the information in the "Quiet Playback Mode" section below to perform the quiet installation on the target machine.

Windows users should also consider the "Restarting" command line options in the following section for use with any reboots that may occur.

The MIF File in Quiet Mode (Windows only)

The Management Information File (MIF file) is created during Quiet Mode to allow you to determine the success or failure of either the System Requirements Wizard or SAS Setup. This file contains information typically used by Microsoft SCCM, but usable by any process that determines the success or failure of an installation.

The MIF file is always written to the Temp directory, and is named `sas.mif` by default. The MIF file contains a series of START and END sections, which define certain attributes related to the tool's execution. Of specific interest to determine the success or failure of the tool is the section called "InstallStatus," similar to the following:

```
START GROUP
  NAME = "InstallStatus"
  ID = 2
  CLASS = "MICROSOFT|JOBSTATUS|1.0"
  START ATTRIBUTE
    NAME = "Status"
    ID = 1
    ACCESS = READ-ONLY
    STORAGE = SPECIFIC
    TYPE = STRING(32)
    VALUE = "Success"
  END ATTRIBUTE
  START ATTRIBUTE
    NAME = "Description"
    ID = 2
    ACCESS = READ-ONLY
    STORAGE = SPECIFIC
    TYPE = STRING(255)
    VALUE = "Installation Successful."
  END ATTRIBUTE
END GROUP
```

The Status and Description fields, along with their corresponding values, provide information on the results of the installation. In this example, the installation was successful, as indicated by the bold items above. For a failure, the fields above might be set as follows:


```

NAME = "Status"
VALUE = "Failed"
NAME = "Description"
VALUE = "Installation aborted by the user."

```

If the MIF file indicates success, then there is no need to be concerned with the log file. If the MIF file indicates that the installation failed, and you feel more troubleshooting is necessary, you will need to review the log file.

Record and Playback

Record and playback is a feature in the SAS Deployment Wizard that is used to save dialog responses to a file and then load those responses at a later point. The SAS Deployment Wizard provides three different modes for record and playback. Each mode is described in detail below.

Note that using any of the command line options in the "Record and Playback" section while creating/managing a SAS Software Depot is not supported.

Record Mode

Note: The response file generated with `-record` may contain passwords in plain or encrypted format. You should secure the response file as you would any other sensitive information.

Running the SAS Deployment Wizard in record mode will cause the SAS Deployment Wizard to create a response file that contains values for each of the prompts the user sees when running the SAS Deployment Wizard. The SAS Deployment Wizard must run to completion when creating the response file in this mode.

Note: If you record a deployment that includes products that require interaction from the user, your response file will not record those manual responses. Therefore a response file created in this fashion will be insufficient for use with any method of playback (quiet or interactive). If you want to use record/playback, ensure that Dataflux Integration Server and dfPower Studio do not appear in your **Products to Install** list or are not selected in that list.

Usage

`-record`

The response file will be created in the user's home directory on all platforms with a file name of `sdwresponse.properties`.

The response file location can be specified by adding an additional command line argument:

```
-responsefile "<full path to the response file>"
```

Note: If you specify a file location where a file already exists, the pre-existing file will be overwritten by the SAS Deployment Wizard.

If you use any other command line options while using record, those options are not included in the response file. To properly use the response file, you must repeat those same command line options with the playback.

Example

```
setup.exe -record -responsefile "C:\sdwresponse.properties"
```

By default, no deployment occurs when running in a record mode. In order to force a deployment while recording, use `-deploy`.

Note: *If you use both the `-record` and `-deploy` options, you will be recording an installation on a specific machine. Therefore, the response file that is created may not be appropriate for use on other machines. SAS recommends response files created using the two options simultaneously only be used on other machines with caution.*

In addition, response files should only be used for software in the same order. Using a response file from one order while deploying another order may result in unintended discrepancies that may be difficult to troubleshoot.

Quiet Playback Mode

Users can suppress the user interface for the SAS Deployment Wizard by running in this mode. The mode requires an existing response file. If the SAS Deployment Wizard encounters a dialog for which there is not a valid response in the response file, a message will be recorded in the log file and the SAS Deployment Wizard will return an error code of -1. There is no visual feedback while the SAS Deployment Wizard is running in this mode. SAS recommends that you check your log file after the installation to determine if any errors occurred.

The location of the log files is described in the "SAS Deployment Wizard Log Files" section below.

Note: *If the SAS Deployment Wizard is forced to reboot your machine in order to install required software, when the SAS Deployment Wizard restarts, it will no longer be in quiet playback mode.*

Usage

`-quiet`

The response file must already exist and will default to the user's home directory on all platforms with a file name of `sdwresponse.properties`.

The response file can be specified by adding an additional command line argument:

```
-responsefile "<full path to the response file>"
```

Example

```
setup.exe -quiet -responsefile "C:\sdwresponse.properties"
```

Note: *Configuring SAS Data Integration Studio or SAS Web Infrastructure Platform on z/OS and UNIX may require the use of an X11 display. If you are configuring SAS Data Integration Studio or SAS Web Infrastructure Platform and you intend to use quiet mode, SAS recommends that you use a virtual framebuffer such as Xvfb.*

Note on Windows Usage

Windows users also have the `-wait` option available for their use. The `-wait` option forces the `setup.exe` process to remain in the task list until the SAS Deployment Wizard completes, which is important with any provisioning software such as Microsoft's SCCM or IBM's Tivoli. The following is an example using the `-wait` option:

```
setup.exe -wait -quiet -responsefile "C:\Program Files\SASHome  
\sdwresponse.properties"
```

Partial Prompting

When running the SAS Deployment Wizard in partial prompt mode, the user only sees dialogs that do not have a valid response in the response file. This mode is used when the SAS Deployment Wizard resumes after being interrupted by a reboot and values originally supplied are no longer valid. This can occur when mapped drives are lost after rebooting on Windows. This mode may also be used by administrators to supply some of the deployment information for their users.

Usage

```
-partialprompt
```

The response file must already exist and will default to the user's home directory on all platforms with a file name of `sdwresponse.properties`.

The response file can be specified by adding an additional command line argument:

```
-responsefile <full path to the response file>
```

Example

```
setup.exe -partialprompt -responsefile "C:\Program Files\SASHome
\sdwresponse.properties"
```

Monitoring the SAS Deployment Wizard during Quiet Playback

Running the SAS Deployment Wizard in quiet mode makes it more difficult to monitor the installation and to notice if errors occur. To address this concern, you can use `-quietstatus` option on Windows and periodically issue the `ps` command on UNIX and z/OS to track whether the SAS Deployment Wizard is running.

Windows

On Windows, specify the `-quietstatus` option when invoking the SAS Deployment Wizard in quiet mode to display a small status dialog to help identify when the deployment is complete. In addition, you can add `-minimize` in order to force the status dialog to open in a minimized state.

Usage

```
-quietstatus -minimize
```

Example

```
setup.exe -wait -quiet -responsefile "C:\Program
Files\SAS\sdwresponse.properties" -quietstatus -minimize
```

UNIX and z/OS

As with most processes on UNIX and z/OS, issue the `ps` command to monitor the SAS Deployment Wizard running in quiet mode. Remember that output from a `ps` command can be misleading because the process name returned is not always named `setup.sh`, since the actual script that the SAS Deployment Wizard is running at any given time varies. However, the process ID remains the same.

For example, if you were to run the SAS Deployment Wizard and immediately issue a `ps` command (before the language dialog box would be displayed), you would see output similar to

```
31762 pts/2 S 0:00 /bin/sh /depot/setup.sh
```

Note that the shell, `/bin/sh`, runs the initial script, `/depot/setup.sh`. The shell is the parent process, and in this example has a process ID of 31762. When `setup.sh` is finished executing, it passes control to the script, `deploywiz.sh`. If you were to look at the process list while the SAS Deployment Wizard is running, you would see something similar to the following in a process list:

```
31762 pts/2 S 0:00 /bin/sh
/tmp/_setup31762/products/deploywiz__9220__prt__xx__sp0__1/deploywiz.sh
-startuplocation /depot
-templocation /tmp/_setup31762
```

The shell `/bin/sh` is still running and retains the same process ID. However, this shell is running a different script now, `deploywiz.sh`.

Interactive Playback Mode

The response file can also be used to default all the prompts in the SAS Deployment Wizard. In this mode, all the dialogs in the SAS Deployment Wizard are displayed and the default values are loaded from the response file.

Note: *Even if you are using `-responsefile` to install your software on a UNIX system, you must still install a windowing environment, such as X11. Using `-responsefile` still invokes a graphical user interface.*

Usage

```
-responsefile "<full path to the response file>"
```

Example

```
setup.exe -responsefile "C:\Program Files\SASHome\
sdwresponse.properties"
```

Restarting (Windows only)

If you are performing a quiet install, you should use the following command line options to ensure that the SAS Deployment Wizard can restart your machine silently after it has been rebooted.

Note: *The values entered by using the command line options below are temporarily stored in your Windows registry using the Windows auto logon functionality. In rare circumstances, it is possible those values will remain in your Windows registry after their use, thus posing a potential security risk. For more information about this functionality, including any risks, refer to Microsoft's documentation about security and automatic logons. You should weigh the risks of convenience of automatic logon after restart against the security policies in place at your site.*

Providing a Domain

This command line option allows you to specify the domain to which the machine should be logged on after a reboot.

Usage

```
-restartdomain <domain name>
```

Example

```
setup.exe -restartdomain localnt
```

Providing a User ID

This command line option allows you to specify the user ID to be used when logging on after a reboot.

Usage

```
-restartuserid <user ID>
```

Example

```
setup.exe -restartuserid myname
```

Providing a Password

This command line option allows you to specify the password to be used when logging on after a reboot.

Usage

```
-restartpassword <password>
```

Example

```
setup.exe -restartpassword code1234
```

Logging

You can use the command line to specify the level of detail you would like to use in the log files for your deployment. There are three levels of logging:

- log level 0 – This level sets the SAS Deployment Wizard logging to its lowest detail, providing only cursory information about the deployment.
- log level 1 – This level sets the SAS Deployment Wizard logging to its default detail, verbose mode.
- log level 2 – This level sets the SAS Deployment Wizard logging to its highest level, debug mode.

Usage

```
-loglevel <value between 0 and 2>
```

Example

```
setup.exe -loglevel 2
```

Hot Fixes

For more information about the hot fix process, see Chapter 4 — Finding and Applying Hot Fixes on page 22.

Excluding Hot Fixes

If you would prefer not to install the hot fixes in your order, you should use the `-nohotfix` command line when you start the SAS Deployment Wizard.

Usage

```
-nohotfix
```

Example

```
setup.exe -nohotfix
```

Including Hot Fixes (z/OS only)

If you want to allow hot fixes in your order to be installed during later installations of software in addition to your original order, you should use the `-hotfixupdate` command line option. This command line creates an exception to the rule that hot fixes included with an order can only be installed in a clean SASHOME.

Usage

```
-hotfixupdate
```

Example

```
sasdm.rexx -hotfixupdate
```

Miscellaneous

Specifying a Different SASHOME (Windows only)

When you first use the SAS Deployment Wizard on Windows, you are asked to specify the location where you would like to have your SAS software installed, referred to as SASHOME. The location you enter that first time is then used as the default for all subsequent usage. If you would like to use a different location for SASHOME than the default, use the `-changesashome` command to force the SASHOME dialog in the SAS Deployment Wizard. The SAS Deployment Wizard will then use this new SASHOME as the default.

Note: *Windows only allows one active SASHOME. If an already defined SASHOME contains active SAS software and you want that SAS software to remain active, then -changesashome should not be used. More than one SASHOME for the same SAS release is not supported on Windows.*

Usage

```
-changesashome
```

Example

```
setup.exe -changesashome
```

Using a Text-Based Interface (UNIX and z/OS only)

If you do not wish to rely on an X11 server for UNIX or z/OS, you can use the SAS Deployment Wizard in console mode, allowing for the use of a headless system.

Note: *Console mode cannot be used with physical media; that is, you cannot use console mode to create a software depot from DVDs. However, you can use console mode to install your software from any depot, including one that is created from physical media.*

If you use console mode, each dialog used in the installation of your SAS software is represented in text, as in the following example:

```
Select a language in which to view the SAS Deployment Wizard.
```

```
( ) 1 - German
(*) 2 - English
( ) 3 - Spanish (Castillian)
( ) 4 - French
( ) 5 - Italian
( ) 6 - Japanese
( ) 7 - Korean
( ) 8 - Chinese Traditional
( ) 9 - Chinese Simplified
```

The * character indicates the current selection.

You can change the selection by specifying a number below.

Enter <q> to quit.

Press Enter to accept the current selection and continue.

Selection:

Note: *If you are instructed to enter a sequence that includes angle brackets, such as "Enter <q> to quit" above, you must include those symbols.*

The `-console` command line option can be used with other options at the same time, such as recording or playing back a response file.

Note: *If you intend to run the SAS Deployment Wizard in console mode to perform a deployment without a graphical display, ensure that the `DISPLAY` environment variable is unset, as opposed to it being set to a blank value (that is, `DISPLAY=`).*

The `-console` command line option also supports two options to specify the size of the output of the SAS Deployment Wizard. Use `-pagesize #` to specify the number of lines to display before pausing the output and `-pagewidth #` to specify the number of characters to display on a line before wrapping to another line. Note that `-pagesize` and `-pagewidth` will not work with any other command line option.

Note: *Configuring SAS Data Integration Studio or SAS Web Infrastructure Platform on z/OS and UNIX may require the use of an X11 display. If you are configuring SAS Data Integration Studio or SAS Web Infrastructure Platform and you intend to use console mode, SAS recommends that you use a virtual framebuffer such as Xvfb.*

Usage

```
-console [-pagesize #] [-pagewidth #]
```

Examples

UNIX

```
setup.sh -console -pagesize 20 -pagewidth 50
```

z/OS

```
setup.rexx -console -pagesize 20 -pagewidth 50
```

Changing the Java Runtime Environment

After your initial selection of a Java Runtime Environment (JRE) during a SAS installation, you can change to a different JRE in any subsequent deployments via the pages within the SAS Deployment Wizard. However, if you are installing updates and you would like to specify a new JRE, you should use the `-forcejreprompt` command line option. The `-forcejreprompt` causes the SAS Deployment Wizard to ask for the location of the JRE you want to use with your SAS software. This prompt will only be useful when you are applying updates.

Usage

```
-forcejreprompt
```

Example

```
setup.exe -forcejreprompt
```

Re-configuring after Changing the JRE

If you do change the JRE using the `-forcejreprompt`, you should also revise the `sassw.config` file in order that Java-based products will use the JRE that you designate. Locate the `sassw.config` in your SASHOME directory. Then, using a text editor, open the `sassw.config` file and modify the JRE value to include the full path to the JRE you've specified with the `-forcejreprompt` command line. For example, the following would be an appropriate entry in the `sassw.config` file:

```
JREHOME=C:\Program Files\Java\jre6\bin\java.exe
```

There are additional steps that should be performed when changing the JRE to ensure that all affected areas are updated appropriately. See the "Configuring SAS 9.3 to Use an Alternative Java Runtime Environment or Java Development Kit" web page at <http://support.sas.com/resources/thirdpartysupport/v93/AlternateJRE.html> for a description of those steps.

Subsetting an Order without SAS Foundation

If you choose to move or copy a depot, additional dialogs allow you to subset the orders in the depot being considered, so that only a part is moved or copied (see “Moving Between Shared Networked Locations” section above). One of the ways you can subset the order being moved is “by Foundation product”; that is, by SAS products usually installed on a server, such as SAS/GRAPH and SAS/STAT. The `-subsetclients` command line changes that dialog so that you can subset by client products that are not configurable, such as SAS Enterprise Guide and SAS Add-in for Microsoft Office. If you use the `-subsetclients` command line, the “by Foundation product” choice becomes “by product.” Also, note that if you use this command line, **only** non-configurable client software will be listed in this dialog.

Usage

```
-subsetclients
```

Example

```
setup.exe -subsetclients
```

Subsetting an Order with SAS Foundation

You can also subset an order to include both SAS Foundation products and the non-configurable clients described above by using the `-subsetnonconfig` command line. If you use the `-subsetnonconfig` command line, the “by Foundation product” choice becomes “by product.”

Usage

```
-subsetnonconfig
```

Example

```
setup.exe -subsetnonconfig
```

Creating a Report of Subsetted Products

If you intend to subset an order using either command line options or the dialogs in the SAS Deployment Wizard, you may also want to create a report of what products were included and excluded from the resulting subsetted order. To create this report, use the command line `-listdepot` when you start the SAS Deployment Wizard. The following is an example of what that report might look like:

```
Date: 2011 Sep 25 10:02:56
Depot: /SASHOME
```

```
Order: 099SPS
+ Base SAS [base__93ts1m0__mvs__ne__sp0__1]
+ Base SAS [base__93ts1m0__mvs__w0__sp0__1]
+ Base SAS Help and Documentation [basedoc__93110__prt__xx__sp0__1]
+ Base SAS JAR Files [basejars__93110__prt__xx__sp0__1]
<....>
```

```
Order: 099SQ2_2011-07-19-12.27.01
+ Advanced Analytics Common Components [aacomp__93110__wx6__en__sp0__1]
+ DATA Step to DS2 Translator [accelmva__93160__wx6__en__sp0__1]
+ Microsoft Office Access Database Engine 2010
[ace__93112__prt__xx__sp0__1]
- SAS/GRAPH ActiveX Control [activexgraph__93230__win__de__sp0__1]
+ SAS/GRAPH ActiveX Control [activexgraph__93230__win__en__sp0__1]
- SAS/GRAPH ActiveX Control [activexgraph__93230__win__es__sp0__1]
```

The `Date` field describes when the report was created. The `Depot` field describes the location where the subsetted order has been placed by the SAS Deployment Wizard. The `Order` field gives the order number for the original order being subsetted.

In the list of products, a + symbol indicates that the product was in the original order and is included in the subsetted order in the location named in the `Depot` field. A – symbol indicates the product was included in the original order and has not been included in the subsetted order.

Usage

```
-listdepot <location to create report>\<output file name>
```

Example

```
setup.exe -listdepot "C:\temp\SASDepotList.txt"
```

Creating an Alternate Temporary Directory

The SAS Deployment Wizard runs from a temporary directory that it creates and then removes upon completing its run. If you are concerned that the temp space might be too small for the SAS Deployment Wizard to run, you can use the `-templocation` command line option to specify a temporary directory of your choosing.

Usage

```
-templocation <directory location>
```

Example

```
setup.exe -templocation "C:\temp\SDW"
```

Note: When the SAS Deployment Wizard closes, it will delete the temporary directory and all its contents. When you select a temporary directory, ensure there is nothing already in that location that you cannot afford to have deleted.

Installing Standalone Products

Some SAS products, such as SAS Integration Technologies Client and SAS Providers for OLE DB, have a slightly different deployment path, described as "standalone." If a standalone product is installed at the same time as SAS Foundation on Windows, the standalone product will not appear in the list of products being installed in the **Deployment Summary** dialog because it is being installed as part of SAS Foundation. If a standalone product is selected without SAS Foundation, then it will appear in the list of products being installed in the **Deployment Summary** dialog.

Help with Command Lines

To see a useful list of command line options that can be used with the SAS Deployment Wizard, use `-help`. This command line option will open a message window describing other command line options without actually starting the SAS Deployment Wizard.

Usage

`-help`

Example

`setup.exe -help`

Chapter 4 — Finding and Applying Hot Fixes

With the second maintenance release of SAS 9.3, the SAS Deployment Wizard and the hot fix processes have been changed as described in this chapter. However, if you are using a SAS Deployment Wizard from prior to the second maintenance release, the hot fix process remains the same. For information about applying hot fixes with software prior to the second maintenance release (described as revision 12w35 on your Software Order E-mail), refer to Appendix C.

There are two methods for determining what hot fixes are available for your software and applying them, based on whether or not you have performed an initial installation of the software. This chapter is divided into sections that describe both processes.

Applying Hot Fixes with the Initial Installation

Starting with the second maintenance release of SAS 9.3, when you first install your software into a clean SASHOME, the SAS Deployment Wizard will also install any hot fixes included in the order. Orders that are downloaded include hot fixes selected by SAS as being appropriate for the SAS Deployment Wizard to install during a deployment.

Note: Orders received on media do not initially include hot fixes.

For both kinds of order delivery, download or media, when you are ready to install your software, you can refresh the hot fixes you already have and retrieve new hot fixes that are appropriate to install with a dialog in the SAS Deployment Wizard (select the **Manage this SAS Software Depot** task at the **Select Deployment Task** page, then **Retrieve Hot Fixes**). In situations where time has passed between the download and the initial installation, SAS recommends that you refresh the hot fixes using the process described above before that initial installation. In order to get the latest hot fixes, the SAS Deployment Wizard must have Internet access.

Note: To get the latest hot fixes for an order that arrives on media, you must first create a SAS Software Depot, then retrieve the hot fixes as described above.

Hot fixes can only be installed using this method when software is first installed into a clean SASHOME. After software has been installed in a SASHOME, you will have to use the method described below. Additional software added to a SASHOME after the initial installation will not have downloaded hot fixes installed either.

Note: If you use a version of the SAS Download Manager from the second maintenance release of 9.3 to work with an order that was created prior to that maintenance release, you will download hot fixes. However, since the order does not include the data to appropriately apply those hot fixes, they will not be installed with your initial installation. If you find yourself in this scenario, use the process described below to apply the hot fixes with the SAS Deployment Manager.

The SAS Deployment Wizard has command line options that are specific to hot fixes, described in the “Hot Fixes” section (page 16) of Chapter 3 — SAS Deployment Wizard: Command Line Options on page 10.

Applying Hot Fixes after the Initial Installation

Finding Applicable Hot Fixes

The hot fixes that are included in your initial order are those that SAS feels can be safely applied with your installation. There may be more hot fixes that should only be applied after installation is complete, or after using the software for a while, you may want to determine what new hot fixes are available for your software.

SAS Technical Support has created an application, the SAS Hot Fix Analysis, Download and Deployment Tool to evaluate your software deployment and generate a report that includes information and links to hot fixes that are available for your software. The SAS Hot Fix Analysis, Download and Deployment Tool is available at <http://ftp.sas.com/techsup/download/hotfix/HF2/SASHFADD.html>. Be sure to read the usage guide, available at the same location, before downloading and using the tool.

Applying Hot Fixes

When you have downloaded the hot fixes you need, you should apply them to your SAS software with the SAS Deployment Manager. If you are interested in quiet installation of hot fixes, you must use the command line options described below.

The SAS Deployment Manager is located in your SASHOME, in the \SASDeploymentManager\9.3 folder.

Before you begin, ensure that you are logged on with the same user ID that was used to install the software. Ensure that SAS services and processes have been halted. In addition, since you are about to make changes to a working deployment, you may want to back up your installation before applying the hot fixes.

1. Based on your operating system, perform the following step to start the SAS Deployment Manager:
 - Windows users should double-click `sasdm.exe` (if your Windows operating system is Windows Vista, Windows 7, or Windows Server 2008, you may have to right-click `sasdm.exe` and select **Run as administrator**).
 - UNIX users should execute `sasdm.sh`.
 - z/OS users should execute `sasdm.rexx`. If you are using 64-bit z/OS, you should add a command line option, `-z64`.
2. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
3. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, select **Apply Hot Fixes**. Click **Next** to continue.
4. The **Apply Hot Fixes** page opens. Select whether you want to **Apply SAS hot fix**, **Configure SAS hot fix**, or both. In order to configure SAS hot fixes, you must either have already applied configurable hot fixes or have selected **Apply SAS hot fix**. If you select **Apply SAS hot fix**, type the location of the hot fix package that you have downloaded into the text box or use **Browse** to search for the hot fix package. When you have made your selection (and entered the location in the text box if needed), click **Start** to continue.

5. The **Checking System** page opens while the SAS Deployment Manager checks for enough disk space and for locked files. If any files are listed in this window, follow the instructions on the page. If there are no files listed, or after any that were listed have been addressed, click **Next** to continue.
6. The **Review Hot Fix Updates** page opens, describing the hot fixes that are about to be applied. Click **Next** to continue.
7. If you chose to **Configure SAS hot fix** in step 4, the **Select Configuration Directory/Level** page opens. On this page, you can choose to **Select Configuration Directory** from a list that the SAS Deployment Manager builds. This pane is populated with configuration directories and levels that have been previously configured. Note that if a configuration directory has more than one level, it will be listed multiple times, once for each level the directory has. Select the configuration directory and level by highlighting it.

You can also choose to **Enter Configuration Directory and Level** in order to specify the configuration directory manually. You may either enter the location of the directory by hand into the **Configuration Directory** text box or click **Browse** to search for a directory. When you have entered the directory location, use the **Configuration Level** select list to specify the configuration level you wish to work with.

Note: You should perform this full set of procedures once for every configuration directory in order to configure the hot fix before using the updated services. For each configuration directory after the initial one, you should select only **Configure SAS hot fix** in step 4.

When you have specified the location of the configuration directory and its level, click **Next** to continue.

8. If you chose to **Configure SAS hot fix** in step 4, the **Specify Connection Information** page opens. Enter a user ID and password for the metadata server that is being used for this configuration directory and level. The SAS Deployment Manager will try to fill in the **Host** and **Port** text boxes based on your configuration properties file. Enter the appropriate information in the **User ID** and **Password** fields (and the **Host** and **Port** fields if necessary).
When the information is correct, click **Next** to continue.
9. If you chose to **Configure SAS hot fix** in step 4, the **Select Product Configurations on Which to Apply Hot Fixes** page opens. The table lists the configurations in the configuration directory and level that you specified in step 7. Both the name you have given the configuration and the SAS product it is intended for are included for ease in identification. The **Configured Hot Fix** column shows the latest hot fix that has been configured for the product on that row. If the column reads "Not applicable" or "None configured", then no hot fix has been applied to the configuration. The **Available Hot Fix** column lists the latest hot fix in the package directory (that is, available on your system) that can be applied to the configuration. If this column lists "Not applicable", then there is no new hot fix available on your system for the configuration in that row.

Note: If the **Available Hot Fix** column has a status of "Not applicable", this does not mean that there are no hot fixes for this product available at all. Instead, it means that there are no hot fixes available for this product in the hot fix directory you designated in step 4. If you think you should have a hot fix for a product and cannot find it, you should either go back to step 4 and enter a different directory location or return to the hot fix download page and download

the correct hot fixes. Be aware that hot fixes requiring configuration are not common, so do not be alarmed if your hot fixes do not need to be configured.

If the **Available Hot Fix** column has a hot fix listed in it, then the **Status** column describes the condition of that hot fix. "Up to date" indicates that the latest hot fix has been configured. You should not configure hot fixes that are up to date again unless specifically directed to by SAS Technical Support. "Ready to configure" means that there is a newer hot fix than the one listed in the **Configured Hot Fix** column and it can be configured by this task.

Indicate the product configurations you wish to work with by selecting the check box beside them. Clicking **Select All** forces check marks beside all the configurations in the list. Clicking **Clear All** deselects all the configurations in the list.

When you have selected the configurations you want to work with, click **Next** to continue.

10. The **Deployment Summary** page opens, listing the steps that the SAS Deployment Manager is about to take. Click **Start** to begin performing the listed tasks.
11. A window opens showing that the SAS Deployment Manager is applying your hot fixes. When the tasks are complete, click **Next**.
12. The **Hot Fix Updates Complete** page opens, describing what has been applied and providing logs for any hot fixes that were configured. Click **Next** to continue.
13. The **Additional Resources** page opens, listing links to important documentation about deploying SAS software. Click **Finish** to close the SAS Deployment Manager.
14. If you configured any hot fixes, an HTML page opens that describes the location of the logs and any additional manual configuration steps that are required. You should perform any manual steps that are listed before attempting to run the software that has just been updated.

Command Line Options for Hot Fixes

There are a number of command line options that may be used with the SAS Deployment Manager.

-reinstallhotfix

By default, after the SAS Deployment Manager installs a hot fix on a machine, the deployment registry is updated to indicate the inclusion of that hot fix. On subsequent uses of the SAS Deployment Manager, hot fixes are checked against the deployment registry so that previously installed hot fixes are not reinstalled. If you want the SAS Deployment Manager to ignore that hot fixes have already been installed on a machine and include them in another installation pass, use the `-reinstallhotfix` command line option.

Example

```
sasdm.exe -reinstallhotfix
```

-skipusercheck

The hot fix installer performs a check to ensure that the user ID that performed the initial deployment is also the user ID applying the hot fixes. The `-skipusercheck` command line forces the hot fix installer to skip that check so that another user ID maybe used. Note that the logged in user should have the same permissions as the user that performed the deployment, otherwise permission conflicts may arise. However, if permissions are set appropriately, a different user can update files installed under a different user ID.

On UNIX, note that the ownership of the entire SAS tree must be changed to the new installer ID by issuing a command such as

```
chown -Rh <new_userid>:<group> <SASHOME>
```

Example

```
sasdm.exe -skipusercheck
```

On z/OS, when using UNIX System Services, the ownership of the entire SAS tree also must be changed to the new installer ID by issuing a command such as

```
chown -Rh <new_userid>:<group> <SASHOME>
```

The user ID installing the hot fix must have the authority to create new data sets with the same high-level qualifier as the existing installation and modify the existing data sets. Also, if the `-nojubsubmit` command line option (described below) is not used, the hot fix installer automatically runs the install jobs under the original installer ID, based on data (such as jobcards and user ID) stored in the `install.properties` file.

Example

```
sasdm.rexx -skipusercheck
```

-hotfixdir

By default, the launcher script will look for the hot fixes in `<SASHOME>/InstallMisc/HotFixes/New`. `-hotfixdir` allows you to specify a different directory as the default location for the hot fixes. `-hotfixdir` must be followed by a directory path to the hot fixes that you wish to apply.

Example

```
sasdm.exe -silenthotfix -hotfixdir "C:\Downloads\HotFix"
```

Note: *If you install multiple hot fixes on a z/OS machine, all hot fixes will be installed to a set of staging hot fix libraries incorporating the name of the first alphanumeric value of the hot fixes. For example, if there are two hot fixes named A01 and B06, the staging name will be A01 with the contents of both A01 and B06 included in that image.*

-console (UNIX and z/OS only)

If you do not wish to rely on an X11 server for UNIX or z/OS, you can use the SAS Deployment Manager in console mode, allowing you to use a headless system to install hot fixes. **Console mode cannot be used on your middle tier.** If you use console mode, each dialog used in the deployment of your SAS software is represented in text.

Note: *If you are instructed to enter a sequence that includes angle brackets, such as "Enter <q> to quit", you must include those symbols.*

The `-console` command line option also supports two options to specify the size of the output of the SAS Deployment Manager. Use `-pagesize #` to specify the number of lines to display before pausing the output and `-pagewidth #` to specify the number of characters to display on a line before wrapping to another line. Note that `-pagesize` and `-pagewidth` will not work with any other command line option.

Note that hot fix installation on a z/OS machine requires an X11 server by default. If an X11 server is not available, you *must* use the `-console` command line option.

Usage

```
-console [-pagesize #] [-pagewidth #]
```

UNIX Example

```
sasdm.sh -console -pagesize 20 -pagewidth 50
```

z/OS Example

```
sasdm.rexx -console -pagesize 20 -pagewidth 50
```

-silenthotfix (Windows and UNIX only)

You can suppress the user interface for installing hot fixes (steps 3 and following above) by running in this mode. This is especially useful for enterprise-wide deployments. Note that if you have stored your hot fixes in some location other than the default (`<SASHOME>/InstallMisc/HotFixes/New`), you should also use the `-hotfixdir` option described below to identify the location of the hot fixes.

Example

```
sasdm.exe -silenthotfix
```

Note: The `-silenthotfix` command line option will only *install* hot fixes. The SAS Deployment Manager log will indicate if a hot fix that has been installed also requires configuration. In order to configure hot fixes silently, you must create a response file and use it with the `-quiet` option. For more information about response files and the `-quiet` command line option, see Chapter 7 — SAS Deployment Manager: Command Line Options on page 41.

The hot fix download site described in the report created by the SAS Hot Fix Analysis, Download and Deployment Tool will indicate whether a hot fix requires configuration.

-z64 (z/OS only)

If you are installing hot fixes for your 64-bit SAS software, `sasdm.rexx` must be followed with a command line option, `-z64`.

Example

```
sasdm.rexx -z64
```

Note: If your hot fixes are not in the default location, then you must indicate where the hot fix(es) you wish to install are located by using the `-hotfixdir` command line option described above.

-nojobsubmit (z/OS only)

If you use the `-nojobsubmit` command line option, the hot fix installer will not submit batch jobs to complete the application of your hot fixes. Instead, `-nojobsubmit` allows you to edit and submit the batch jobs yourself. There are several reasons for using `-nojobsubmit`, including the following:

- Your site uses JES3 (not JES2)
- Your FTP server is configured for `JESINTERFACELEVEL=2`
- The SAS installer ID is not authorized to use FTP

- You need to make site-specific changes to the JCL or wish to review the JCL before submission
- The FTP JES interface's requirement that the jobname be the user ID performing the install suffixed with a single letter or digit is incompatible with your site's jobname requirements

If any of these conditions apply at your site, you must use the `-nojobsubmit` command line option.

If you use the `-nojobsubmit` option, the list of hot fix jobs to execute will be written to member `JOBINDEX` in `<high-level-qualifier>.< hotfix id>.INSTALL.CNTL`. Submit the first job in the list and the entire set of `HOTFIXn` jobs will run automatically (each job submits the next job in the chain).

Note: *The hot fix CNTL library cannot be opened in Edit mode after submitting the jobs. Some hot fix jobs will need exclusive access to the CNTL library for updates.*

The `PROMOTE` job is not run as part of this sequence. It should not be submitted until you are ready to move the staged data sets into production. If you want to test the hot fixes before promoting them to production, you can use the JCL, CLISTs, or REXX execs created in `<high-level-qualifier>.<E80002>.PROCLIB`, CLIST, or SASRX, respectively. These concatenate the staged data sets before the production data sets.

Example

```
sasdm.rexx -nojobsubmit
```

-hotfixupdate (z/OS only)

By default, hot fixes included with an order can only be installed in a clean `SASHOME`. If you want to install hot fixes in orders after your original order, you should use the `-hotfixupdate` command line option with those subsequent orders.

Because an installation that includes a metadata server on z/OS requires two passes of the SAS Deployment Wizard (one for 64-bit SAS software and then a second for 31-bit SAS software), if you installed hot fixes during the 64-bit installation you should force the SAS Deployment Wizard to install hot fixes during the 31-bit installation into your existing `SASHOME` directory. Using the `-hotfixupdate` command line option for the 31-bit install permits the 31-bit installation into your existing `SASHOME` to include the 31-bit hot fixes, thereby allowing you to avoid having to use the SAS Deployment Manager process for hot fixes in your order.

Example

```
sasdm.rexx -hotfixupdate
```

Additional Notes for z/OS

If the hot fix installation created `'&prefix.<hot fix number>.LIBRARY'` and it contains a `SASHOST`, `SASXAL`, or `SASXA1` module, and if you set SAS System options by assembling the `DEFAULT OPTIONS TABLE` using the `BAOPTS1` member of the original CNTL data set, then you must re-assemble this table after applying your hot fixes. To re-assemble this table, perform the following steps:

1. Edit the `BAOPTS1` member in the original CNTL data set.

2. Change the SYSLMOD DD in all three LINK EDIT steps to point to the new <high-level-qualifier>.LIBRARY.
3. Rerun BAOPTS1.

If the hot fix installation created a &prefix.<hot fix number>.LIBRARY and you run with an entry point of SASLPA, then you will need to look in the unloaded library to see if any of the new modules are installed in your LPA. If so, then you will need to replace them with the new modules and refresh LPA.

In the configuration guide, the modules recommended for installation in the LPA are

SASXAL
 SABXSPL
 SABXDML
 SABDS
 SABSCLL
 SABDBGM
 SABZPLH
 SABXGPH

Note that if you use the BNDLSUFEX option, you will have to rename the modules appropriately in your LPA. For more information about the LPA bundled configuration and information about using the BNDLSUFEX option, refer to the "Installing SAS 9.3 Foundation into the LPA/ELPA" section in the *Configuration Guide for SAS 9.3 Foundation for z/OS*.

Hot Fix Logs

A hot fix installation log is created in <SASHOME>/InstallMisc/InstallLogs/<IT_date-and-time-stamp>.log (for example, /sas93/InstallMisc/InstallLogs/IT_2011-07-19-13.54.19.log). Each attempt to install a hot fix results in the creation of a new log file with detailed information regarding the installation process.

In addition, hot fix installation is recorded in the SAS Deployment Registry. The deployment registry report is described in detail in Chapter 8 — Additional Tools on page 47.

Chapter 5 — SAS Deployment Wizard: Basic Troubleshooting

SAS Deployment Wizard Stopping without Error Message

When you are installing your software, the SAS Deployment Wizard may stop without generating an error message. Use the following list to troubleshoot this issue:

- If you are installing from media, are the DVDs damaged?
Check the DVDs for scratches or smudges. Clean them with a soft cloth and try again. If the problem continues, copy the entire contents of the first DVD to a new empty folder on the local drive. If you receive errors while copying the contents of the DVD to a local folder, then obtain new DVDs. If the copy works, then start the setup.exe file in the new folder or try the installation on another machine. If the installation does not start on another machine, then obtain new DVDs.
- Was SAS software previously installed on this system?
If SAS software was previously installed, when you reinstall the software, be sure to close all SAS programs.
- Is antivirus software running?
Close and deactivate all antivirus software before starting your installation.
- Does your account have the appropriate permissions?
For Windows, the installer account must have Administrator rights (user must be a local administrator on the machine and/or a member of the administrators group). For more details, see <http://support.sas.com/kb/5/055.html>.
For UNIX, the installer account should be the sas account. The root account should not be used.
- Are you installing from a SAS Software Depot or from the original CDs? Retry the installation from a different media than the one from which you first attempted the installation.
Problems have been reported when users try to copy a SAS Software Depot from one machine to another. Instead of copying the depot, use the SAS Deployment Wizard to create a SAS Software Depot on your machine. If you have just copied the depot from one location to another instead of using the SAS Deployment Wizard to install SAS, try installing from the original SAS Software Depot.

SAS Deployment Wizard Log Files

The SAS Deployment Wizard keeps a log of its activities, including both successful operations and notes about any failures that may occur. While the information contained in those logs is probably too complex for a user to interpret, they are invaluable tools should you need to contact SAS Technical Support.

The log files can be found, by default, in the following locations, by operating system.

Windows

For Windows Vista, Windows 7 and Windows Server 2008 operating systems:

%userprofile%\appdata\local\sas\sasdeploymentwizard\

For Windows XP and Server 2003 operating systems:

`%userprofile%\Local Settings\Application Data\SAS\SASDeploymentWizard\`

Some files and folders are hidden by default and you may need to change your settings to view them.

On Windows Vista, Windows 7, and Windows Server 2008 operating systems:

1. Select **Organize**→**Folder and Search Options**→**View**.
2. Select **Show hidden files and folders**.
3. Unselect **Hide extensions** and **Hide protected**.

On Windows XP and Server 2003 operating systems:

1. Select **Tools**→**Folder Options**→**Advanced Settings**.
2. Select **Show hidden files and folders**.
3. Unselect **Hide extensions** and **Hide protected**.

UNIX

`$HOME/.SASAppData/SASDeploymentWizard/SDW_<year-month-day-hour-minutes-seconds>.log`

Installation Log Files

As each component of your SAS Software installs, a separate log file is created with information about the installation of that component. These logs are different from the SAS Deployment Wizard log files, because they have more detail about each component, while the SAS Deployment Wizard log file only notes the success or failure of each component installation. If you have an installation problem and contact SAS Technical Support, they may ask you to check the installation logs for more information.

The installation logs are located at `<SASHOME>\InstallMisc\InstallLogs`.

Chapter 6 — SAS Deployment Manager Tasks

The SAS Deployment Manager is a tool that is included with each SAS software order. It allows you to perform some administrative and configuration tasks. The SAS Deployment Manager is located in your SASHOME, in the \SASDeploymentManager\9.3 folder.

Before you begin, ensure that you are logged on with the same user ID that was used to install the software. Based on your operating system, perform the following step to start the SAS Deployment Manager:

- Windows users should double-click `sasdm.exe` (if your Windows operating system is Windows Vista, Windows 7, or Windows Server 2008, you may have to right-click the `sasadm.exe` and select **Run as administrator**).
- UNIX users should execute `sasdm.sh`.
- z/OS users should execute `sasdm.rexx`. If you are using 64-bit z/OS, you should add a command line option, `-z64`.

The following sections describe the SAS Deployment Manager tasks and how to perform them. In some cases, the tasks may be associated with planned deployments, so references to the appropriate documentation for those tasks are also listed below.

Administration Tasks

Update Passwords

Choose this option to update passwords for selected users in an existing configuration. For more information, refer to the “Update a Managed Password” topic in the *SAS 9.3 Intelligence Platform Security Administration Guide* located at <http://support.sas.com/93administration>

Rebuild Web Applications

Choose this option to rebuild web applications previously configured in an existing configuration. For more information, refer to the “Rebuilding the SAS Web Applications” topic in the *SAS 9.3 Intelligence Platform: Middle-Tier Administration Guide* located at <http://support.sas.com/93administration>

Uninstall SAS Software (Graphical User Interface Uninstall Tool)

The Graphical User Interface Uninstall Tool provides a wizard interface to the uninstall process as well as selectable uninstalls for products installed within a SASHOME. The following is a list of products which are not available for uninstall via the Graphical User Interface Uninstall Tool.

- Individual SAS Foundation products are not available for selectable uninstalls. SAS Foundation can only be uninstalled as a set of MVA products.
- SAS Foundation on z/OS is not available for uninstall.
- Third-party software will not be available for uninstall. This includes system requirement packages such as Microsoft Runtime Components as well as Java.

The Graphical User Interface Uninstall Tool also supports quiet uninstalls utilizing command-line options.

The Graphical User Interface Uninstall Tool currently supports the following platforms.

- All Windows platforms
- All UNIX platforms
- UNIX System Services for z/OS to uninstall vertical multi-platform products

In addition to starting the Graphical User Interface Uninstall Tool as described in steps 1 and 2 below, Windows platforms can also reach it via the Windows **Add/Remove** control panel application (note in Windows Vista and later, Windows Add/Remove is also referred to as **Uninstall a program** under Program in standard view and **Program and Features** in Classic View). From Add/Remove, users should select **SAS 9.3**.

Use the following steps to remove SAS software from your system.

1. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
2. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, ensure **Uninstall SAS Software** is selected. Click **Next** to continue.
3. The **Select SAS Products to Uninstall** page opens. Ensure that all the products you wish to uninstall are selected. Click **Next** to continue.
4. The **Checking System** page opens. The SAS Deployment Wizard ensures that no file being removed is being used by your system. If any files are listed in this window, follow the instructions on the page. If there are no files listed, or after any that were listed have been addressed, click **Next** to continue.
5. The **Summary** page opens, describing what products are about to be removed. Click **Start** to begin the removal of your SAS software.
6. The **Deployment in Progress** page opens, indicating that the removal is taking place. When the SAS Deployment Manager is finished, the **Deployment Complete** page opens, listing what has been removed. Click **Finish** to exit the SAS Deployment Manager.

After the uninstall tool is finished, a few files and directories will remain on your system:

- <SASHOME>\InstallMisc\InstallLogs - contains the log files for both install and uninstall. These are left behind to troubleshoot any issues with the uninstall. In some cases the install logs are just as important as the uninstall logs for determining an uninstall issue.
- <SASHOME>\ReportFontsforClients\9.3\SystemFonts\backup - The fonts are backed up to allow a user to restore the fonts that were replaced during the install.
- <SASHOME>\InstallMisc\uninstall.xml - used to house data about uninstalling hot fixes.
- <SASHOME>\InstallMisc\cleanup.bat - used to remove backed up files after maintenance is applied.
- <SASHOME>\deploymentreg - houses the deployment registry.

Also, most DataFlux software will not be removed by the uninstall wizard and will require removal using tools from DataFlux.

Finally, the uninstall tool itself will remain on your system after it has completed uninstalling the rest of your SAS software. For a complete removal of all SAS software, you should then delete the SAS Deployment Manager directory and all of its contents from your SASHOME.

Note: SAS 9.3 and SAS 9.4 on Windows share some components that are stored in the SAS 9.3 SASHOME. If you remove SAS 9.3 but intend to keep an existing SAS 9.4 deployment, do **not** remove any files from the SAS 9.3 SASHOME manually after the SAS Deployment Manager completes its task.

Windows users should also delete the SAS Deployment Manager entry from the Start menu.

Note: The shortcut location for Microsoft Windows 7/2008/Vista is C:\ProgramData\Microsoft\Windows\Start Menu\Programs\SAS\SAS Deployment Manager. The shortcut location for Microsoft Windows XP/2003 is C:\Users\All Users\SAS\SAS Deployment Manager.

Quiet Removal of SAS Software

A quiet uninstallation allows you to provide all of the responses that would normally be supplied to the SAS Deployment Manager when running interactively, but without the presence of a user. It is intended for use in any context that does not require a user to be present at the machine.

In order to perform a quiet uninstallation, you should first create a response file according to the "Record Mode" section of "Record and Playback" in "[Chapter 7 – SAS Deployment Manager: Command Line Options](#)" on page 41. After you have created a response file, you should use the information in the "Quiet Playback Mode" section to perform the quiet deployment on the target machine.

Remove Existing Configuration

Choose this option to remove configuration content for an existing configuration. Installed products will not be removed. For more information, refer to the "Removing a SAS Configuration" topic in the *SAS 9.3 Intelligence Platform: Installation and Configuration Guide* located at <http://support.sas.com/93administration>

Update SID File in Metadata

Choose this option to update the SID file in metadata to license SAS middle-tier products. SAS Foundation software is not affected by this option. For more information, refer to the "Updating the SID File in Metadata for SAS Solutions" topic in the *SAS 9.3 Intelligence Platform: Installation and Configuration Guide* located at <http://support.sas.com/93administration>

Update Host Name References

Choose this option to update host name references in an existing configuration. For more information, refer to the "Using the SAS Deployment Manager to Update Host Name References" appendix in the *SAS 9.3 Intelligence Platform: System Administration Guide* located at <http://support.sas.com/93administration>

Applying Hot Fixes

For information about how to find hot fixes and install them using the SAS Deployment Manager, see the "Applying Hot Fixes" section on page 23.

Update Existing Configuration

Choose this option to configure SAS products that have been updated or upgraded. For more information, refer to the “Configure Updated or Upgraded SAS Products” topic of the “Configuring SAS Products” section of the *SAS 9.3 Intelligence Platform: Installation and Configuration Guide*, located at <http://support.sas.com/93administration>

SAS/ACCESS Configuration

Configure SAS/ACCESS Interface to Greenplum (UNIX only)

This option is only available if you have installed SAS/ACCESS Interface to Greenplum on a UNIX system. Select this option to specify the location for the DataDirect Greenplum drivers that are required for SAS/ACCESS Interface to Greenplum.

1. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
2. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, select **Configure SAS/ACCESS Interface to Greenplum**. Click **Next** to continue.
3. The **Specify DataDirect Greenplum Drivers Directory** page opens. Enter the location of the DataDirect Greenplum drivers in the text box. You can also use **Browse** to search for the location. When the location is entered in the text box, click **Next** to continue.
4. The **Summary** page opens, listing SAS/ACCESS Interface to Greenplum as about to be configured. Click **Start** to begin the configuration.
5. The **Summary** page changes to **Deployment Complete** with a green check beside SAS/ACCESS Interface to Greenplum. Click **Finish** to close the SAS Deployment Manager.

Configure SAS/ACCESS Interface to Microsoft SQL (UNIX only)

This option is only available if you have installed SAS/ACCESS Interface to Microsoft SQL on a UNIX system. Select this option to specify the location for the Microsoft SQL Server ODBC drivers that are required for SAS/ACCESS Interface to Microsoft SQL.

1. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
2. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, select **Configure SAS/ACCESS Interface to Microsoft SQL**. Click **Next** to continue.
3. The **Specify Microsoft SQL Server ODBC Drivers Directory** page opens. Enter the location of the Microsoft SQL Server ODBC drivers in the text box. You can also use **Browse** to search for the location. When the location is entered in the text box, click **Next** to continue.
4. The **Summary** page opens, listing SAS/ACCESS Interface to Microsoft SQL as about to be configured. Click **Start** to begin the configuration.
5. The **Summary** page changes to **Deployment Complete** with a green check beside SAS/ACCESS Interface to Microsoft SQL. Click **Finish** to close the SAS Deployment Manager.

Configure SAS/ACCESS Interface to MySQL (UNIX only)

This option is only available if you have installed SAS/ACCESS Interface to MySQL on a UNIX system. Select this option to indicate the version of MySQL that you are using with SAS/ACCESS Interface to MySQL.

1. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
2. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, select **Configure SAS/ACCESS Interface to MySQL**. Click **Next** to continue.
3. The **Select MySQL Software Version** page opens. Select the version of MySQL that you are using. Click **Next** to continue.
4. The **Summary** page opens, listing SAS/ACCESS Interface to MySQL as about to be configured. Click **Start** to begin the configuration.
5. The **Summary** page changes to **Deployment Complete** with a green check beside SAS/ACCESS Interface to MySQL. Click **Finish** to close the SAS Deployment Manager.

Configure SAS/ACCESS Interface to Oracle (UNIX only)

This option is only available if you have installed SAS/ACCESS Interface to Oracle on a UNIX system. Select this option to indicate the version of Oracle that you are using with SAS/ACCESS Interface to Oracle.

1. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
2. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, select **Configure SAS/ACCESS Interface to Oracle**. Click **Next** to continue.
3. The **Select Oracle Software Version** page opens. Select the version of Oracle that you are using. Click **Next** to continue.
4. The **Summary** page opens, listing SAS/ACCESS Interface to Oracle as about to be configured. Click **Start** to begin the configuration.
5. The **Summary** page changes to **Deployment Complete** with a green check beside SAS/ACCESS Interface to Oracle. Click **Finish** to close the SAS Deployment Manager.

Configure SAS/ACCESS Interface to Sybase (UNIX only)

This option is only available if you have installed SAS/ACCESS Interface to Sybase on a UNIX system. Select this option to indicate the version of Sybase that you are using with SAS/ACCESS Interface to Sybase.

1. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
2. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, select **Configure SAS/ACCESS Interface to Sybase**. Click **Next** to continue.

3. The **Select Sybase Software Version** page opens. Select the version of Sybase that you are using. Click **Next** to continue.
4. The **Summary** page opens, listing SAS/ACCESS Interface to Sybase as about to be configured. Click **Start** to begin the configuration.
5. The **Summary** page changes to **Deployment Complete** with a green check beside SAS/ACCESS Interface to Sybase. Click **Finish** to close the SAS Deployment Manager.

SAS/IntrNet Service Tasks

The selections under this heading are only available if you have installed SAS/IntrNet on this machine.

Create Socket Service

A socket service runs the application server continuously, waiting for new requests, and refers to the protocol that is used (TCP/IP sockets) to communicate between the server and the Application Broker. Using this type of service, many servers can run at the same time, letting the Application Broker balance the load. Select this option to configure the socket service.

1. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
2. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, select **Create Socket Service**. Click **Next** to continue.
3. The **Specify Service Name** page opens. Use the guidelines on that page to type a name for your socket service in the text box. Click **Next** to continue.
4. The **Specify Service Directory** page opens. Type the location where you want the socket service to be stored in the text box. You can also use **Browse** to search for a location. Click **Next** to continue.
5. The **Specify Service Ports** page opens. Enter the ports for the servers that you want to make up the socket service in the text box. Click **Next** to continue.
6. The **Specify Administrator Password** page opens. If you want the administrator of the socket service to be protected by a password, enter it into the **Password** text box and then again in the **Confirm Password** text box. If you do not want to use a password, leave both text boxes empty. Click **Next** to continue.
7. The **Summary** page opens, describing the action the SAS Deployment Manager is about to take. Click **Start** to begin this action.
8. The **Deployment in Progress** page opens, indicating that the action is taking place. When the SAS Deployment Manager is finished, the **Deployment Complete** page opens, listing what has been done. Click **Finish** to exit the SAS Deployment Manager.

Create Launch Service

The launch service starts a new server for each request. Although this method can require more time than a socket service because of the application server start-up time, it is easier to administer and provides some security advantages.

1. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
2. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, select **Create Launch Service**. Click **Next** to continue.
3. The **Specify Service Name** page opens. Use the guidelines on that page to type a name for your launch service in the text box. Click **Next** to continue.
4. The **Specify Service Directory** page opens. Type the location where you want the launch service to be stored in the text box. You can also use **Browse** to search for a location. Click **Next** to continue.
5. The **Summary** page opens, describing the action the SAS Deployment Manager is about to take. Click **Start** to begin this action.
6. The **Deployment in Progress** page opens, indicating that the action is taking place. When the SAS Deployment Manager is finished, the **Deployment Complete** page opens, listing what has been done. Click **Finish** to exit the SAS Deployment Manager.

Configure Load Manager

The Application Load Manager is a separate, optional process that can be used to enhance the distribution of Application Dispatcher resources on a network. If installed, it records the state of all application servers and maintains a separate dynamic pool of available servers. These capabilities enable the Load Manager to distribute Application Dispatcher requests most efficiently.

1. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
2. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, select **Create Load Manager**. Click **Next** to continue.
3. The **Specify Port** page opens. Type the name or number of the port you want the load manager to use in the text box. Click **Next** to continue.
4. The **Summary** page opens, describing the action the SAS Deployment Manager is about to take. Click **Start** to begin this action.
5. The **Deployment in Progress** page opens, indicating that the action is taking place. When the SAS Deployment Manager is finished, the **Deployment Complete** page opens, listing what has been done. Click **Finish** to exit the SAS Deployment Manager.

Create Pool Service

Using the Application Load Manager, the pool service starts servers from the pool as needed to handle queued jobs. When a job completes, the server becomes available for new requests until an optional idle time-out is reached, at which time the server shuts down.

1. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
2. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, select **Create Pool Service**. Click **Next** to continue.
3. The **Specify Service Name** page opens. Use the guidelines on that page to type a name for your pool service in the text box. Click **Next** to continue.
4. The **Specify Service Directory** page opens. Type the location where you want the pool service to be stored in the text box. You can also use **Browse** to search for a location. Click **Next** to continue.
5. The **Specify Administrator Password** page opens. If you want the administrator of the pool service to be protected by a password, enter it into the **Password** text box and then again in the **Confirm Password** text box. If you do not want to use a password, leave both text boxes empty. Click **Next** to continue.
6. The **Summary** page opens, describing the action the SAS Deployment Manager is about to take. Click **Start** to begin this action.
7. The **Deployment in Progress** page opens, indicating that the action is taking place. When the SAS Deployment Manager is finished, the **Deployment Complete** page opens, listing what has been done. Click **Finish** to exit the SAS Deployment Manager.

Configure Spawner (UNIX only)

The SAS spawner is used to start new application servers on behalf of the connecting client. A spawner is assigned to a single port on the server and listens for requests for connection to the server. The spawner is used with a pool service but is optional. If the application servers are not on the same machine as the load manager, you must use a spawner to start your application servers.

1. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
2. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, select **Configure Spawner**. Click **Next** to continue.
3. The **Specify Port** page opens. Type the name or number of the port you want the spawner to use in the text box. Click **Next** to continue.
4. The **Specify Service Directory** page opens. Type the location where you want the spawner to be stored in the text box. You can also use **Browse** to search for a location. Click **Next** to continue.
5. The **Summary** page opens, describing the action the SAS Deployment Manager is about to take. Click **Start** to begin this action.

6. The **Deployment in Progress** page opens, indicating that the action is taking place. When the SAS Deployment Manager is finished, the **Deployment Complete** page opens, listing what has been done. Click **Finish** to exit the SAS Deployment Manager.

Chapter 7 — SAS Deployment Manager: Command Line Options

This chapter contains command line options that can be used with the SAS Deployment Manager, including those required for a quiet removal of your SAS software.

Quiet Deployment

A quiet deployment allows you to provide all of the responses that would normally be supplied to the SAS Deployment Manager when running interactively, but without the presence of a user. It is intended for use in any context that does not require a user to be present at the machine.

In order to perform a quiet deployment, you should first create a response file according to the "Record Mode" section of "Record and Playback" below. After you have created a response file, you should use the information in the "Quiet Playback Mode" section below to perform the quiet deployment on the target machine.

Note: These command line options cannot be used for the quiet installation of hot fixes. If you are interested in quietly installing hot fixes, you should use the hot fix launcher script and its appropriate command line options, described beginning on page 52.

Record and Playback

Record and playback is a feature in the SAS Deployment Manager that is used to save dialog responses to a file and then load those responses at a later point. The SAS Deployment Manager provides three different modes for record and playback. Each mode is described in detail below.

Note that when using playback, the SAS Deployment Wizard should be at the same level of configuration prompting as was used in record mode. Manual revision of the response file should be attempted only with extreme caution by users with experience with SAS configuration or with the assistance of a SAS consultant or Technical Support.

Record Mode

Note: The response file generated with `-record` may contain passwords in plain or encrypted format. You should secure the response file as you would any other sensitive information.

Running the SAS Deployment Manager in record mode will cause it to create a response file that contains values for each of the prompts the user sees when running the SAS Deployment Manager. The SAS Deployment Manager must run to completion when creating the response file in this mode.

Usage

`-record`

The response file will be created in the user's home directory on all platforms with a file name of `sdwresponse.properties`.

The response file location can be specified by adding an additional command line argument:

`-responsefile "<full path to the response file>"`

Note: If you specify a file location where a file already exists, the pre-existing file will be overwritten by the SAS Deployment Manager.

Example

```
sasdm.exe -record -responsefile "C:\sdwresponse.properties"
```

By default, no deployment occurs when running in a record mode. In order to force a deployment while recording, use `-deploy`.

Note: If you use any other command line options while using record and playback, those options are not included in the response file. To properly use the response file, you must repeat those same command line options with the playback.

Quiet Playback Mode

Users can suppress the user interface for the SAS Deployment Manager by running in this mode. The mode requires an existing response file. If the SAS Deployment Manager encounters a dialog for which there is not a valid response in the response file, a message will be recorded in the log file and the SAS Deployment Manager will return an error code of -1. There is no visual feedback while the SAS Deployment Manager is running in this mode. SAS recommends that you check your log file after the deployment to determine if any errors occurred.

The location of the log files is described in the "SAS Deployment Wizard Log Files" section below.

Note: This command line option cannot be used for the quiet installation of hot fixes. If you are interested in quietly installing hot fixes, you should use the hot fix launcher script and its appropriate command line options, described beginning on page 52.

Usage

```
-quiet
```

The response file must already exist and will default to the user's home directory on all platforms with a file name of `sdwresponse.properties`.

The response file can be specified by adding an additional command line argument:

```
-responsefile "<full path to the response file>"
```

Example

```
sasdm.exe -quiet -responsefile "C:\Program Files\SASHome\  
sdwresponse.properties"
```

Note on Windows Usage

Windows users also have the `-wait` option available for their use. The `-wait` option forces the `sasdm.exe` process to remain in the task list until the SAS Deployment Manager completes. The following is an example using the `-wait` option:

```
sasdm.exe -wait -quiet -responsefile "C:\Program Files\SASHome  
\sdwresponse.properties"
```


Partial Prompting

When running the SAS Deployment Manager in partial prompt mode, the user only sees dialogs that do not have a valid response in the response file. This mode is used when the SAS Deployment Manager resumes after being interrupted by a reboot and values originally supplied are no longer valid. This can occur when mapped drives are lost after rebooting on Windows. This mode may also be used by administrators to supply some of the deployment information for their users.

Usage

```
sasdm.exe -partialprompt
```

The response file must already exist and will default to the user's home directory on all platforms with a file name of `sdwresponse.properties`.

The response file can be specified by adding an additional command line argument:

```
-responsefile <full path to the response file>
```

Example

```
sasdm.exe -partialprompt -responsefile "C:\Program Files\SASHome\sdwresponse.properties"
```

Monitoring the SAS Deployment Manager During Quiet Playback

Running the SAS Deployment Manager in quiet mode makes it more difficult to monitor the deployment and to notice if errors occur. To address this concern, you can use the Task Manager on Windows and periodically issue the `ps` command on UNIX to track whether the SAS Deployment Manager is running.

On Windows, specify the `-wait` option when invoking the SAS Deployment Manager in quiet mode to cause `sasdm.exe` to display and remain in the Windows Task Manager process list.

For example:

```
sasdm.exe -quiet -wait -responsefile "C:\Program Files\SASHome\sdwresponse.properties"
```

If you do not use `-wait`, monitor the process named `java.exe`.

Note: Use of network management software (such as SCCM or Tivoli) might require you to use the `-wait` option when running the SAS Deployment Manager in quiet mode in order for such software to determine when the SAS Deployment Manager finishes executing. Refer to your network management platform documentation for more information.

As with most processes on UNIX, issue the `ps` command to monitor the SAS Deployment Manager running in quiet mode. Remember that output from a `ps` command can be misleading because the process name returned is not always named `sasdm.sh`, since the actual script that the SAS Deployment Manager is running at any given time varies. However, the process ID remains the same.

Interactive Playback Mode

The response file can also be used to default all the prompts in the SAS Deployment Manager. In this mode, all the dialogs in the SAS Deployment Manager are displayed and the default values are loaded from the response file.

Note: *Even if you are using `-responsefile` to deploy your software on a UNIX system, you must still deploy a windowing environment, such as X11. Using `-responsefile` still invokes a graphical user interface.*

Usage

```
-responsefile "<full path to the response file>"
```

Example

```
sasdm.exe -responsefile "C:\Program Files\SASHome\  
sdwresponse.properties"
```

Using a Text-Based Interface (UNIX and z/OS only)

If you do not wish to rely on an X11 server for UNIX or z/OS, you can use the SAS Deployment Manager in console mode, allowing you to use a headless system to configure your server. Console mode cannot be used on your middle tier. If you use console mode, each dialog used in the deployment of your SAS software is represented in text.

Note: *If you are instructed to enter a sequence that includes angle brackets, such as "Enter <q> to quit", you must include those symbols.*

The `-console` command line option can be used with other options at the same time, such as recording or playing back a response file.

The `-console` command line option also supports two options to specify the size of the output of the SAS Deployment Manager. Use `-pagesize #` to specify the number of lines to display before pausing the output and `-pagewidth #` to specify the number of characters to display on a line before wrapping to another line. Note that `-pagesize` and `-pagewidth` will not work with any other command line option.

Usage

```
-console [-pagesize #] [-pagewidth #]
```

Examples

UNIX

```
sasdm.sh -console -pagesize 20 -pagewidth 50
```

z/OS

```
sasdm.rexx -console -pagesize 20 -pagewidth 50
```

Chapter 8 — Additional Tools

SAS Software Depot Check Utility (Windows and UNIX only)

The SAS Software Depot Check Utility verifies the existence of expected files in SAS 9.3 software depots. The SAS Software Depot Check Utility performs the following tasks in order to provide you with information about the files in your depot:

- totals the files found in a depot
- lists files found and their directory path(s)
- lists and totals the files missing from the depot and shows the paths where the missing files should be found
- lists and totals the orders found
- lists and totals the SAS installation data files found
- lists the files that are the wrong size and specifies their incorrect and correct sizes
- lists the files where checksums are incorrect and specifies their correct and incorrect checksums

The SAS Software Depot Check Utility can be used to validate SAS 9.3 depots, including depots that contain subsetting orders that have been created during initial download with the SAS Download Manager, and depots that contain subsetting orders that have been created using the SAS Deployment Wizard.

The following is an example of the output of the SAS Software Depot Check Utility:

```
SAS Software Depot Check Utility version X.X
Thu 12/15/11 8:37:24 AM
USERNAME=someuser

FOUND: C:\SAS Software Depot\sid_files
FOUND: C:\SAS Software Depot\cd.id
FOUND: C:\SAS Software Depot\sasstd.txt
FOUND: C:\SAS Software Depot\setup.dat
FOUND: C:\SAS Software Depot\depotsummary.html
FOUND: C:\SAS Software Depot\order_data
FOUND: C:\SAS Software Depot\cd.id
FOUND: C:\SAS Software
Depot\products\acceldb2fmt__93130__dba__en__sp0__1\deployment.xml
FOUND: C:\SAS Software
Depot\products\acceldb2fmt__93130__dba__en__sp0__1\en_bin.xml
FOUND: C:\SAS Software
Depot\products\acceldb2fmt__93130__dba__en__sp0__1\en_bin.zip
FOUND: C:\SAS Software
Depot\products\acceldb2fmt__93130__dba__en__sp0__1\en_lib.xml
FOUND: C:\SAS Software
Depot\products\acceldb2fmt__93130__dba__en__sp0__1\en_lib.zip
FOUND: C:\SAS Software
Depot\products\acceldb2fmt__93130__dba__en__sp0__1\en_misc.xml
FOUND: C:\SAS Software
Depot\products\acceldb2fmt__93130__dba__en__sp0__1\en_misc.zip
FOUND: C:\SAS Software
Depot\products\acceldb2fmt__93130__dba__en__sp0__1\install.xml
```

```
...
*** 13408 Files were checked in C:\SAS Software Depot

*** 2 Orders were found in this depot:
099GN1
09B4RX

*** 2 SID files were found in C:\SAS Software Depot\sider_files:
SAS93_099GN1_70068130_Win_X64_Wrkstn_Srv.txt
SAS93_09B4RX_70068128_Win_X64_Wrkstn.txt

*** No files with wrong size were found in this depot.

*** No files with wrong checksums were found in this depot.
```

Running the SAS Software Depot Check Utility with a User Interface on Windows

Perform the following steps to run the SAS Software Depot Check Utility with a user interface on a Windows machine. SAS strongly recommends that the user ID that was used to download the SAS Software Depot also be used to execute the SAS Software Depot Check Utility.

1. Open the `utilities` directory in your SAS Software Depot.
2. Double-click the `SASDepotCheck.exe` (if your operating system is Windows Vista, Windows 7, or Windows Server 2008, you may have to right-click the `SASDepotCheck.exe` and select **Run as administrator**).
3. The **Browse for Folder** dialog opens, asking you to specify the location of your SAS Software Depot. You can browse to the location or enter the location directly in the **Folder** text box. When you have specified the location, click **OK**.
4. The **Select path and file name for results** dialog opens, asking you to specify the name of the results file and where you want to create it. Browse to a location in the directory pane, then either enter a file name in the **File name** text box or use the default. Click **Save** to continue.
5. The **Verbose?** dialog opens, asking you if you want the results file to list all of the files found in the depot. Select **Yes** or **No**, and the SAS Software Depot Check Utility begins.
6. A progress window opens. The window lists the file as they are being checked and also shows a progress bar.
7. When the SAS Software Depot Check Utility has completed its run, the results file opens.

Running the SAS Software Depot Check Utility Manually for Windows and UNIX

Windows

To launch the SAS Software Depot Check Utility manually on a Windows machine, run the `SASDepotCheck.exe` via a DOS command-line prompt using the following syntax. SAS strongly recommends that the user ID that was used to download the SAS Software Depot also be used to execute the SAS Software Depot Check Utility.

```
SASDepotCheck.exe -i <SAS Software Depot directory> -o <output file path
and name> -v
```

The `-v` command line is optional and should be used to see the full list of all files found in the depot. If you do not include the `-i` and `-o` command line options, you will be queried interactively by dialog box per the steps in the “Running the SAS Software Depot Check Utility with a User Interface” section above.

UNIX

To launch the SAS Software Depot Check Utility manually on a UNIX machine, execute `sas_depot_check.sh` using the following syntax. SAS strongly recommends that the user ID that was used to download the SAS Software Depot also be used to execute the SAS Software Depot Check Utility.

```
sas_depot_check.sh -i <SAS Software Depot directory> -o <output file
path and name> -v
```

The `-v` command line is optional and should be used to see the full list of all files found in the depot. If you do not include the `-i` and `-o` command line options, you will be given help information describing them, with the expectation that you will execute the script again with the correct command line information.

View Registry

For SAS 9.3, the installation of hot fixes is logged in the SAS Deployment Registry. A reporting utility named View Registry (`sas.tools.viewregistry.jar`) processes the deployment registry and generates a report named `DeploymentRegistry.html`. The deployment registry report identifies all SAS 9.3 software that is installed in the current `SASHOME` location, including hot fixes. The following is a sample of the output:

```
-----
Host: s64
Product Code: base
Version: 9.3
Display Name: Base SAS
Display Version: 9.3
Hotfix Entry: Hotfix A01002
Hotfix Entry: Hotfix A01012
Hotfix Entry: Hotfix A01021
Hotfix Entry: Hotfix A50001
Hotfix Entry: Hotfix A50005
Hotfix Entry: Hotfix A50016
-----
Host: s64
Product Code: stat
Version: 9.3
Display Name: SAS/STAT
Display Version: 9.3
-----
```

A text file version of the report, `DeploymentRegistry.txt` is also created. Both the HTML and `.txt` files are created in the `<SASHOME>/deplymntreg` directory. The utility is installed by default with SAS 9.3 or later in `<SASHOME>/deplymntreg`.

Use the following steps to generate a deployment registry report using this utility. Note that `sas.tools.viewregistry.jar` must be executed from the `<SASHOME>/deploymentreg` directory.

Windows:

Launch `sas.tools.viewregistry.jar` (the default location is `C:\Program Files\SASHome\deploymentreg`).

UNIX:

Execute the JAR file. For example:

```
java -jar sas.tools.viewregistry.jar
```

Note: In order to run the reporting utility, Windows users must have Write permissions for the `deploymentreg` directory (the default location is `C:\Program Files\SASHome\deploymentreg`) because the resulting reports are written to this location. UNIX users must have Write permission to the `SASHOME` location.

SAS File Type Management Tool (Windows only)

The SAS File Type Management Tool is only available for Windows customers. It gives the user a utility to ensure that file types remain associated with SAS programs. To invoke the tool, select **SAS**→**Utilities**→**Manage SAS File Types** from the **Start** menu. If you are using 64-bit Windows, **Manage SAS File Types** will be followed by a parenthetical "64-bit." If you are using Windows Vista, Windows 7, or Windows Server 2008, you may have to right-click and select **Run as administrator**.

In the combo box at the top of the dialog, select the SAS product you want to associate file types with. When you have selected the product, the list of file types that can be associated with that product appear in the lower window. Select the file extensions you wish to be associated with the chosen SAS product. You can use **Select All** to select all file extensions to be associated with the selected SAS product. Use **Clear All** to clear the list of selected file extensions. You can also select individual file extensions to associate with the selected SAS product. Any file extensions which are not selected will keep their existing file type association.

After you have finished associating the file types with the various SAS products, click **OK** to save the associations or **Cancel** to return to the associations that you were using before you invoked the SAS File Type Management Tool.

SAS Update File Cleanup Utility (Windows and UNIX only)

As the SAS Deployment Wizard performs updates to an existing deployment, it creates backup files to be used should you need to roll back the updates. However, once you are confident that the updates will not need removal, SAS has provided a tool to remove the backup files and free up space. The following instructions describe how to invoke and use the SAS Update File Cleanup Utility. The SAS Update File Cleanup Utility is only available for Windows and UNIX users.

1. In the course of installing updates, the SAS Update File Cleanup Utility is placed in your `SASHOME`, at `<SASHOME>\InstallMisc`. Windows users should double-click `cleanup.exe` at that location, and UNIX users should start `cleanup.sh`.
2. The SAS Update File Cleanup Utility opens, listing the `SASHOME` that will be cleaned up. The utility can only be used in the `SASHOME` where it is located, so if you want to clean up

SASHOME on different machines, you must use the SAS Update File Cleanup Utility placed on each machine when an update was performed on it.

3. Note that any files that are removed by the utility cannot be recovered. If you accept this condition, click **Remove Backup Files** to start the utility. The **Results** pane will show where the utility is scanning, what files are being deleted, and how much space is being cleared.
4. When the utility finishes running, click **Close** to close the utility.

Appendix A — Windows Administration

Preparing for a SAS Installation in a Terminal Server Environment or Citrix

To properly install SAS 9.3 on a server with Terminal Services, the following steps must be performed:

1. Log on as an administrator to the Terminal Server to which SAS 9.3 will be installed.
2. Install mode is required for installing applications on Windows Terminal Servers. There are two ways to place the system in install mode:
 - Use the Add/Remove Programs Control Panel icon and select **Install**. You will be asked to change the user option. Be sure to select the option that allows all users to begin with common application settings.
 - Type `change user /install` at a command prompt (`cmd.exe`). A message will inform you if the install mode is set correctly.
3. Installation of SAS 9.3 on Terminal Servers may require system reboots. In order to minimize user interruption, *have all users log off of the terminal server before installation*. A remote terminal session can be used to install SAS software to a Terminal Server, but it is not a recommended practice due to the potential for reboots.

Before you proceed with this installation, SAS recommends that you close your anti-virus and firewall software. If you keep those types of software running, you increase the possibility that one or more reinstallations of SAS software will be necessary, since certain anti-virus and/or firewall configurations can prevent an application from installing successfully. If you are unable to close the anti-virus or firewall software, make sure that the configuration allows you to install software and to update the registry. If your SAS installation fails and you have mandatory anti-virus or firewall software running, check with your system administrator.

If a reboot is required, you will have to reestablish the connection to the Terminal Server after the reboot is complete and you may need to put the server back in install mode. After logging on to the Terminal Server session, the set-up should restart and continue the installation. If the set-up does not restart, start the set-up and it will resume where it left off before the reboot.

Installing SAS 9.3 in a Terminal Server Environment or Citrix

Installing SAS 9.3 on a server with Terminal Services is the same as installing SAS 9.3 on any server.

Appendix B — UNIX Administration

The following are sample mount commands for each supported UNIX system. The device names listed below are used only for example; substitute your actual device names accordingly. These instructions assume your mount point is `/mnt/dvdrom`; however, you may choose another location.

Note: *Because of the number of variances based on the deployment of your hardware, these commands are necessarily generic. For the exact mount command you should use, contact your system administrator.*

AIX

```
# mount -r -v cdrfs /dev/cd0 /mnt/dvdrom
```

HP-UX and HP-UX for the Itanium Processor Family

```
# mount -F cdrfs -o rr,ro /dev/dsk/c0t0d0 /mnt/dvdrom
```

Linux for Intel Architecture and Linux for x64

```
# mount -r /dev/dvd /mnt/dvdrom
```

Solaris and Solaris for x64

```
# mount -r -F hsfs /dev/dvd /mnt/dvdrom
```

Remote Mounting

If your DVD drive resides on another host, and is properly exported, mount the DVD using NFS by issuing a command similar to the following:

```
# mount -o ro <remotehost>:/<dvd-rom-dir> /mnt/dvdrom
```

In this example, `<remotehost>` refers to the machine that owns the DVD drive and `<dvd-rom-dir>` is the actual mount point for the DVD drive on the server.

Once the DVD is mounted, launch the executable with the following command:

```
$ /mnt/dvdrom/<executable>
```

Note: *When using a system with an automounter, it is common for a File Manager window to display when the media is inserted in the DVD drive. Do not invoke the executable via the File Manager since this will create a “Device busy” condition, preventing disk swapping later in the install process.*

Appendix C — Applying Hot Fixes with Earlier Versions of the SAS Deployment Wizard

With the second maintenance release of SAS 9.3, described as revision 12w35 on your Software Order E-mail, the SAS Deployment Wizard and the hot fix process have been modified and are described in Chapter 4 — Finding and Applying Hot Fixes on page 22. However, if you are using a SAS Deployment Wizard from prior to the second maintenance release, the hot fix process is described in this appendix.

Applying Hot Fixes for Windows and UNIX

Use this option to apply downloaded hot fixes to your SAS software. If you are interested in quiet installation of hot fixes, you must use the hot fix launcher script and command line options described below.

Before beginning, ensure that SAS services and processes have been halted. In addition, since you are about to make changes to a working deployment, you may want to back up your installation before applying the hot fixes.

1. After starting the SAS Deployment Manager, the **Choose Language** page opens. Choose the language in which you want to perform the configuration of your downloaded software. Click **OK**.
2. The **Select SAS Deployment Manager Task** page opens. Under Administration Tasks, select **Apply Hot Fixes**. Click **Next** to continue.
3. The **Apply Hot Fixes** page opens. Type the location of the hot fix package that you have downloaded into the text box or use **Browse** to search for the hot fix package. When the location is in the text box, click **Start** to continue.
4. A window opens showing that the SAS Deployment Manager is applying your hot fixes. When the hot fixes are installed, the **Hot Fix Application Success** page opens, describing what has been applied. Click **Next** to continue.
5. The **Additional Resources** page opens, listing links to important documentation about deploying SAS software. Click **Finish** to close the SAS Deployment Manager.

After the hot fixes have been applied, a copy of them will be placed in `<SASHOME>/InstallMisc/HotFixes/Installed`. You may wish to remove the hot fixes from the location where they were originally stored since they will be considered for application if you put any new hot fixes in the same location. Old hot fixes will not be reapplied on the same machine but will cause clutter on the user interface and in your log files.

Using the Hot Fix Launcher Script

In addition to installing hot fixes from the SAS Deployment Manager, you can install hot fixes using a launcher script. This is especially useful for silent installation and across enterprises.

Before beginning, ensure that SAS services and processes have been halted. In addition, since you are about to make changes to a working deployment, you may want to back up your installation before applying the hot fixes.

Follow the steps below to use the launcher script:

1. Find the directory where the SAS Deployment Manager executable, `sasdm.exe` or `sasdm.sh` depending on your operating system, is located. By default, that location is `<SASHOME>/SASDeploymentManager/9.3`.
2. Execute the launcher script, `sashf.exe` or `sashf.sh`, again depending on your operating system, in the same directory.

Note: *If your hot fixes are not in the default location, the hot fix launcher script will not invoke without using the `-hotfixdir` command line option described below.*

3. The **Apply Hot Fixes** page opens. Type the location of the hot fix package that you have downloaded into the text box or use **Browse** to search for the hot fix package. When the location is in the text box, click **Start** to continue.
4. A window opens showing that the SAS Deployment Manager is applying your hot fixes. When the hot fixes are installed, the **Hot Fix Application Success** page opens, describing what has been applied. Click **Next** to continue.
5. The **Additional Resources** page opens, listing links to important documentation about deploying SAS software. Click **Finish** to close the SAS Deployment Manager.

After the hot fixes have been applied, a copy of them will be placed in `<SASHOME>/InstallMisc/HotFixes/Installed`. You may wish to remove the hot fixes from the location where they were originally stored since they will be considered for application if you put any new hot fixes in the same location. Old hot fixes will not be reapplied on the same machine but will cause clutter on the user interface and in your log files.

Command Line Options for the Launcher Script

Multiple command-line options may be used with the hot fix launcher script. *Do not assume that the descriptions below apply to the SAS Deployment Manager.* If you are interested in command line options for use with the SAS Deployment Manager, refer to Chapter 7 — SAS Deployment Manager: Command Line Options on page 41.

The following command line options may be used with the launcher script:

`-silent`

You can suppress the user interface for installing hot fixes (steps 3-5 above) by running in this mode. This is especially useful for enterprise-wide deployments. Note that if you have stored your hot fixes in some location other than the default (`<SASHOME>/InstallMisc/HotFixes/New`), you should also use the `-hotfixdir` option described below to identify the location of the hot fixes.

Example

```
sashf.exe -silent
```

`-hotfixdir`

By default, the launcher script will look for the hot fixes in `<SASHOME>/InstallMisc/HotFixes/New`. `-hotfixdir` allows you to specify a different directory as the default location for the hot fixes. `-hotfixdir` must be followed by a directory path to the hot fixes that you wish to apply.

Example

```
sashf.exe -silent -hotfixdir "C:\Downloads\HotFix"
-skipusercheck
```

The hot fix installer performs a check to ensure that the user ID that performed the initial deployment is also the user ID applying the hot fixes. The `-skipusercheck` command line forces the hot fix installer to skip that check so that another user ID may be used. Note that the logged in user should have the same permissions as the user that performed the deployment, otherwise permission conflicts may arise. However, if permissions are set appropriately, a different user can update files installed under a different user ID.

On UNIX, note that the ownership of the entire SAS tree must be changed to the new installer ID by issuing a command such as

```
chown -Rh <new_userid>:<group> <SASHOME>
```

Example

```
sashf.exe -skipusercheck
```

Applying Hot Fixes for z/OS**Important Notes**

1. All currently active SAS sessions, daemons, spawners, and servers must be terminated before applying hot fixes.
2. The hot fix installer has a graphical user interface that requires the use of an X11 server. If an X11 server is not available at your site, the silent installation process described below may be used.
3. SAS hot fixes are installed into new datasets after which they can be promoted to your production libraries. Several new datasets will be created in this process.

Installation Instructions

The following instructions describe the steps for installing hot fixes from UNIX System Services (USS).

Step 1: Locate SASHOME and back up the SAS Deployment Registry.

SAS recommends that you back up the `deploymntreg` directory prior to installing the hot fix. To do so, `cd` to your `SASHOME` and issue the following command:

```
cp -rf deploymntreg <backup_file_name>
```

Step 2: Launch the hot fix.

You can install hot fixes using a launcher script. This is especially useful for line mode installation.

The default directory of the launcher script, `sashf.rexx`, is located in `<SASHOME>/SASDeploymentManager/9.3`. If you are installing a 64-bit hot fix, `sashf.rexx` must be followed with a command line option, `-z64`.

Example

```
sashf.rexx -z64
```

Note: If your hot fixes are not in the default location, mentioned above, then you must indicate where the hot fix(es) you wish to install are located by using the `-hotfixdir` command line option described below.

Command Line Options for the Launcher Script

The following command line options may be used with the launcher script:

```
-silent
-headless
```

By default, hot fix installation requires an X11 server. If an X11 server is not available these options must be provided.

Example

```
sashf.rexx -silent -headless
```

```
-hotfixdir
```

By default, the launcher script will look for the hot fixes in `<SASHOME>/InstallMisc/HotFixes/New`. `-hotfixdir` allows you to specify a different directory as the default location for the hot fixes. `-hotfixdir` must be followed by a directory path to the hot fixes that you wish to apply.

Example

```
sashf.rexx -silent -hotfixdir /u/userid/hotfix
```

Note: If you are installing multiple hot fixes on a z/OS machine, all hot fixes will be installed to a set of staging hot fix libraries incorporating the name of the first alphanumeric value of the hot fixes. For example, if there are two hot fixes named A01 and B06, the staging name will be A01 with the contents of both A01 and B06 included in that image.

```
-nojobsubmit
```

The hot fix installer will not submit batch jobs to complete the application of your hot fixes. Below are some reasons for using the `-nojobsubmit` command line option which will allow you to edit and submit the batch jobs yourself:

- Your site uses JES3 (not JES2)
- Your FTP server is configured for JESINTERFACELEVEL=2
- The SAS installer ID is not authorized to use FTP
- You need to make site-specific changes to the JCL or wish to review the JCL before submission
- The FTP JES interface's requirement that the jobname be the user ID performing the install suffixed with a single letter or digit is incompatible with your site's jobname requirements

If any of these conditions apply at your site, you must use the `-nojobsubmit` command line option.

If you use the `-nojbsubmit` option, the list of hot fix jobs to execute will be written to member `JOBINDEX` in `<high-level-qualifier>.< hotfix id>.INSTALL.CNTL`. Submit the first job in the list and the entire set of `HOTFIXn` jobs will run automatically (each job submits the next job in the chain).

Note: *The hot fix CNTL library cannot be opened in Edit mode after submitting the jobs. Some hot fix jobs will need exclusive access to the CNTL library for updates.*

The `PROMOTE` job is not run as part of this sequence. It should not be submitted until you are ready to move the staged data sets into production.

Example

```
sashf.rexx -nojbsubmit
```

If your initial SAS 9.3 Basic installation was from cartridge, you will have to launch the hot fix using Method B or D. See Usage Note 43707.

-skipusercheck

The hot fix installer performs a check to ensure that the user ID that performed the initial deployment is also the user ID applying the hot fixes. The `-skipusercheck` command line forces the hot fix installer to skip that check so that another user ID may be used. Note that the logged in user should have the same permissions as the user that performed the deployment, otherwise permission conflicts may arise. However, if permissions are set appropriately, a different user can update files installed under a different user ID.

On z/OS, when using UNIX System Services, the ownership of the entire SAS tree also must be changed to the new installer ID by issuing a command such as

```
chown -Rh <new_userid>:<group> <SASHOME>
```

The user ID installing the hot fix must have the authority to create new data sets with the same high-level qualifier as the existing installation and modify the existing data sets. Also, if the `-nojbsubmit` command line option (described above) is not used, the hot fix installer automatically runs the install jobs under the original installer ID, based on data (such as jobcards and user ID) stored in the `install.properties` file.

Example

```
sashf.rexx -skipusercheck
```

Executing the Launcher Script

There are four methods for launching the hot fix script. Select the method appropriate for your environment to install this hot fix.

Method A) Line mode, Installation jobs submitted automatically

Invoke the Hot Fix Launcher script with the `-silent` and `-headless` options. The hot fix installation jobs will be automatically submitted for execution.

```
./sashf.rexx -silent -headless
```

Method B) Line mode, Installation jobs submitted manually

Invoke the hot fix installation using `-silent -headless` mode and manually submit the hot fix jobs.

```
./sashf.rexx -silent -headless -nojobsubmit
```

Method C) Graphical User Interface (GUI) mode, Installation jobs submitted automatically.

Invoke the hot fix installation. The hot fix jobs will be automatically submitted for execution.

This method requires the use of an X11 server. An installation wizard will be initiated and will guide you through the hot fix installation process.

Set your DISPLAY environment variable:

```
export DISPLAY=<your_node_name>:0
```

Issue the following command to use hot fix launcher script:

```
./sashf.rexx
```

Method D) Graphical User Interface (GUI) mode, Installation jobs submitted manually

Invoke the hot fix installation and manually submit the hot fix jobs.

This method requires the use of an X11 server. An installation wizard will be initiated and will guide you through the hot fix installation process.

Set your DISPLAY environment variable:

```
export DISPLAY=<your_node_name>:0
```

Issue the following command to execute the hot fix package:

```
./sashf.rexx Issue the following command to nojobsubmit
```

A hot fix installation log will be created in the following location:

```
<!SASHOME>/InstallMisc/InstallLogs/IT_date-and-time-stamp.log
```

(for example,

```
/sas93/InstallMisc/InstallLogs/IT_2011-07-19-13.54.19.log)
```

Note: Each attempt to install a hot fix results in the creation of a new log file giving detailed information regarding the installation process.

Step 3: Test the hot fixes.

If you want to test the hot fixes before promoting them to production, you can use the JCL, CLISTs, or REXX execs created in <high-level-qualifier>.<hot fix number>.PROCLIB, CLIST, or SASRX, respectively.

These concatenate the staged data sets before the production data sets.

Step 4: Promote the hot fix to production.

Make back-up copies of <HLQ>.CONFIG, <HLQ>.TKMVSENV, and <HLQ>.SASRXCF.

A job named PROMOTE is written to the hot fix install library (for example, <high-level-qualifier>.<hot fix number>.INSTALL.CNTL(PROMOTE)). This job should be submitted when you are ready to move the staged datasets into production.

Note: Before running this promote job, see Problem Note 45616 at <http://support.sas.com/kb/45/616.html>

The hot fix installation process for one set of hot fixes must be completed through the PROMOTE step before installing the next set of hot fixes.

Note: *After the hot fix(es) have been applied, they will be copied to <SASHOME>/InstallMisc/HotFixes/Installed. You will need to manually delete any hot fixes from <SASHOME>/InstallMisc/HotFixes/New or the location where they were originally saved before applying new hot fix(es).*

Replace the <HLQ>.CONFIG, <HLQ>.TKMVSENV, and <HLQ>.SASRXCF that the PROMOTE job created with the copies you made before running the PROMOTE job.

Post-Deployment Notes

If the hot fix installation created '&prefix.<hot fix number>.LIBRARY' and it contains a SASHOST, SASXAL, or SASXA1 module, and if you set SAS System options by assembling the DEFAULT OPTIONS TABLE using the BAOPTS1 member of the original CNTL data set, then you must re-assemble this table after applying this hot fix. To re-assemble this table, perform the following steps:

1. Edit the BAOPTS1 member in the original CNTL data set.
2. Change the SYSLMOD DD in all three LINK EDIT steps to point to the new <high-level-qualifier>.LIBRARY.
3. Rerun BAOPTS1.

If the hot fix installation created a &prefix.<hot fix number>.LIBRARY and you run with an entry point of SASLPA, then you will need to look in the unloaded library to see if any of the new modules are installed in your LPA. If so, then you will need to replace them with the new modules and refresh LPA.

In the configuration guide, the modules recommended for installation in the LPA are

SASXAL
SABXSPL
SABXDML
SABDS
SABSCLL
SABDBGM
SABZPLH
SABXGPH

Note that if you use the BNDLSUFEX option, you will have to rename the modules appropriately in your LPA. For more information about the LPA bundled configuration and information about using the BNDLSUFEX option, refer to the "Installing SAS 9.3 Foundation into the LPA/ELPA" section in the *Configuration Guide for SAS 9.3 Foundation for z/OS*.



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