

SAS[®] Deployment Wizard User's Guide



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SAS® Deployment Wizard User's Guide

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Chapter 1 — Overview of the SAS Deployment Wizard 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 9.2 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 9.2 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.

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 9.2 Intelligence Platform: Installation and Configuration Guide*, available at <http://support.sas.com/92administration>. 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 9.2 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 at any time 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 9.2 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 `sas92_XXXXXX_YYYYYYY_zzz.txt`, where `XXXXXX` is your order number, `YYYYYYY` is your setnumid (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 becomes 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\SAS`.

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.

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 for Windows 7 Users

Windows 7 requires a different JRE, 1.6.0_14 or later, than what the SAS Deployment Wizard prompts for. If you are deploying on a Windows 7 machine, ensure that the machine has JRE 1.6.0_14 or later installed and that you use the SAS Deployment Wizard dialogs to point to the location where that JRE may be found.

Note: For more information on SAS's Baseline and Higher policy, please see http://support.sas.com/resources/thirdpartysupport/baseline_plus.html.

Note about Vital Product Registry

In order to support updates to the SAS Software, installation data is stored in a "Vital Product Registry". This Registry is created in your SASHOME directory, and is located under <SASHOME>\Gen1. This registry should not be moved, modified, or deleted in any way 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 about UNIX Windowing Environments

If you are installing your software on a UNIX system, make sure that a windowing environment — such as X11 — is installed. The SAS Deployment Wizard has a graphical user interface.

Installing on UNIX as root

If a Java installation is performed under the `root` account on HP-UX or Solaris, the Vital Product Registry will not be created. This may cause future installations to fail or to be incomplete. SAS strongly recommends performing all installations under a `sas` account, and that the `root` account not be used.

Installing SAS OnlineDoc for the Web

If you are interested in using SAS OnlineDoc for the Web, some deployment and configuration tasks remain after the SAS Deployment Wizard is finished deploying your software order. For more information about those tasks, please see the *SAS Intelligence Platform: Web Application Administration Guide*, available from <http://support.sas.com/92administration>.

Chapter 2 — Best Practices

This chapter contains suggestions about how to best 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. In those instances where you do not use the default or no default is provided, it is a good idea to keep notes of what you use in case an issue arises in the future. As long as the SAS Deployment Wizard remains open, you can go back through the dialogs to see and change your entries.

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 three 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(s). 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.
- `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.
- `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.

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 a renewal SID file, 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** opens. Select the software order you want to copy and click **Create Media-Ready Image...**
3. The **Create Media** dialog opens. In the **Media Type** field, select the type of media you are going to 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 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. Please note, though, 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. If you are moving from one location on a network to another on the same network, normal copying and moving processes will work. If, however, you are moving the SAS Software Depot between locations that are not networked, you can 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 9.2 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 — Creating SAS Software Depots for Client Users and Personal Users

***Note:** The information in this chapter applies only to Microsoft Windows and Microsoft Windows for 64-Bit Itanium-based Systems users with a **Basic** order. You can determine if your order is Basic or Planning by reviewing your Software Order E-mail or SAS Order Information sheet. Customers working with other operating systems or Planning orders will not see the dialog options described in this chapter.*

Client images and personal software depots are tools used by system administrators to facilitate a server-client deployment of SAS software. A client image is a network image which acts as a file server and from which end users will run SAS. The SAS Deployment Wizard allows you to customize this image so that end users have access to only the software that you select. A personal software depot is a subset of an existing SAS Software Depot which acts as an installation point from which your end users will install SAS on their local PCs. The SAS Deployment Wizard allows you to customize this new software depot so that end users will be able to install only the software that you select. Note however, you will only be able to create the client image and the personal software depot on machines that are running the same system as the host for SAS Foundation in the order you are working from. For example, if you are working with an order for 32-bit Microsoft Windows, you cannot put an image of it on a machine using Microsoft Windows for 64-bit Itanium-based Systems.

The important difference between a client image and personal software depot is that a client image only allows the end user to use the SAS software from a central server. A personal software depot allows the user to install the software on their own machine. In either case, the newly created image is a subset of a pre-existing SAS Software Depot.

Creating a Client Software Depot

1. Start the SAS Deployment Wizard from the root level of the directory you will be working from.
2. At the **Choose Language** dialog, select the language you wish to run the SAS Deployment Wizard in.
3. The **Select Deployment Task** dialog opens. Select **Create a new SAS Software Depot** and click **Next**.
4. If you are performing this task from a SAS Software Depot that contains more than one order, the **Select Software Order** dialog opens. Select the software order you wish to create the client image from, then click **Next** to continue.
5. The **Specify Order Details** dialog opens. Verify the contents of the **Order Number** field and **Summary of SAS Software** Order window to ensure you are working with the software you intend to. Enter any information that will help you distinguish your new software depot in the **Description** and **Notes** fields. When you are ready to begin creating the client image, click **Next**.
6. The **Select SAS Software Depot Option** dialog opens. Select **Client Users** and click **Next**.
7. The **Specify SAS Installation Data File** dialog opens. The SID file location will be populated if the SAS Deployment Wizard can find a valid SID file in the `sid_files` directory. If you have moved your SID file, enter the location of the SID file for the software order you are working

with. If you aren't sure of the location of your SID file, you can click **Browse** to search for it. When you have selected a SID file, details of its contents appear in the window in the dialog.

When you have entered the location of the correct SID file in the text box, click **Next** to continue.

8. The **Specify SAS Software Depot Directory** dialog opens. Enter where you would like the client image to be created in the **SAS Software Depot** Directory text box. You can click **Browse** to search for a location. When you have entered the location for the client image in the text box, click **Next** to continue.

Note: *You cannot create a SAS Software Depot of this type in a target directory that contains any files or sub-directories. Since the object of this new depot is to allow end users to run from it, you should ensure that those end users have access to the new depot location.*

9. The **Final Review** dialog opens, summarizing the information you have entered in the preceding steps. The information also includes the required disk space to create the client image. If the information is correct and you have enough space for the client image, click **Start** to begin the copy process. If you need to change any of your previous entries, click **Back** to go to the previous screens and make changes.
10. The **Adding SAS Software Order** dialog opens and a new **SAS Administrator Wizard** screen opens. Click **Next** in the **SAS Administrator Wizard** dialog to continue.
11. The **SAS Administrator Wizard Select Components** dialog opens with a list of all the SAS Foundation software in the depot you are working from. Ensure that there is a mark in the check box beside each product you want to copy. Check the SAS 9.2 box to select everything in the list. Uncheck the SAS 9.2 box to deselect everything in the list. If you want to copy everything from the SID file that you selected, click **Select Licensed Software**. When the software you want to copy has been marked, click **Next**.
12. The **SAS Administrator Wizard Start Copying Files** dialog opens. If you feel you may have made an error in your entries, click **Back** to change them. If you are ready to copy the files, click **Next** to continue.
13. A status window opens with a progress bar to indicate how much work remains to be done. When the process is finished, the **SAS Administrator Wizard** dialog closes, and progress begins in the **Adding SAS Software Order** dialog. When it is complete, click **Next** to continue.
14. The **SAS Software Order Added** dialog opens, with a description of the tasks the SAS Deployment Wizard has just completed. Click **Finish** to close the SAS Deployment Wizard.

Creating a Personal Software Depot

1. Start the SAS Deployment Wizard from the root level of the directory you will be working from.
2. At the **Choose Language** dialog, select the language you wish to run the SAS Deployment Wizard in.
3. The **Select Deployment Task** dialog opens. Select **Create a new SAS Software Depot** and click **Next**.
4. If you are performing this task from a SAS Software Depot that contains more than one order, the **Select Software Order** dialog opens. Select the software order you wish to create the client image from, then click **Next** to continue.

5. The **Specify Order Details** dialog opens. Verify the contents of the **Order Number** field and **Summary of SAS Software** Order window to ensure you are working with the software you intend to. Enter any information that will help you distinguish your new software depot in the **Description** and **Notes** fields. When you are ready to begin creating the new depot, click **Next**.
6. The **Select SAS Software Depot Option** dialog opens. Select **Personal Users** and click **Next**.
7. The **Specify SAS Installation Data File** dialog opens. The SID file location will be populated if the SAS Deployment Wizard can find a valid SID file in the `sid_files` directory.. If you have moved your SID file, enter the location of the SID file for the software order you are working with. If you aren't sure of the location of your SID file, you can click **Browse** to search for it. When you have selected a SID file, details of its contents appear in the window in the dialog.

When you have entered the location of the correct SID file in the text box, click **Next** to continue.
8. The **Specify SAS Software Depot Directory** dialog opens. Enter where you would like the personal software depot to be created in the **SAS Software Depot** Directory text box. You can click **Browse** to search for a location. When you have entered the location for your personal software depot in the text box, click **Next** to continue.

***Note:** You cannot create a SAS Software Depot of this type in a target directory that contains any files or sub-directories. Since the object of this new depot is to allow end users to install from it, you should ensure that those end users have access to the new depot location.*
9. The **Final Review** dialog opens, summarizing the information you have entered in the preceding steps. The information also includes the required disk space to create the personal software depot. If the information is correct and you have enough space for the depot, click **Start** to begin the copy process. If you need to change any of your previous entries, click **Back** to go to the previous screens and make changes.
10. The **Adding SAS Software Order** dialog opens and a new **SAS Administrator Wizard** screen opens. Click **Next** in the **SAS Administrator Wizard** dialog to continue.
11. The **SAS Administrator Wizard Select Components** dialog opens with a list of all the SAS Foundation software in the depot you are working from. Ensure that there is a mark in the check box beside each product you want to copy. Check the SAS 9.2 box to select everything in the list. Uncheck the SAS 9.2 box to deselect everything in the list. If you want to copy everything from the SID file that you selected, click **Select Licensed Software**. When the software you want to copy has been marked, click **Next**.
12. The **SAS Administrator Wizard Start Copying Files** dialog opens. If you feel you may have made an error in your entries, click **Back** to change them. If you are ready to copy the files, click **Next** to continue.
13. A status window opens with a progress bar to indicate how much work remains to be done. When the process is finished, the **SAS Administrator Wizard Complete** dialog opens. Click **Next** to continue.
14. The SAS Administrator Wizard dialog closes and progress begins in the **Adding SAS Software Order** dialog. When it is complete, click **Next** to continue.
15. The **SAS Software Order Added** dialog opens, with a description of the tasks the SAS Deployment Wizard has just completed. Click **Finish** to close the SAS Deployment Wizard.

Chapter 4 — 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 after using the system requirements wizard.

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 this 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.

Example

```
setup.exe -record -responsefile "C:\Program Files\SAS\
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 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.

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:\Program Files\SAS\
sdwresponse.properties"
```

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. That is important when using this with any provisioning software such as Microsoft's SMS or IBM's Tivoli. The following is an example using the `-wait` option:

```
setup -wait -quiet -responsefile "C:\Program Files\SAS
\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 the Task Manager on Windows and periodically issue the `ps` command on UNIX and z/OS to track whether the SAS Deployment Wizard is running.

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

For example:

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

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

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

On UNIX and z/OS, as with most processes, you 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\SAS\  
sdwresponse.properties"
```

Restarting (Windows only)

Windows users who are installing will have the system requirements wizard check to ensure that certain minimum requirements have been met. If the system requirements wizard finds that they have not been met, it will close the SAS Deployment Wizard, install those minimum requirements, and perhaps reboot your machine. If you're performing a silent 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, please refer to Microsoft's documentation about security and automatic logons. You should weigh the risks of convenience for 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

```
-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

```
-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

```
-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
```

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.

Usage

`-changesashome`

Example

```
setup.exe -changesashome
```

Provisioning (Windows only)

If you are using a provisioning environment such as Microsoft SMS, Microsoft SCCM 2007, or IBM Tivoli, SAS recommends that you use the `-provision` command line option with the SAS Deployment Wizard. This command line option allows the SAS Deployment Wizard to behave in a manner consistent with a provisioning environment.

Usage

`-provision`

Example

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

For more information about how provisioning works with SAS 9.2, please refer to the white paper "Provisioning Systems and Other Ways to Share the Wealth of SAS Across a Network," available at <http://support.sas.com> (select "Papers", under "Knowledge Base" in the left-hand navigation bar, then select "Installation and Enterprise Administration").

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 9.2 to Use an Alternative Java Runtime Environment or Java Development Kit” Web page at

<http://support.sas.com/resources/thirdpartysupport/v92/AlternateJRE.html> for a description of those steps.

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 5 — Basic Troubleshooting

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.

All Windows Operating Systems

```
%USERPROFILE%\Local Settings\Application Data\SAS\  
SASDeploymentWizard\9.2\SDW.log
```

UNIX

```
$HOME/.SASAppData/SASDeploymentWizard/9.2/SDW.log
```

OpenVMS on HP Integrity

```
SYS$SYSROOT:[SYSUPD.SASAppData.SASDeploymentWizard.9^.2]SDW.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`.

Troubleshooting Tips

This section contains some simple troubleshooting techniques for installing and configuring your SAS software. The tips here are by no means exhaustive, and more detailed troubleshooting information is available in the *SAS 9.2 Intelligence Platform: Installation and Configuration Guide*, available at <http://support.sas.com/92administration>. If neither of these resources resolves your issues, please contact SAS Technical Support.

Troubleshooting Installing Your Software

Prompts Appear When Using Windows Vista

Q. If a deployment is run from a normal command prompt, a user account control box will pop up, saying the program needs permission to continue and prompting the user to continue or cancel. I thought The SAS Deployment Wizard installed the software silently.

A. This is not unique to SAS; Vista will not let any executable run that requests administrative privileges without prompting the user (which would include any install) whether it is silent or interactive. Once a program has been allowed privileges, any new program its process spawns will automatically be allowed the same privileges so multiple prompts will not be an issue.

To get around this, launch the SAS Deployment Wizard from an administrative command prompt. That way, the deployment would be a spawn of a process that already has administrative privileges. The typical way to do this would be to browse to **Start→Programs→Accessories→Command Prompt** and right-click to run as administrator.

Turkish Locale Issues

Q. My Windows machine has a Turkish regional setting and I am receiving installation errors.

A. A version of Java has a bug that affects Turkish locales, which in turn affects the SAS Deployment Wizard and SAS installations. To resolve this issue, set your system to an English regional setting while you perform your installations and then return to the Turkish regional setting as you configure. If you continue to have issues, please refer to SAS Note SN-33113, available from the SAS Customer Support Web site, <http://support.sas.com>.

Troubleshooting Configuring Your Software

Missing Default Values

Q. When I perform a SAS Deployment Wizard configuration, some dialogs do not have any default values. Why?

A. The reason fields have blank defaults is that the plan file you are using contains products not found in the order, and so the SAS Deployment Wizard does not have the default properties files to read. You need to choose a plan file and an order that match, or configuration is going to fail.

Troubleshooting Uninstalling Your Software

Installed Component Not Found in “VPD”

Q. When I uninstall my SAS software, my log file has a message that an installed component was not found in the “VPD” and subsequent attempts to reinstall default into Update mode.

A. When you are uninstalling software using a Windows Terminal Server, the `log.txt` file may contain an entry like the following:

```
Jan 4, 2009 4:16:39 PM), Uninstall.product.uninstall,
com.installshield.wizard.platform.win32.Win32ProductServiceImpl, wrn,
Installed Component with UID = 60cb1b9a85211d7a5c968f4d6f9493f8 was not
found in the VPD.
```

Subsequent attempts to reinstall default into update mode.

This entry is created when the uninstall is performed in some mode other than install mode. Before installing or uninstalling software on Terminal Servers, always make sure that you have changed into install mode using the following command:

```
C:\> change user /install
```

Scrollbar Page Increment is Less than 1

Q. When I uninstall my software on UNIX, I get receive a message that “The scrollbar page increment is less than 1.

A. This message has no bearing on the uninstall and can be ignored.

Chapter 6 — Additional Tools

There are several additional tools that serve specific functions with your SAS software. The SAS Uninstall Wizard uninstalls SAS products from a Windows environment, allowing you to bypass installing individual products via the Windows control panel. The SAS VJR Uninstall Wizard should be used after uninstalling SAS software to clean up any files not handled by the normal uninstall process. The SAS File Type Management Tool is a Windows-only utility that allows you to set the default file application for file types usually associated with SAS.

SAS Uninstall Wizard (Windows only)

The SAS Uninstall Wizard is a tool that removes all SAS 9.2 products from Windows operating environments. The tool provides an option from having to manually remove each product by using the Add or Remove Programs tool under Windows.

The SAS Uninstall Wizard displays a list of all currently installed SAS 9.2 products on your computer. The wizard then prompts you to confirm that you want to remove all the products in the list. You can only selectively choose which SAS products to be removed by using the Advanced Options. The SAS Uninstall Wizard does not remove Windows services. A planned deployment must be unconfigured before you remove SAS 9.2 products. If you have a planned SAS deployment, see “Managing Your SAS Deployment” (located at <http://support.sas.com/documentation/cdl/en/biig/60946/PDF/default/biig.pdf#page=129>), in the *SAS 9.2 Intelligence Platform: Installation and Configuration Guide*.

Running the SAS Uninstall Wizard

You must be logged in as an administrator.

1. From a command line, enter the following:

```
suw.exe -sashome "<SASHOME location>"
```
2. A list of SAS products that are installed on your computer displays. The wizard will remove all the products in this list. If you want to remove all the SAS products in this list, click **Yes**.
Note: If you want to select specific products to remove, see *Advanced Options* below.
3. A progress indicator dialog box opens. When the SAS Uninstall Wizard is finished, a confirmation message appears. Click **OK**.
4. The command prompt returns to the SAS Uninstall Wizard directory. All SAS 9.2 software has been removed from this computer.

Verifying SAS Products Removed

To verify that the SAS products were removed, perform one of the following steps:

- Open the Add or Remove Programs tool under Windows to see whether any SAS 9.2 products are listed.
- View the SAS Uninstall Wizard log, `SUW_datetime.log`, located in `C:\SUW`.
- Run the SAS Uninstall Wizard again. The wizard displays a list of SAS 9.2 products on your computer. The list should not contain any SAS 9.2 products if you removed all of them.

SAS Uninstall Wizard Command Line Options

The following options are available to use with the SAS Uninstall Wizard:

- `-sashome`
This option specifies the root directory for SASHOME. If you do not specify the `-sashome` option, the directory is created at `C:\Program Files\SAS` by default. If your SASHOME directory is different from `C:\Program Files\SAS`, then you must use `-sashome` to specify the location of the SASHOME directory.
- `-log`
This option can be used to specify the explicit name and location for the log file of the SAS Uninstall Wizard. By default, the SAS Uninstall Wizard log is saved in the home directory of the SAS Uninstall Wizard (for example, `C:\SUW`).
- `-v`
This option enables verbose logging. Verbose logging can assist you in troubleshooting issues that you might encounter when you use the SAS Uninstall Wizard.
- `-noexecute`
This option allows the SAS Uninstall Wizard to run but not remove any products. In addition, the option creates `productsdate-time.txt`, which lists the SAS products that are installed on your computer.

Using Advanced Options

The SAS Uninstall Wizard includes a few advanced options that can be used to quietly and selectively remove SAS software on a local or remote workstation. SAS supports the functionality of the SAS Uninstall Wizard, but does not support third-party tools used to deploy uninstall packages.

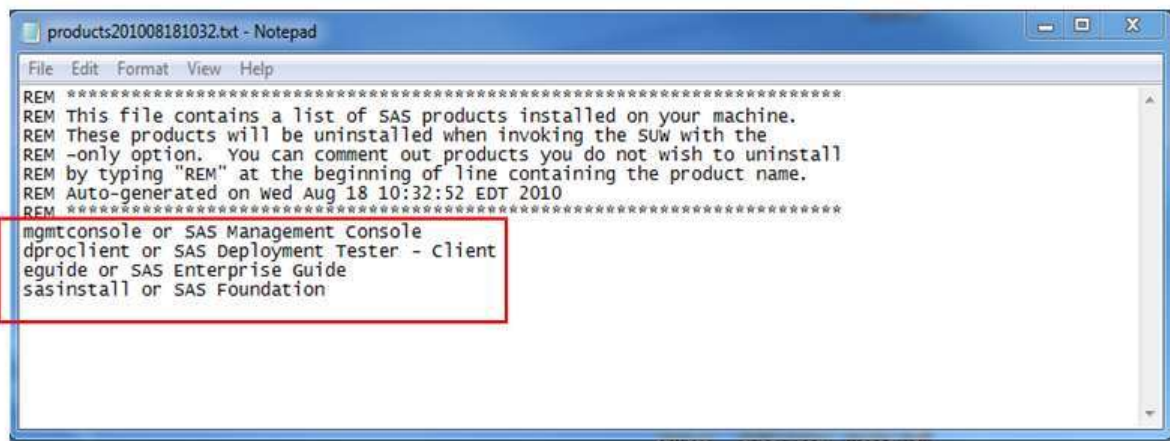
- `-quiet`
This option prevents any user interaction when you run the SAS Uninstall Wizard. The `-quiet` option can be used to remove all SAS products on your computer without having to manually respond to any dialog box prompts. The option can also be used with the `-only productsdate-time.txt` option described below to quietly remove the products that you select.
- `-removeSASHOME`
This option removes your SASHOME directory. Before you use this option, make sure that you want to delete your SASHOME directory. You do not want to use this option if:
 - You are using a modified `productsdate-time.txt` file to select the SAS products that you want to remove.
 - You have a SAS 9.1.3 installation that uses the same SASHOME directory that the SAS 9.2 installation uses.
 - You have another SAS 9.2 installation that uses the same SASHOME directory.

- `-only filename.txt`

This option enables you to select which SAS products you want to remove. When you run the SAS Uninstall Wizard, the `productsdate-time.txt` file is created in the SAS Uninstall Wizard home directory. This file contains a list of all the SAS products that are installed on your computer.

If you want to produce this file, run the SAS Uninstall Wizard with the `-noexecute` option without actually removing any SAS products. Use the `-only` option followed by the file's name to remove the SAS products listed in that file. You can edit this file to select which SAS products you want to remove. Any product names that remain in the file are removed.

For example, when you run the SAS Uninstall Wizard, your products file might contain the following product list:

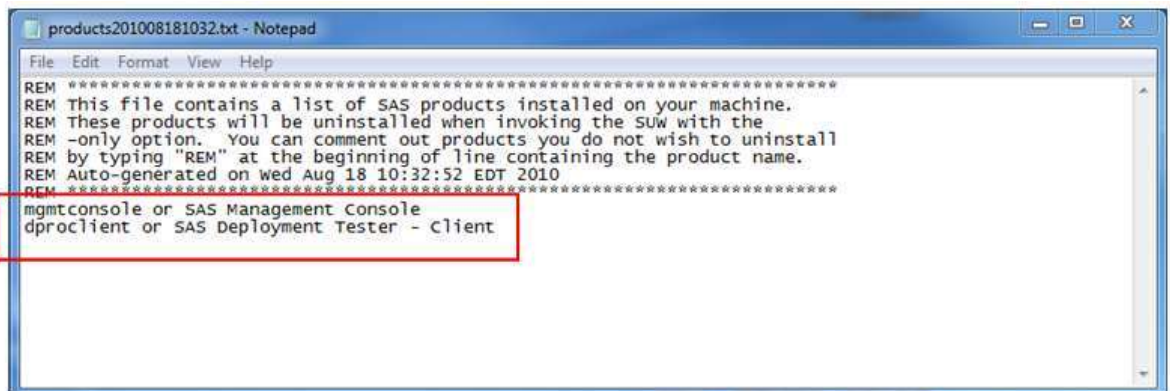


```

products201008181032.txt - Notepad
File Edit Format View Help
REM *****
REM This file contains a list of SAS products installed on your machine.
REM These products will be uninstalled when invoking the SUW with the
REM -only option. You can comment out products you do not wish to uninstall
REM by typing "REM" at the beginning of line containing the product name.
REM Auto-generated on wed Aug 18 10:32:52 EDT 2010
REM *****
REM mgmtconsole or SAS Management Console
REM dproclient or SAS Deployment Tester - Client
REM eguide or SAS Enterprise Guide
REM sasinstall or SAS Foundation

```

If you want to only remove SAS Management Console and SAS Deployment Tester - Client, then you have to manually remove the SAS Foundation and SAS Enterprise Guide entries from the file. The resulting file then appears as follows:



```

products201008181032.txt - Notepad
File Edit Format View Help
REM *****
REM This file contains a list of SAS products installed on your machine.
REM These products will be uninstalled when invoking the SUW with the
REM -only option. You can comment out products you do not wish to uninstall
REM by typing "REM" at the beginning of line containing the product name.
REM Auto-generated on wed Aug 18 10:32:52 EDT 2010
REM *****
REM mgmtconsole or SAS Management Console
REM dproclient or SAS Deployment Tester - Client

```

Save the file. When you invoke the SAS Uninstall Wizard, use the `-only` option with your `productsdate-time.txt` file to only remove the products that are listed in the file.

Note: You can change the location and filename of the `productsdate-time.txt` file. However, when you invoke the SAS Uninstall Wizard, make sure that you reference the new file path and filename.

Troubleshooting

When you invoke the SAS Uninstall Wizard, you might receive the following message:

```
<<>>No SASHOME Environment Variable found. Defaulting to (C:\Program
Files\SAS)

<<>>SASHOME Environment Variable(C:\Program Files\SAS) OVERRIDDEN by
-sashome option(C:\Program Files\SASS<)
```

This message appears because you used the `-sashome` option to specify your SASHOME directory, but the path that you supplied for the directory is incorrect. Check the path of your SASHOME directory and correct it, if necessary. Re-invoke the SAS Uninstall Wizard. If you do not specify the `-sashome` option, the SAS Uninstall Wizard uses the following default location: C:\Program Files\SAS.

Analyzing SAS Files to Assist with Troubleshooting

The following SAS files can help you troubleshoot problems that you might encounter when you use the SAS Uninstall Wizard. If you contact SAS Technical Support about a problem with the SAS Uninstall Wizard, SAS Technical Support might request these files.

- `SUWdate-time.log` (utilities/uninstallwizard/)
- `Productsdate-time.txt` (if applicable, utilities/uninstallwizard/)
- batch files for individual products (utilities/uninstallwizard/)
- response files for individual products (C:\)
- `version.dat` (utilities/uninstallwizard/)

Products Not Removed by the SAS Uninstall Wizard

The SAS Uninstall Wizard does not remove the following products:

- SAS/IML Studio
- SAS Add-In for Microsoft Office on Windows x64
- SAS Stat Studio on Windows x64
- SAS/GRAPH NV Workshop on Windows x64
- SAS Drivers for ODBC on Windows x64

A fix for this issue is planned for a future software release.

Note: *The SAS Uninstall Wizard does not remove any DataFlux products. Removing DataFlux products is beyond the scope of the SAS Uninstall Wizard.*

SAS VJR Uninstall Wizard

The SAS VJR Uninstall Wizard cleans up files left in your versioned JAR repository after you have uninstalled your SAS software. The files in this repository can add up to several hundred megabytes, so this tool may be invaluable for creating space on your system. The VJR Uninstall Wizard is only available for Windows and UNIX users.

Use the following procedures to use the SAS VJR Uninstall Wizard.

1. Invoke the SAS VJR Uninstall Wizard.

Windows

Open the Control Panel for your machine (for example, **Start**→**Settings**→**Control Panel** for Windows XP) and select **Add or Remove Programs**. When the list opens, select SAS Versioned Jar Repository 9.2 and click **Change/Remove**.

UNIX

Use the \$ `<SASHOME>/uninst/uninst.sh` command to invoke the SAS VJR Uninstall Wizard.

2. The **VJR Removal** dialog opens. Click **Uninstall**.
3. If the versioned jar repository is still being used by an application, you will receive an alert message listing any other application still using the repository. Click **OK** to close the alert message.

If no other applications are using the repository, the graphic on the right side of the dialog will move until the uninstall is complete. When the SAS VJR Uninstall Wizard is finished, the **VJR Removal** dialog goes away.

SAS Update File Cleanup Utility

As the SAS Deployment Wizard performs updates to an existing deployment, it creates backup files 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\MIT`. Windows users should double-click `cleanup.bat` 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.

View Registry

For SAS 9.2 (TS2M0) and later, the installation of hot fixes is logged in the SAS Deployment Registry. A reporting utility named View Registry (`sas.tools.viewregistry.jar`) can process the deployment registry and generate a report named `DeploymentRegistry.html`. The deployment registry report identifies all SAS 9.2 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: 9.21
Display Name: Base SAS
Display Version: 9.21_M1
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: 9.21
Display Name: SAS/STAT
Display Version: 9.21_M1

```

A text file version of the report, `DeploymentRegistry.txt` is also created. Both the HTML and .txt files are created in the `SASHOME/deploymntreg` directory. The utility is installed by default with SAS 9.2 TS2M0 or later in `SASHOME/deploymntreg`. If you are running a SAS 9.2 release prior to TS2M0, you can download `sas.tools.viewregistry.jar` from <http://ftp.sas.com/techsup/download/hotfix/HF2/util01/regreport/sas.tools.viewregistry.jar>. The file must be saved to the `SASHOME/deploymntreg` directory, and it must be saved with a .jar extension. In addition, you must be running Java 5 or later.

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/deploymntreg` directory.

Windows:

Launch `sas.tools.viewregistry.jar`.

UNIX:

Execute the JAR file. For example:

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

Note: In order to run the reporting utility on UNIX systems, you must have Write permission to the `SASHOME` location because the resulting reports are written to this location.

VMI:

Execute the JAR file. For example:

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

Note: In order to run the reporting utility on VMI, you must first set the following logicals and process attribute:

```

$ set process/parse=extended
$ DEFINE DECC$ARGV_PARSE_STYLE ENABLE
$ DEFINE DECC$EFS_CHARSET ENABLE
$ DEFINE DECC$EFS_CASE_PRESERVE ENABLE
$ define JAVA$FILE_OPEN_MODE 3
$ define java$filename_controls 0

```

Appendix A — Windows Administration

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

To properly install SAS 9.2 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 9.2 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 Windows NT command prompt (`cmd.exe`). A message will inform you if the install mode is set correctly.
3. Installation of SAS 9.2 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, please 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 9.2 in a Terminal Server Environment or Citrix

Installing SAS 9.2 on a server with Terminal Services is the same as installing SAS 9.2 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 cdfs -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.*



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