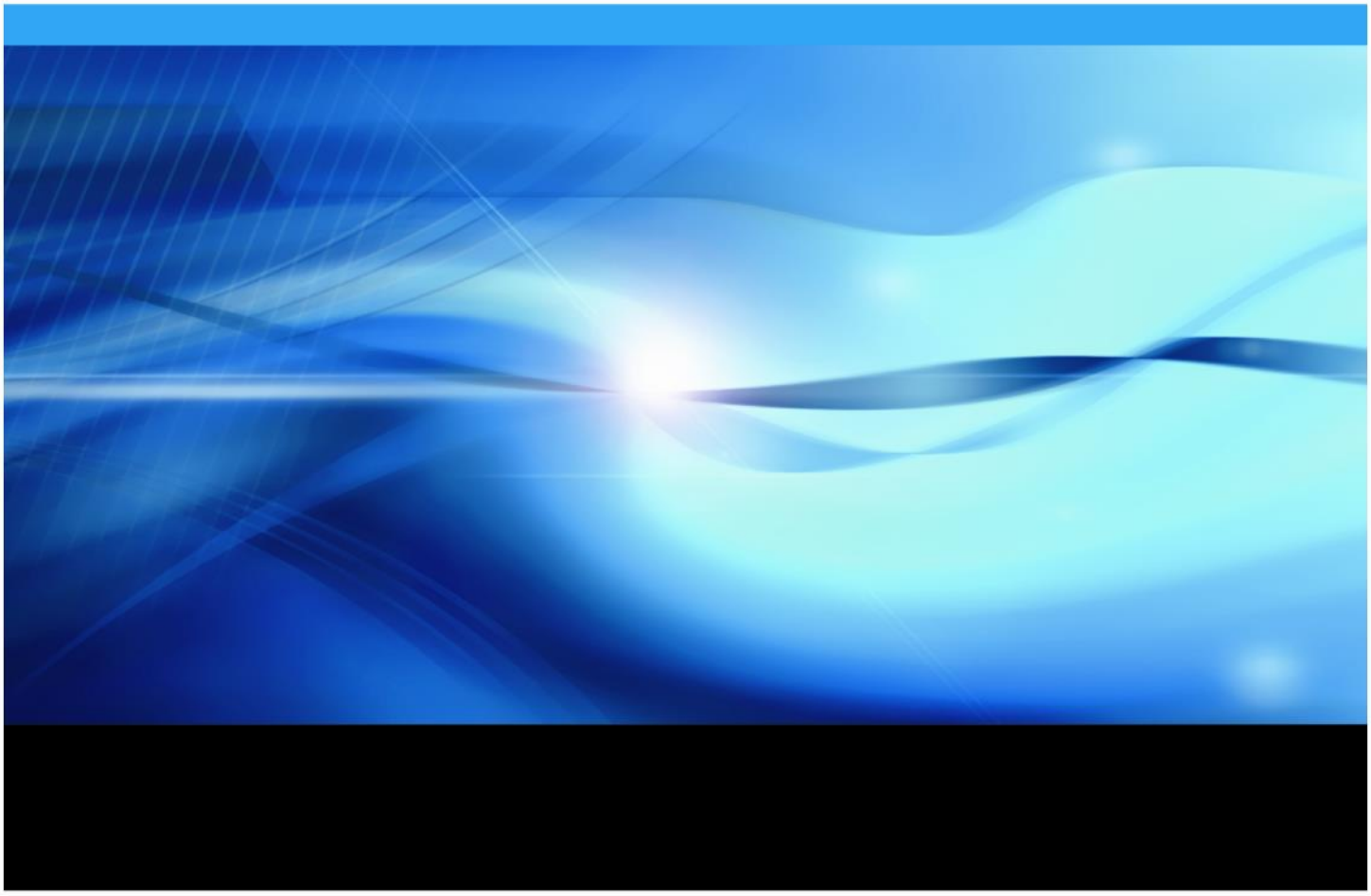
Installation Instructions for SAS® 9.4 Installation Kit for Planned Cartridge Installations on z/OS



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Installation Instructions for SAS® 9.4 Installation Kit for Planned Cartridge Installations on z/OS

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Before You Begin—Prerequisites

This document provides all of the information related to unloading and installing a SAS 9.4 order from cartridges on z/OS systems for which you have purchased licenses. Please review this document in its entirety.

You **MUST** complete each of the **required** items below (the last few items may be optional) **before** beginning your SAS installation. The following topics are discussed in this section:

- □ Verify System Requirements (pg. 1)
- □ Review Installation Alert Notes (pg. 1)
- □ Have Your SAS Software Order E-mail (SOE) Available (pg. 1)
- □ Use Your Current SAS Installation Data Files (SID files) (pg. 2)
- □ Review and Understand Terminology (pg. 2)
- □ Define Sufficient UNIX File System Space (pg. 3)
- □ Ensure that the User ID for the Installation Meets Requirements (pg. 3)
- □ Select or Obtain Your Deployment Plan (pg. 4)
- □ Review Pre-installation Checklists (pg. 4)
- □ Install Any Required Third-Party Software (pg. 4)
- □ Ensure X11 Server Availability if Required (pg. 5) **(optional for some orders)**
- □ Install and Configure your Metadata Server on another Host (Optional) (pg. 5)
- □ Review SAS/IntrNet Installation Options (Optional Step) (pg. 5)
- □ Select Which SAS/GRAPH Map Data Sets to Install (Optional Step) (pg. 5)

Prerequisites

Verify System Requirements

Confirm that your system meets the minimum requirements by referring to the system requirements from the SAS 9.4 Install Center Documentation web site (http://support.sas.com/documentation/installcenter/94/index.html) and selecting **Documentation for SAS 9.4 Installation on z/OS.**

Review Installation Alert Notes

On the http://support.sas.com/notes/index.html web page, click **Search Installation Notes.** Select the **Results Filter** tab, and then select **alert** as the Priority, **9.4** as the SAS Release and **z/OS** as the Operating System. Then press **Enter**.

Review the Installation Alert Notes that are listed to see if they apply to this installation order.

Have Your SAS Software Order E-mail (SOE) Available

To install SAS 9.4 on z/OS, start with the Software Order E-mail (SOE) you received from SAS Institute. This e-mail contains details such as the order number, a key, and the type of installation you have: Basic or Planned. Basic orders are generally straightforward single-machine deployments. Planned orders are more complex, multi-machine deployments. This document is for a **planned** order.

Use Your Current SAS Installation Data Files (SID files)

The SAS Software Depot includes one or more SAS installation data (SID) file or files as part of your software download. A SID file is valid for a limited time and consists of customized installation information and product authorization information. The SAS Deployment Wizard uses the installation information in a SID file to install your licensed software and apply customized product authorization information to your system. SID files follow a naming convention in which a file called `sas94_xxxxxx_yyyyyyyy_zzz.txt would mean xxxxxx` is your order number, `yyyyyyyy` is your setnumid (a unique identifier used by SAS Technical Support), and `zzz` is the operating system for which the order is licensed.

If you are going to run your metadata server on z/OS, you will be installing a set of 64-bit libraries in addition to the standard 31-bit libraries, which will have a separate SAS site number and a separate SID file. The SID file for the 64-bit metadata installation will show "SAS Metadata Server" in the SID file itself.

The SID files for your software order will be located in the `sid_files` directory at the root of your SAS Software Depot.

If your order is more than 90 days old, one or more of the SID files shipped with the order may have expired. Check your SOE for the expiration date of the SID files in your order. If they have expired, contact your SAS site representative who may have received a Renewal Software Order E-mail that will contain more recent SID files. Once you have created your SAS Software Depot, put the updated SID files in the `sid_files` directory in your SAS Software Depot. If the site representative does not have updated SID files, please have the site representative contact SAS Customer Service at 1-800-727-0025 (press option 3).

Review and Understand Terminology

- SASHOME Location

  SASHOME is the UNIX directory location where the UNIX file system components of your SAS software are installed on your machine. SASHOME is specified when you install software through the SAS Deployment Wizard for the first time, and that location becomes the default installation location for any other SAS software you install on the same machine. You will need about 3 GB of UNIX file system space for your SASHOME directory.

  Many sites prefer to have SASHOME in a separate UNIX file system than their SAS Software Depot. This allows you to easily archive the SAS Software Depot and reuse that disk space. The directory path for your SASHOME location cannot be a directory within your SAS software depot.

  Note: *The length of the SASHOME path is limited to 54 characters.*

  Note: *The SASHOME directory is an integral part of the SAS 9.4 installation and **MUST** be kept mounted on your z/OS system as part of the finished SAS installation for some functionality within SAS to work correctly.*

- SAS Deployment Wizard

  The SAS Deployment Wizard is the common interface used to install and deploy all SAS 9.4 software. Using the SAS Deployment Wizard, you interact with the SAS Software Depot, the repository of files and data necessary to install your SAS 9.4 software. You will invoke the SAS Deployment Wizard on each system that is part of your SAS software deployment.

- SAS Software Depot

  The SAS Software Depot is a collection of SAS installation files that represents one or more orders. The SAS Software Depot is organized in a specific format that is meaningful to the SAS Deployment Wizard, which is the tool that is used to install and initially configure SAS. The SAS Software Depot contains the SAS Deployment Wizard executable, one or more deployment plans, a SID file, order data, and product data. ***Please see your Software Order E-Mail for the space required for the SAS Software Depot for your order***.

Define Sufficient UNIX File System Space

Your SAS installation requires the following space defined in UNIX file system directories:

- SAS Software Depot
  The SAS Software Depot is a collection of SAS installation files that represents one or more orders. The SAS Software Depot is organized in a specific format that is meaningful to the SAS Deployment Wizard, which is the tool that is used to install and initially configure SAS. The SAS Software Depot contains the SAS Deployment Wizard executable, one or more deployment plans, a SID file, order data, and product data. ***Please see your Software Order E-Mail for the space required for the SAS Software Depot for your order***.
  This directory must be available to z/OS. It can be:
  - A UNIX File System directory on the z/OS machine.
  - A UNIX File System or Windows remote directory that is accessible to the z/OS machine via an NFS mount.

You do not need the SAS Software Depot after you have completed installing and configuring your SAS software.

- SASHOME directory
  The SASHOME directory is an integral part of the SAS 9.4 installation. You may want to have your SAS Software Depot and SASHOME directory in separate UNIX file system spaces so that you can easily recover the space from your SAS Software Depot after installation. For a SAS foundation only installation, 3 GB should be allowed for the SASHome directory.
- SAS configuration directory
  This directory is where your SAS server scripts, configuration files, and metadata server repositories will reside. The amount of space required varies widely depending on your usage, but you should have at least 2 GB of space for this directory, 3 GB if you are migrating metadata from an earlier SAS release. The configuration directory cannot be a subdirectory of the SASHOME directory. The SASHOME directory and the SAS configuration directory can be in the same UNIX file system space.

Ensure that the User ID for the Installation Meets Requirements

The user ID used for downloading your software or for installing SAS 9.4 must meet specific requirements:

- Must have a home directory that is not root.
- Must have a default program shell defined.
- Must not be a superuser.
- Must not share a UID with other user IDs.

The user ID that will be running SAS Deployment Wizard to install SAS 9.4 Foundation for z/OS requires a larger region setting:

- If running under OMVS, a TSO region size and ASSIZEMAX setting of at least 1 GB.
- If running UNIX-style commands using rlogin, putty, or telnet, an ASSIZEMAX setting of at least 1 GB.

Select or Obtain Your Deployment Plan

To install and configure SAS servers that are part of a planned order, you must have a deployment plan. The deployment plan is an XML-based description of the topology for your SAS system. The plan file is used in the SAS software deployment process to "instruct" the SAS Deployment Wizard which software components to install and configure on each machine.

The SAS Deployment Wizard contains a set of standard deployment plans that may be used by many sites with no customization. These are documented at `http://support.sas.com/demosdownloads/setupcat.jsp?cat=Standard+Deployment+Plans`. If you are working with a SAS consultant in the deployment of your software, that consultant may create a customized deployment plan for your installation.

Review Pre-installation Checklists

A pre-installation checklist is a companion to this installation document and must be printed and completed before you continue with this installation. This installation guide leads you step by step through the installation of the SAS Intelligence Platform and, in the course of doing so, has you reference your pre-installation checklist information.
If you are using one of the standard deployment plans, browse through our library of standard deployment plans available at `http://support.sas.com/demosdownloads/setupcat.jsp?cat=Standard+Deployment+Plans` and select the plan for your installation. Each standard deployment plan includes a checklist which you should follow. For example, you can record information such as the user IDs for special SAS users, port numbers, and the installation locations of third-party products used for this installation. If you received a customized plan, that plan will include a customized pre-installation checklist.

Install Any Required Third-Party Software

The checklist indicates any third-party software that must be installed before you install your SAS software, as well as which third-party software must be obtained from its vendor. An example is the X11 Server, described in the next section. Obtain that software and install it according to the vendor's instructions.

Some of your third-party software may be provided in your software order. That software is listed in your `ordersummary.html` which is available in your SAS Software Depot. Follow the path for each third-party product listed in the Third Party section of the `ordersummary.html` to locate the documentation for its installation.

You must have a supported level of Java installed for a planned installation with SAS 9.4. You can check SAS's third party support web page for information about the latest supported versions of Java at `http://support.sas.com/resources/thirdpartysupport/`.

Ensure X11 Server Availability if Required

The SAS Deployment Wizard has a graphical user interface which requires the use of an X11 server, if available. At many sites, this software is already available and running on a UNIX and/or Windows system. X11 software is available from commercial and shareware sites.

If you do not have access to an X11 server, you may be able to use the SAS Deployment Wizard in console mode, allowing you to use a headless system to configure your server. If you use console mode, each dialog used in the deployment of your SAS software is represented in text. Console mode is available in orders with a version number of Rev. 930_12w***nn***, where *nn* is 10 or higher. Refer to your Software Order E-mail to determine your version number. Console mode cannot be used on your middle tier.

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

For more information about X11 server minimum version requirements, see the web page entitled "SAS 9.4 Support for Additional Software Products" at `http://support.sas.com/resources/thirdpartysupport/v94/othersw.html#tab_x11`.

Install and Configure your Metadata Server on another Host (Optional)

You **must** install and configure SAS first on the system where your metadata server will reside. If your metadata server will be on a system other than z/OS, install and configure the metadata server on that system **before** you attempt to install and configure your servers on z/OS.

Review SAS/IntrNet Installation Options (Optional Step)

If your order includes SAS/IntrNet, review the section on SAS/IntrNet in the *Configuration Guide for SAS 9.4 Foundation for z/OS* so that you are prepared to enter the appropriate values for your web server directory paths and URL values.

Select Which SAS/GRAPH Map Data Sets to Install (Optional Step)

Starting in the third maintenance release of SAS 9.4, if your site is licensed for SAS/GRAPH, you have the option to select which SAS/GRAPH Map products to install. SAS has split out the Map data sets that were included in SAS/GRAPH in order to help users save space by choosing which Map data sets they want to install. These options allow you to select which of the SAS/GRAPH Maps products you wish to install. For information about Maps data set space, refer to the *System Requirements for SAS 9.4 Foundation for z/OS* at the SAS 9.4 Install Center Documentation web site: (`http://support.sas.com/documentation/installcenter/94/index.html`) and select **Documentation for SAS 9.4 Installation on z/OS.**

Installation Process

Overview

The installation process consists of the following steps:

Step 1. Creating the SAS Software Depot

Step 2. Installing and Maintaining Your Software

Step 3. Validate Installation and Post-Configuration

Step 4. Managing Server Sessions

Step 5. Installing SAS 9.4 Mid-tier and Client Software from the SAS Software Depot

Follow these steps in order to install your SAS software.

Step 1. Creating the SAS Software Depot

Unloading Your SAS 9.4 Software Depot from Cartridges

Installing SAS 9.4 Foundation from a cartridge requires unloading the contents of the cartridge to the UNIX File System. To do so, you will need to run a batch job. JCL is provided, as an attachment to your Software Order E-mail (customized for your particular order), which you will need to modify for your specific needs. You should have allocated the necessary space as specified in "Define Sufficient UNIX File System Space" on page 3.

Unloading the Software from the Cartridges

The JCL attachment to your SAS Software Order E-mail contains the PAXUNLD job. You **must** modify several JCL statements in the PAXUNLD job to conform to your local installation requirements. Editing can be performed on a Windows system. However, if you choose to edit these JCL statements on your MVS system, make certain you **set CAPS OFF in the SPF editor** as UNIX directory paths are case-sensitive.

1. Modify the PAXUNLD JOB card as necessary for your site.
2. CARTUNIT needs to match the cartridge unit name your site uses.
3. TEMPPATH must be set to a temporary location for script creation and execution.
4. DESTPATH contains the directory name of the location where the contents of the cartridge(s) will be unloaded to (this will become your SAS Software Depot). SAS **strongly** recommends that you do **NOT** use `/tmp` as the destination for your SAS Software Depot as filling `/tmp` can adversely impact your entire system.

Your edited PAXUNLD job must be moved to DASD on MVS in order to submit it.

When the PAXUNLD job has been run, all return codes should be 0 (zero).

Note: *If the job fails you will need to erase (*`'rm -rf'`*) the content of the destination directory in order to rerun the job. This is necessary because some of the files that are written to the destination have read-only permission bits, so an attempt to overwrite these files will generate an error.*

Step 2. Installing and Maintaining Your Software

The remainder of this document describes the installation and maintenance (where applicable) process in detail. At this point you should have reviewed and completed all of the pre-requisites for this installation previously documented along with the pre-installation steps in the *SAS 9.4 Intelligence Platform: Installation and Configuration Guide*.

The *SAS 9.4 Intelligence Platform: Installation and Configuration Guide* is available at

`http://support.sas.com/documentation/cdl/en/biig/63852/PDF/default/biig.pdf`.

You **must** have an X11 server available on a Windows PC or UNIX machine at your site, and you **must** use the SAS Deployment Wizard to install your software.

Installation Action—Action A or Action B

The installation process will prompt you for an installation action to choose. Determine which one of these installation actions below apply to this installation.

- **Action A** is for a new installation—if you do not currently have SAS 9.4 installed on your system at all or you want to create a new SAS 9.4 installation.
- **Action B** installs maintenance or new products directly into your existing production SAS 9.4 libraries and directories. If you are both applying maintenance and installing new products, you **must** invoke the SAS Deployment Wizard **twice**.

Planning Metadata Migration from SAS 9.1.3, SAS 9.2, or SAS 9.3

If you are migrating metadata from SAS 9.1.3, SAS 9.2, or SAS 9.3, you must prepare your software for migration. To prepare your SAS 9.1.3, SAS 9.2, or SAS 9.3 deployment for migration to SAS 9.4, follow the instructions in the *SAS 9.4 Intelligence Platform: Migration Guide* at http://support.sas.com/documentation/cdl/en/bimig/63853/PDF/default/bimig.pdf.

Important Notes

- Do **not** log in to z/OS as a superuser (sometimes called "root" or "UID(0)").
- The user ID that will be running the SAS Deployment Wizard to install SAS 9.4 Foundation for z/OS must have the same requirements as noted in "Ensure that the User ID for the Installation Meets Requirements" on page 3.
- If you are applying maintenance or adding software to an existing installation, you must stop all SAS servers and processes before updating your installation.
- If you select **Action B**, you **must** use the same high-level qualifier that you specified with the original installation.

Installation Steps

1. By default, the SAS Deployment Wizard will run using a text-based interface and will create the installation batch jobs for you but will not execute them. Before you start the SAS Deployment Wizard, you must decide whether you will use a graphical user interface or a text-based interface, and whether the SAS Deployment Wizard will run the installation batch jobs for you.

    a. **Using the graphical interface:** If you want to use a graphical user interface in the SAS Deployment Wizard, you must use an X11 server. If you are configuring SAS IT Resource Management or SAS Data Integration Server, you must use an X11 server, otherwise an X11 server is optional. Note that the X11 server software would run on your Windows or UNIX machine to provide the windowing interface for the SAS Deployment Wizard while it is running on z/OS. See the Third-Party web page at http://support.sas.com/resources/thirdpartysupport/v94/othersw.html for additional information about X11 servers.

    If you will be using an X11 server, set the DISPLAY environment variable to point to your X11 server. Issue the following case-sensitive command from the z/OS UNIX shell on your z/OS system before starting the SAS Deployment Wizard:

    ```
    export DISPLAY=<your X11 server name>:0.0
    /<SAS Software Depot>/setup.rexx -x11
    ```

Note: *If you do not issue this command, setup.rexx will prompt you for the server name. Make sure that the X11 server is started on your workstation before starting the install.*

b. **Using the text-based interface:** If you choose not to use the x11 interface, the dialog screens that would have been displayed are represented in text.

When you run the SAS Deployment Wizard in the default text-based or 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=`).
For example :

```
unset DISPLAY
/<SAS Software Depot>/setup.rexx
```

Note: *During execution in text or "console" mode, if you are instructed to enter a sequence that includes angle brackets, such as "Enter <q> to quit," you must include those symbols.*

c. **Batch jobs submitted manually or by the SAS Deployment Wizard:** By default, the SAS Deployment Wizard will create the installation batch jobs for you but will not execute them. If you use the –jobsubmit option, the SAS Deployment Wizard will:

i. Assign the same job name xxxxxxA to each job it automatically submits, where: xxxxxxx is assigned the installer user ID "A" – suffix assigned to the installer user.

ii. Use the FTP JES interface to track the progress of each job, and in particular determine when they have completed.

If any of the following conditions are true, you will not be able to use the –jobsubmit option, and you must submit the installation batch jobs manually:

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

Examples:

To have the SAS Deployment Wizard submit and monitor the installation batch jobs:

```
/<SAS Software Depot>/setup.rexx [-x11] -jobsubmit
```

To submit the jobs manually after the SAS Deployment Wizard completes:

```
/<SAS Software Depot>/setup.rexx [-x11]
```

2. In SAS 9.4, the metadata server runs only in 64-bit mode and requires a separate installation. **If you plan to run your metadata server on z/OS, you must invoke the SAS Deployment Wizard multiple times, and this should be your <u>first</u> invocation of the SAS Deployment Wizard.**

Note: *You must run setup.rexx from OMVS, rlogin, or putty. You cannot execute it from ISHELL. To execute the setup.rexx command, navigate to your SAS Software Depot directory in OMVS.*

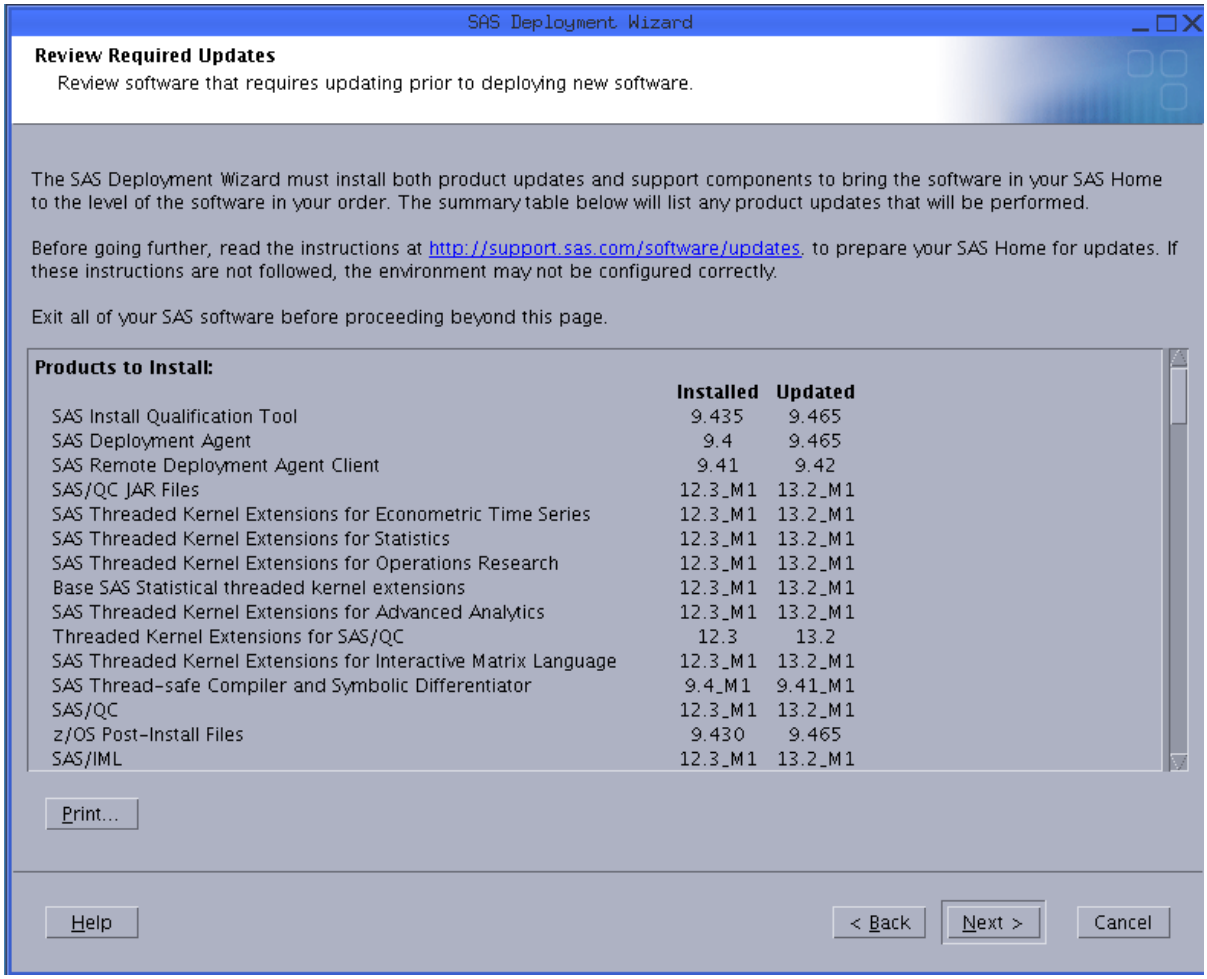
By default, the SAS Deployment Wizard will run using a text-based interface and will create the installation batch jobs for you but will not execute them.

Important: *If your metadata server will reside on another machine, the metadata server must be installed, configured, and already running on that other host. Skip to Step 3 to invoke the SAS Deployment Wizard for the 31-bit install.*

a. Invoke the SAS Deployment Wizard with the required option `-z64`.
```
/<SAS Software Depot>/setup.rexx -z64 [-jobsubmit] [-x11]
```

b. Select "**Install SAS Software**" on the first screen.

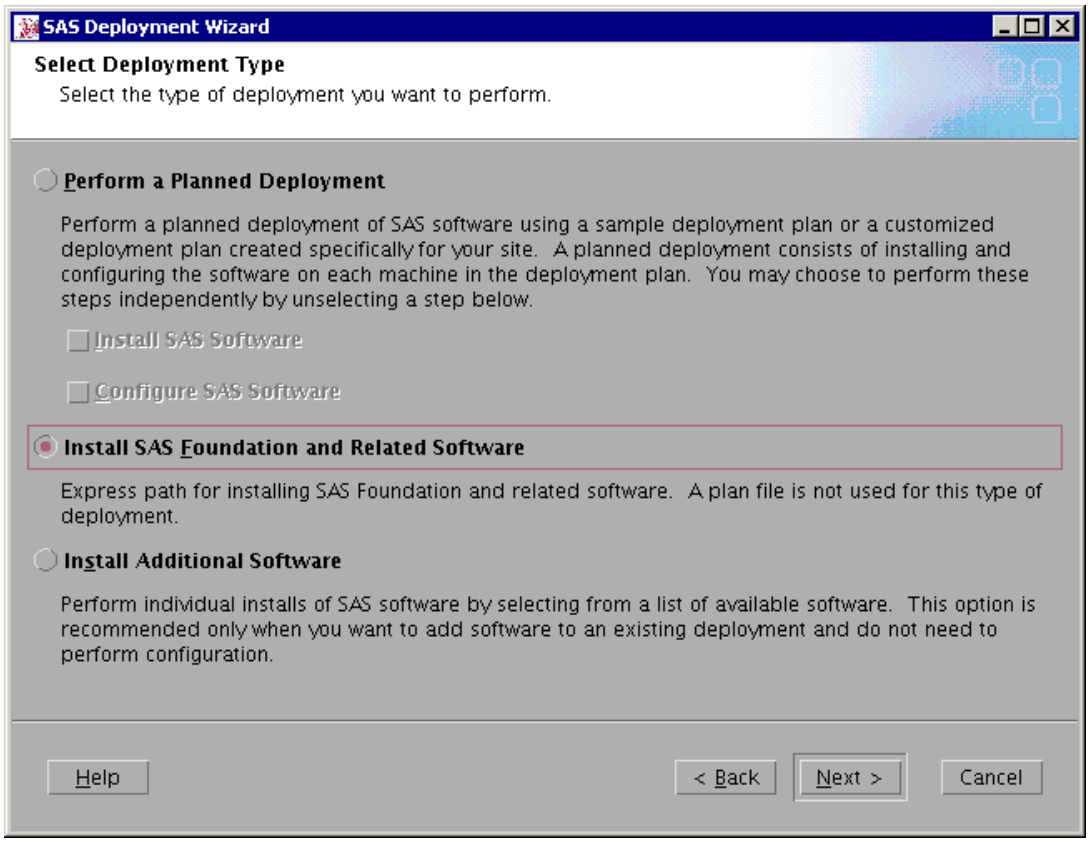
If you are applying maintenance to an existing installation, you will go into update mode and be prompted to **Review Required Updates** as shown on the following screen.



Continue through the remaining dialogs to apply maintenance. Then proceed to Step 2f on page 12.

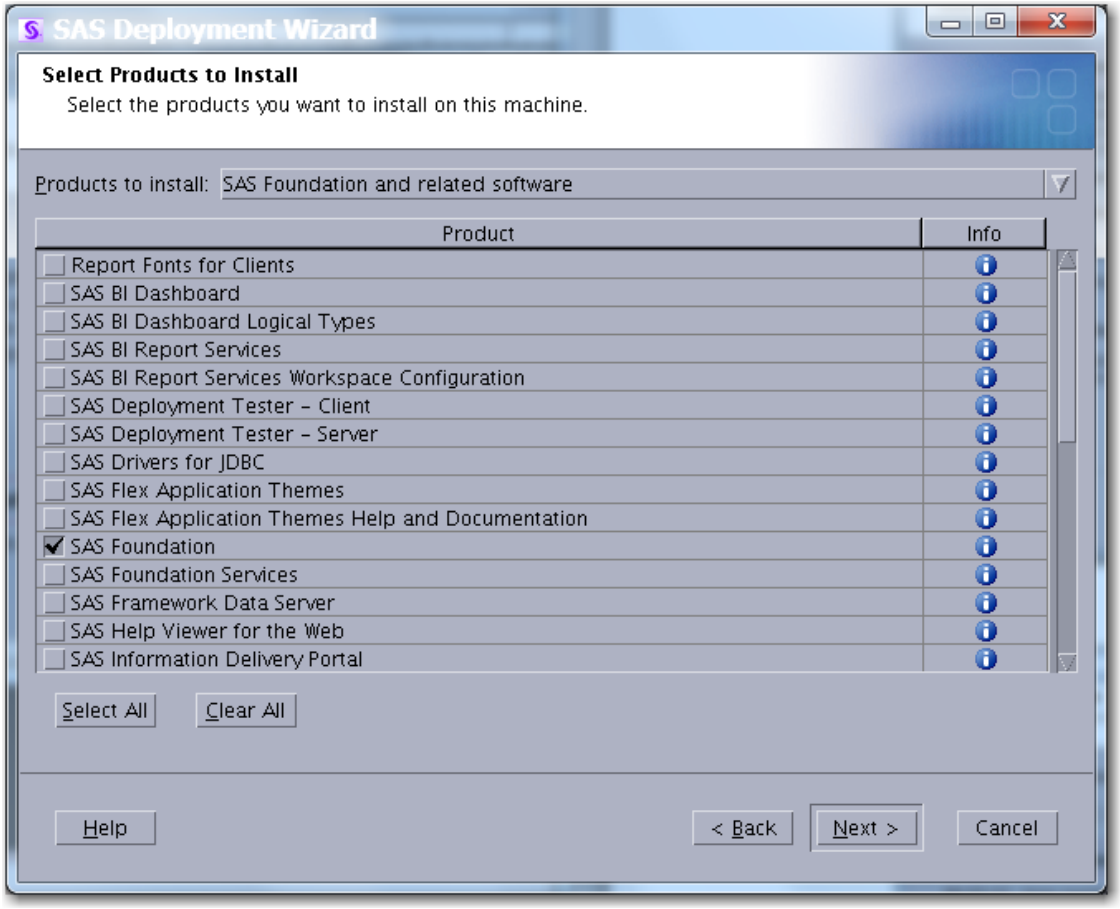
For a new installation, the next 4 screens show some key values. You will be prompted for the deployment type on the second screen. For the 64-bit installation, select **Install SAS**

Foundation and Related Software as shown below.

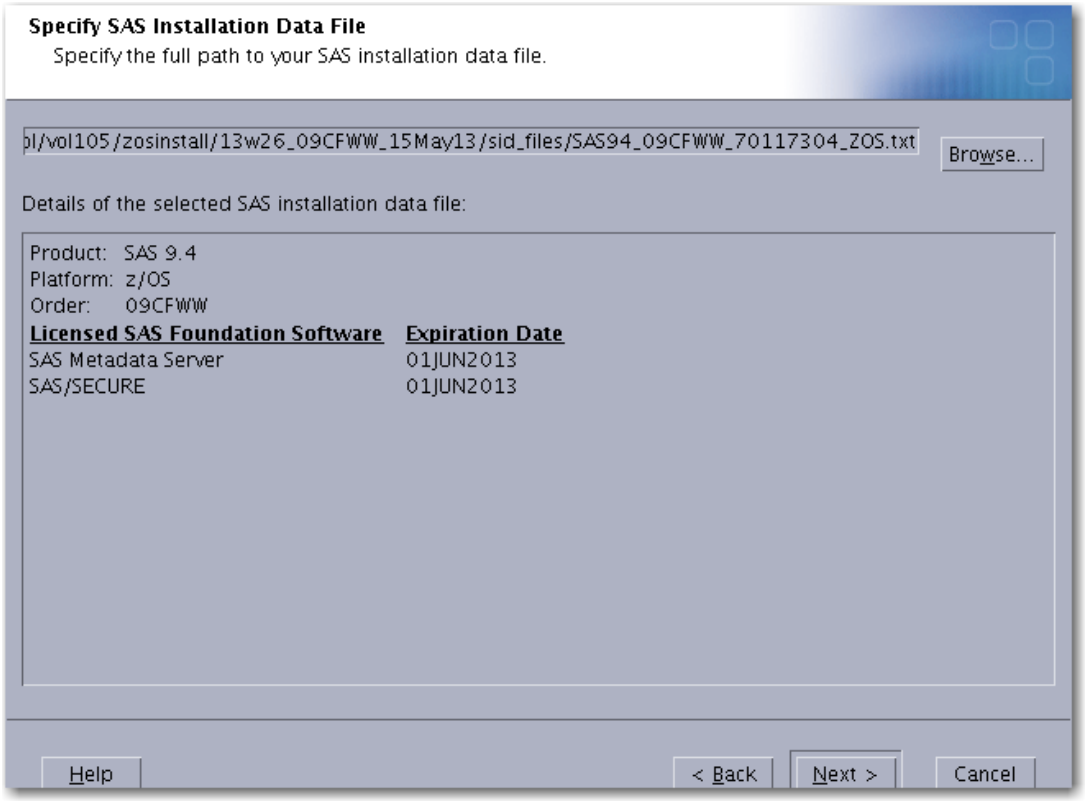


c. When prompted for your SASHOME directory, note that you will use the same directory for both the 64-bit and 31-bit installations.

d. Only select **SAS Foundation** in the "Select Products to Install" screen.



To ensure you are using the correct SID file for the z64 install, the only products that should appear are the SAS Metadata Server and, if it is contained in your order, SAS/SECURE.



e. **Use a separate high-level qualifier for this installation** than you will for your main SAS installation (it could be the main SAS high-level qualifier with an additional level, for example SAS.SAS94.Z64). Note that the load module libraries created for the 64-bit installation do NOT need to be program-controlled as the libraries for the 31-bit installation do.

   Note: *When editing the job cards to match your system standard, please be sure to maintain a minimum region of 96M, or some installation jobs will fail.*

f. If you executed the SAS Deployment Wizard without specifying `-jobsubmit`, after the SAS Deployment Wizard has completed with all green check marks or "S" indicating "Completed Successfully," run the series of jobs indicated in the JOBINDEX member of the *<HLQz64>*`.INSTALL.CNTL` data set. After you submit the first job, each job will submit the subsequent job as its last step.

3. Invoke the SAS Deployment Wizard for the 31-bit install. Note that this will be the second invocation if you installed your metadata server on z/OS following the instructions in Step 2. On your z/OS system, from OMVS (**not** ISHELL), rlogin, or putty, enter the z/OS UNIX shell command **/<SAS Software Depot>/setup.rexx** at the root of your SAS Software Depot to start the SAS Deployment Wizard.
   The most commonly used options for configuring servers are:

-record	records the values that you enter for the SAS Deployment Wizard prompts in the file specified by the `-responsefile` option. This is convenient when you have to enter many options such as port numbers and you may have to rerun the configuration later. Note that once you have saved a response file, you can use it in a subsequent invocation of the SAS Deployment Wizard by specifying `-responsefile` without the `-record` option.
-responsefile	if `-record` is also specified, a new file is created with the responses entered in that invocation of the SAS Deployment Wizard. If `-record` is not specified, an existing response file from a previous run will be used to fill in the responses from that previous run. Your installation user ID must have write access to the specified file.
-deploy	if you specify `-record` you must also specify `-deploy` to actually deploy the software.

   Example

   ```
   /<SAS Software Depot>/setup.rexx -record -responsefile
   /u/userid/sdwresponse.properties
   ```

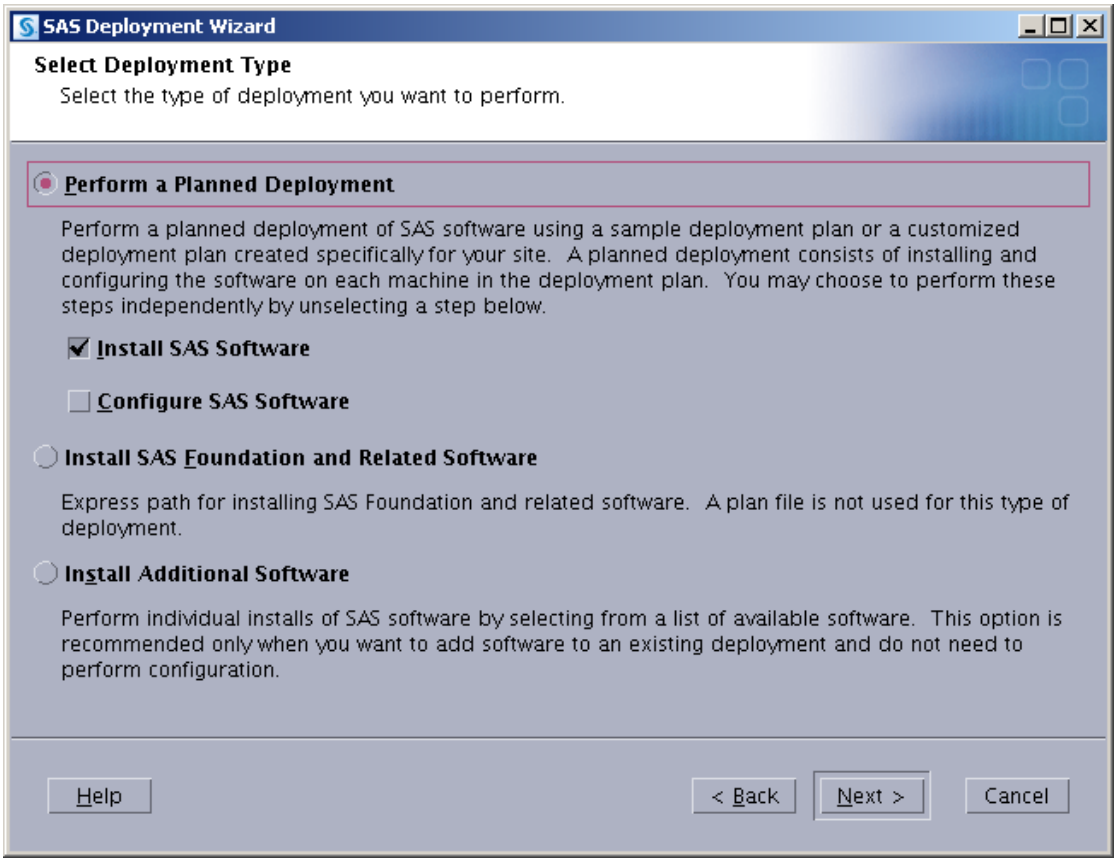
   Notes:

   - By default, no deployment occurs when running in a record mode. In order to force a deployment while recording, use `-deploy`. For example:
     ```
     /<SAS Software Depot>/setup.rexx -record -responsefile
     /u/userid/sdwresponse.properties -deploy
     ```
   - If you specify a file location where a file already exists, the pre-existing file will be overwritten by the SAS Deployment Wizard.
   - A full listing and description of these command-line options for setup.rexx may be found in the *SAS Deployment Wizard User's Guide*, available from the Install Center at `http://support.sas.com/installcenter`.

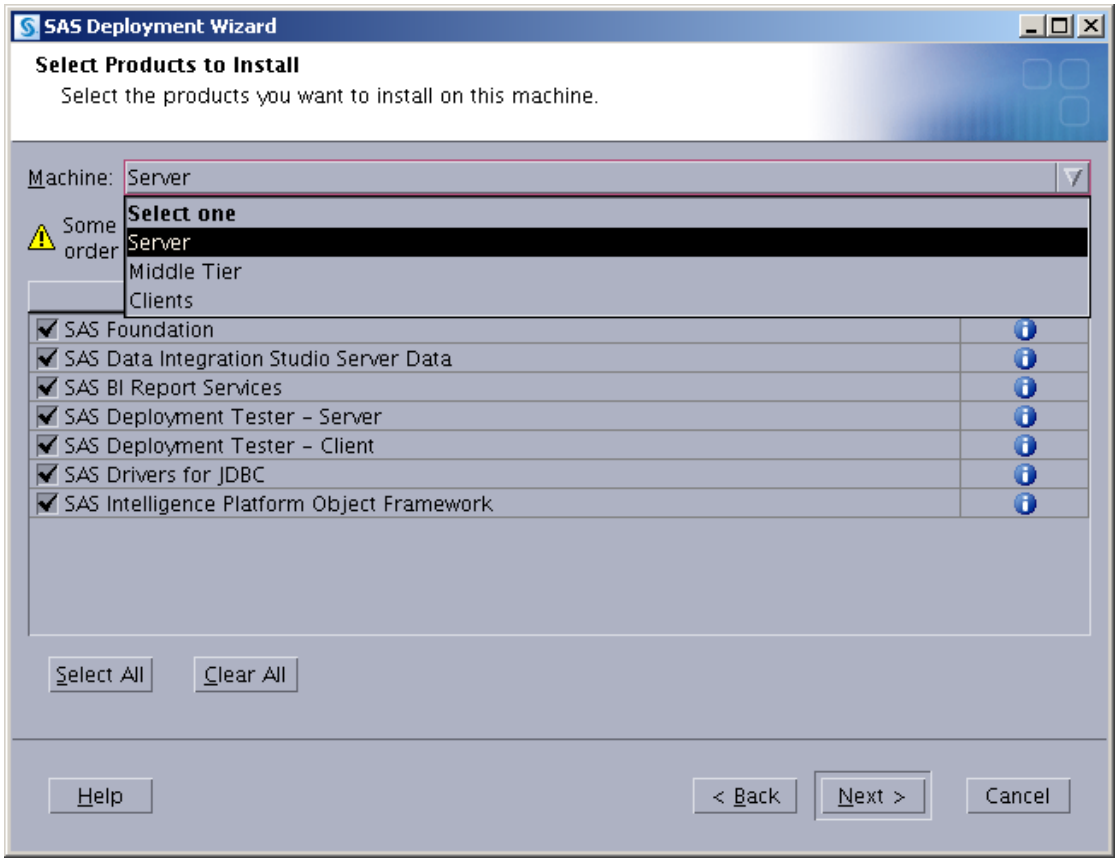
4. Before you configure your servers, you must have the SASCP64 module installed where it can be accessed as a TSO or UNIX command. For TSO, the SASCP64 module must be in a TSO command library or in STEPLIB. If you use rlogin to access your z/OS system, the SASCP64 module must be in link list.
   If you do not have the SAS SVC installed from a previous SAS 9 release, you must also install that into your system before running the configuration. You can do this by installing (but not configuring) 31-bit SAS and then obtain the SVC module from the load library, or you can download it from SAS Note SN 43697 available at `http://support.sas.com/kb/43/697.html`.

5. **Complete this step only if you are performing a new installation.** If you are applying maintenance, proceed to Step 10. Use the SAS Deployment Wizard dialogs to install the 31-bit software. If you specify the `-jobsubmit` option, you can configure your servers in the

same invocation of the SAS Deployment Wizard. Otherwise, you should check only "**Install SAS Software**" as shown below.

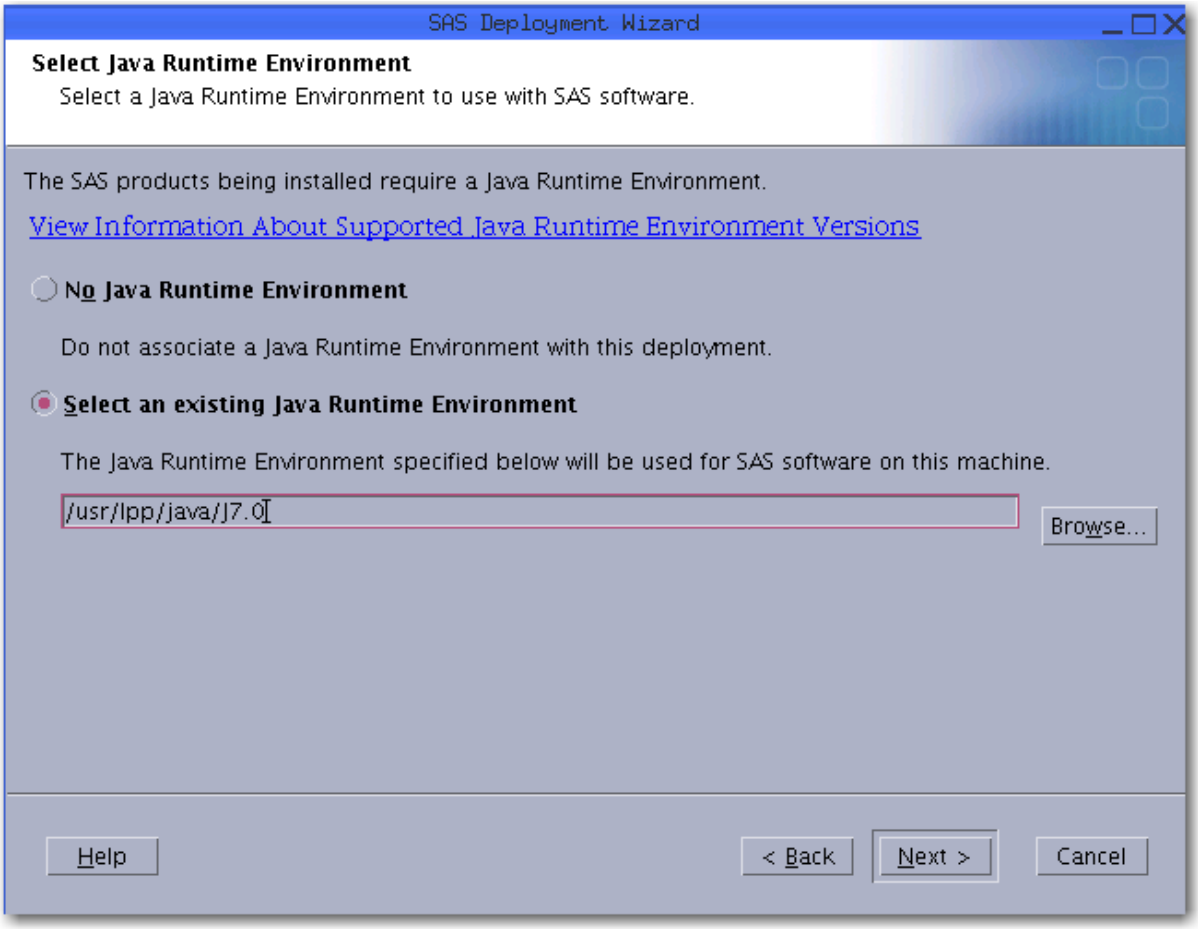


- Use the **Help** button for more information about the choices available in each page. One common point of confusion in the SAS Deployment Wizard is selecting which machine in a multi-machine plan you are working with. For z/OS, you will usually be choosing "Server," "SAS Application Server," or "SAS Metadata Server," depending on the plan you are using and what you wish to install and configure on this machine.

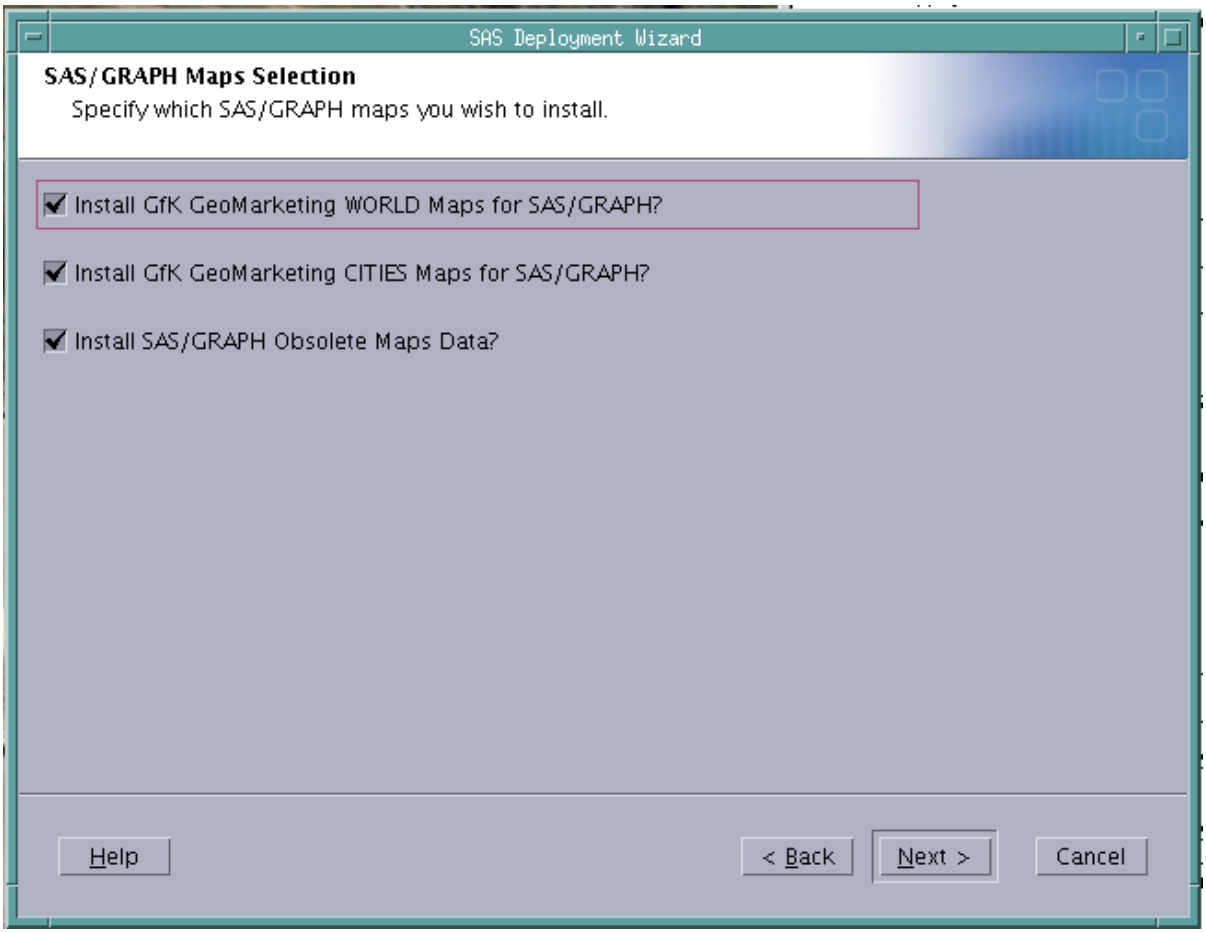


- Be sure to use the same JRE as you are using to run the SAS Deployment Wizard for the "Select Java Runtime Environment prompt" (see the screen image which follows). If you are unsure of which JRE you are using, see the messages displayed when the SAS Deployment Wizard starts up which indicate the JRE being used. Alternatively, you may call SAS Technical Support for assistance.
  This is an example of the messages displayed by the SAS Deployment Wizard (the highlighted text is what you would have put in the prompt in the SAS Deployment Wizard):

  java runs from **/usr/lpp/java/J7.0**/bin/java by default.
  The java version found is:
  java version "1.7.0"
  Java(TM) SE Runtime Environment (build pmz3170sr4fp2-20130426_01(SR4 FP2))
  IBM J9 VM (build 2.6, JRE 1.7.0 z/OS s390-31 20130422_146026 (JIT enabled, AOT enabled)



- If your site is licensed for SAS/GRAPH, when you run the SAS Deployment Wizard, the **SAS/GRAPH Maps Selection** dialog box will appear:



The Map products can be selected in any combination.

- **GfK GeoMarketing WORLD Maps for SAS/GRAPH** contains the new Map data sets which replace SAS/GRAPH Obsolete Maps Data. In order to use PROC GMAP, you must install either GfK GeoMarketing WORLD Maps for SAS/GRAPH or SAS/GRAPH Obsolete Maps Data, or both
- **GfK GeoMarketing CITIES Maps for SAS/GRAPH** contains the Map data sets that are used by PROC GEOCODE. If these maps are not installed, then some of PROC GEOCODE will work (such as ZIP code support) but cities support will not work
- **SAS/GRAPH Obsolete Maps Data**

Note: *If you install all 3 SAS/GRAPH Map data sets, additional space is used. For more information on the required space for SAS/GRAPH Map data sets. refer to the System Requirements for SAS 9.4 Foundation for z/OS at the SAS 9.4 Install Center Documentation web site:* (`http://support.sas.com/documentation/installcenter/94/index.html`) and select **Documentation for SAS 9.4 Installation on z/OS.**

Note: *To remove or re-install SAS/GRAPH Maps, see the SAS Note SN 55984 available at* *http://support.sas.com/kb/55/984.html*.

Continue through the dialogs or prompts until the SAS Deployment Wizard completes. Remember to specify a region of at least 96M when specifying your JOB JCL.

Note: *If you did run with the* `-jobsubmit` *option, please verify that all batch jobs submitted by the SAS Deployment Wizard ran successfully. The JOBINDEX member of* `<HLQ>.INSTALL.CNTL` *shows which jobs should have executed.*

For more detailed information, please see the *SAS Deployment Wizard and SAS Deployment Manager 9.4: User's Guide* at http://support.sas.com/documentation/installcenter/en/ikdeploywizug/66034/PDF/default/user.pdf.

6. If you executed the SAS Deployment Wizard without specifying `-jobsubmit`, after the SAS Deployment Wizard has completed with all green check marks or "S" indicating "Completed Successfully," run the series of jobs indicated in the JOBINDEX member of the `<HLQ>.INSTALL.CNTL` data set. After you submit the first job, each job will submit the subsequent job as its last step.

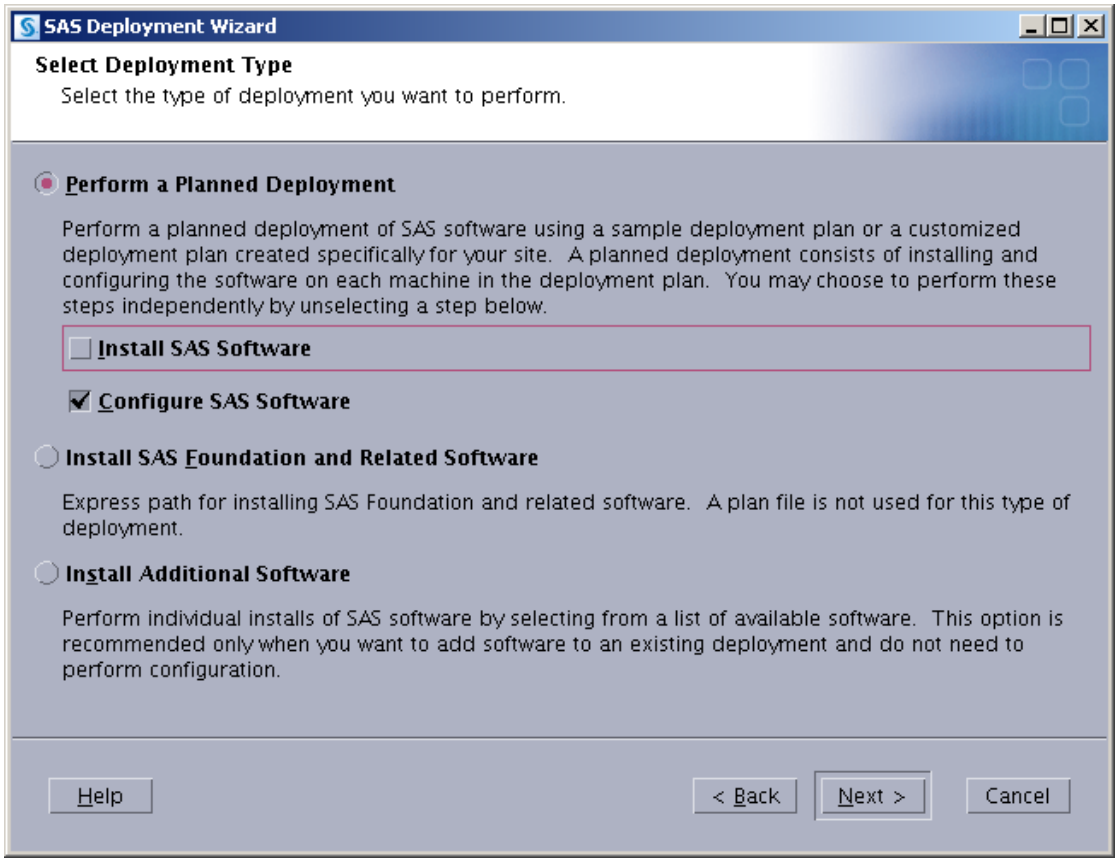
   a. You may want to edit each of the JOBCARDs in the jobs listed in the JOBINDEX member of the `<HLQ>.INSTALL.CNTL` data set to provide any required site-specific accounting information, etc., if you want to do so. You may also want to edit the user-defined fields in the JCL statements (such as UNIT values, SMS classes, etc.), to conform to standards used at your site.

   b. If you want to submit each job individually, you will need to edit the last step that submits the next job through the internal reader. Just delete the IEBGENER step at the end. Otherwise; submit ***only*** the first job.

   c. A separate job named INSTHELP is written to <HLQ>.INSTALL.CNTL and is an **optional** job to run. It represents the online help documentation and depending on your system and other jobs running, could take an hour or more to complete. If you choose to run this job, we recommend that it be run **after** the initial installation has completed.

Note: *After submitting an install job, the* `<HLQ>.INSTALL.CNTL` *library cannot be open in edit mode. The job will wait until it can get exclusive access (DISP=OLD) to the* `<HLQ>.INSTALL.CNTL` *library.*

7. If you did not check "Configure SAS Software" on the first 31-bit invocation, invoke the SAS Deployment Wizard again (see step 3 for appropriate command-line options). This time **only** select **Configure SAS Software** as follows:



   Proceed through the remainder of the configuration.

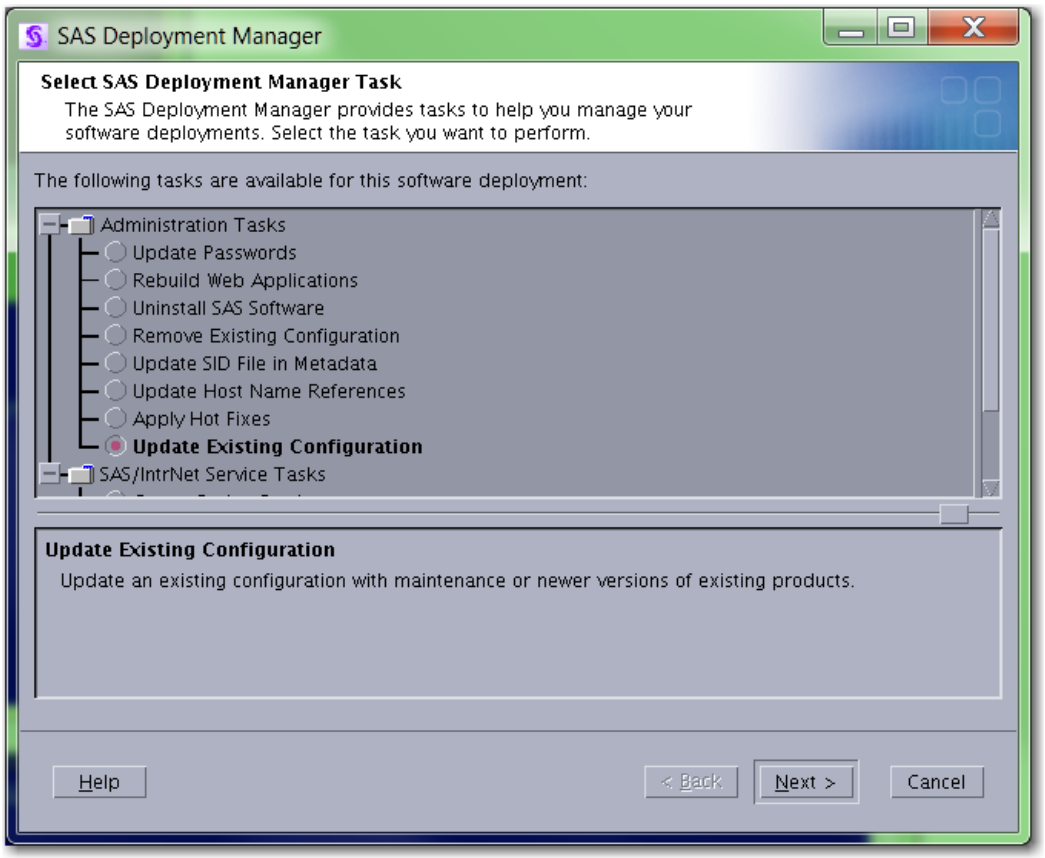
   Note: *You should have defined ports, user IDs, servers, etc., in your pre-installation checklist that will provide the information needed for the configuration dialogs.*

8. **Complete this step only if you are applying maintenance.** If you applied maintenance to an existing installation, you must invoke the SAS Deployment Manager to complete the update of your configuration. Make sure that all servers are stopped except the metadata server, including the web applications.

   In OMVS, navigate using the "cd" command to `<SASHOME>/SASDeploymentManager/9.4` and invoke the following command:

   ./sasdm.rexx

   Then, select "**Update Existing Configuration**" as shown below.



Proceed through the remaining dialogs to complete your configuration.

Updating an Existing Installation

If you are adding a new order to an existing installation, and the jobs listed in the JOBINDEX member were named MAINT01 through MAINTnn and MANTHELP (update to the Help system), then the SAS Deployment Wizard went into update mode and updated your installed SAS products to the most current level. If your order contained new SAS products, you will need to invoke the SAS Deployment Wizard **again** to install those products, following the same instructions above starting with Step 3 under "Installation Steps."

Step 3. Validate Installation and Post-Configuration

1. After all installation jobs have finished, submit the VALID job in the `<HLQ>.INSTALL.CNTL` data set from the 31-bit installation and ensure that all steps complete with a return code of 0.
2. Consult the configuration instructions available for your operating system for product-specific post-installation steps. The configuration instructions are available from Install Center.

Note: *Before copying an installation to another system, please contact SAS Technical Support.*

Step 4. Managing Server Sessions

After the SAS Deployment Wizard has finished configuration of your software, any servers you have configured (metadata server, object spawner, OLAP server, etc.) will be running as UNIX processes.

To stop these processes cleanly, in OMVS navigate to your configuration directory, then the `Lev1` directory below that, and execute the following command:

```
./sas.servers stop
```

You can also issue this command

```
./sas.servers status
```

to see the status of all servers (and which ones are running)

or

```
./sas.servers start
```

to start all servers in the correct order. If you want to run your servers as started tasks, for example, you would stop all the UNIX processes, and then use the JCL created for the started tasks in the data set `<high-level-qualifier>.Wn.SRVPROC`.

Step 5. Installing SAS 9.4 Mid-tier and Client Software from the SAS Software Depot

Creating the SAS Software Depot for Your Mid-tier and Client Machines

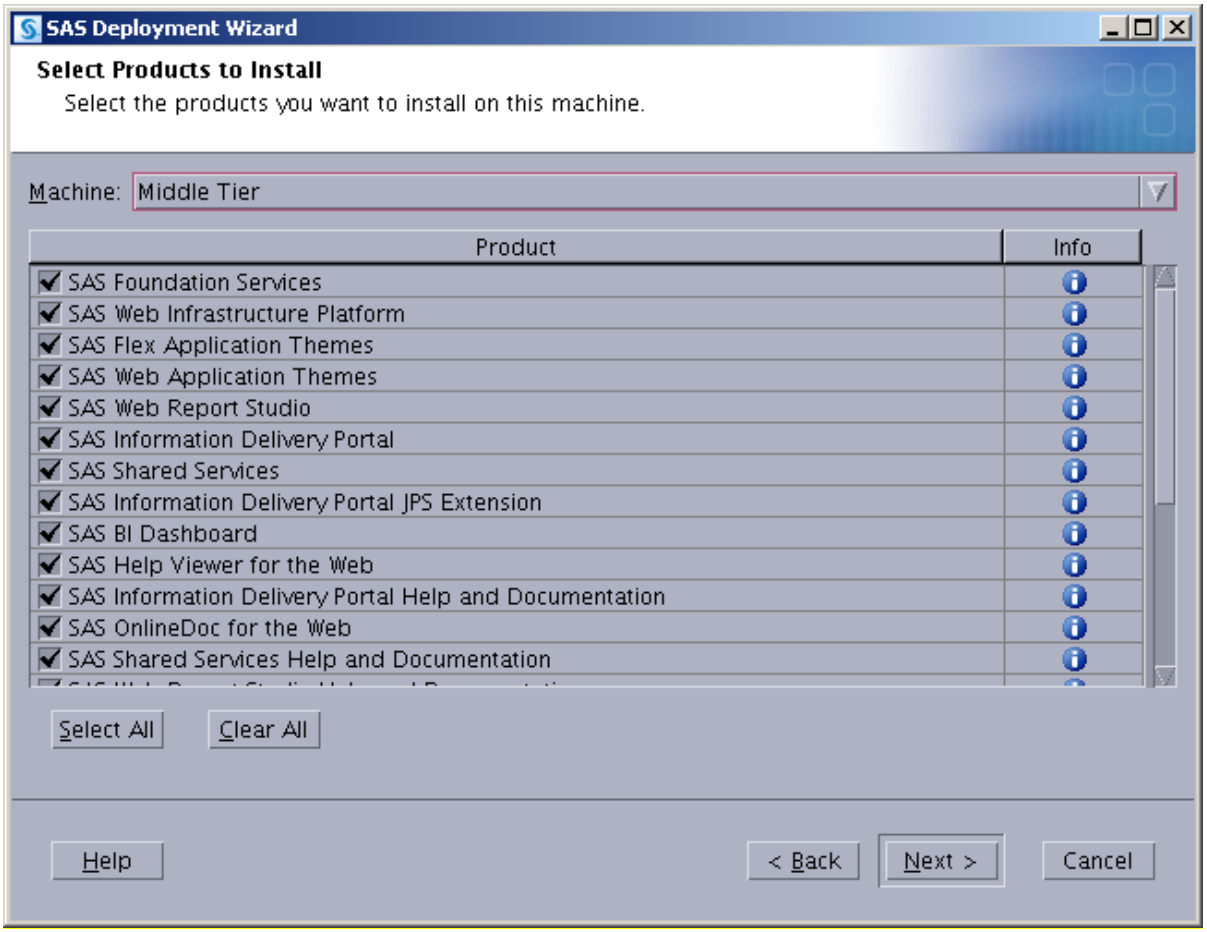
To install software on your mid-tier and client machines, the SAS Software Depot must be accessible to those machines. If your machines can share directories, a single copy of the SAS Software Depot can be shared between machines, even on machines with different operating systems. You can use either of the following methods to create the depot:

- Use the DVDs that came with your cartridge and follow the instructions with those DVDs to create the SAS Software Depot for each of your mid-tier and client machines.
- Copy your SAS Software Depot from z/OS to the other machines using a third-party FTP utility that can transfer entire directory trees in binary mode and preserve the case of all file names.

Installing Required Third-Party Software

- Your checklist names any third-party software that must be installed before you install your SAS software. If you have no third-party software listed in the checklist or the ordersummary.html, skip to "Installing SAS Software from the SAS Software Depot" on page 22.
- The checklist indicates which third-party software must be obtained from its vendor. Obtain that software and install it according to the vendor's instructions.
- Some of your third-party software may be provided in your software order. That software is listed in your `ordersummary.html` which is available in your SAS Software Depot. Follow the path for each third-party product listed in the Third Party section of the `ordersummary.html` to locate the documentation for its installation.

Note: *You should use the same plan as you used for the z/OS Server tier. Select* ***Middle Tier*** *or* ***Clients*** *as appropriate.*



Installing SAS Software from the SAS Software Depot

Windows users should double-click the setup.exe file at the top level of your SAS Software Depot. The most commonly used options are:

-record records the values that you enter for the SAS Deployment Wizard prompts in the file specified by the `-responsefile` option. This is convenient when you have to enter many options such as port numbers and you may have to rerun the configuration later. Note that once you have saved a response file, you can use it in a subsequent invocation of the SAS Deployment Wizard by specifying `-responsefile` without the `-record` option.

-responsefile if `-record` is also specified, a new file is created with the responses entered in that invocation of the SAS Deployment Wizard. If `-record` is not specified, an existing response file from a previous run will be used to fill in the responses from that previous run.

-deploy if you specify `-record` you must also specify `-deploy` to actually deploy the software.

-console only used for UNIX hosts, not needed on Windows.

Example

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

Notes:

- By default, no deployment occurs when running in a record mode. In order to force a deployment while recording, use `-deploy`. For example (enter as one line):
  ```
  setup.exe -record -responsefile "C:\Program Files\SAS\
  sdwresponse.properties " -deploy
  ```
- If you specify a file location where a file already exists, the pre-existing file will be overwritten by the SAS Deployment Wizard.
- For more information about the choices available in each dialog, click the Help button. A full listing and description of these command-line options for `setup.exe` may be found in the *SAS Deployment Wizard and SAS Deployment Manager 9.4: User's Guide* at `http://support.sas.com/documentation/installcenter/94/mvs/index.html`.
- UNIX users should execute **`setup.sh`** from the root of your SAS Software Depot.

Tips and Additional Information

For the latest installation news, please visit these sites for tips and additional information that may not be in your documentation:

General support for SAS issues (including a link to Tech Support)

`http://support.sas.com`

Technical Support SAS 9.4 Hot Fix downloads

`http://ftp.sas.com/techsup/download/hotfix/hotfix.html`

Locating the log files for SAS 9.4 installations

`http://support.sas.com/kb/43/606.html`

Documentation for a SAS 9.4 installation on z/OS

`http://support.sas.com/documentation/installcenter/94/mvs/index.html`

Technical Support

If you need assistance with the software, we ask that only the SAS Installation Representative or the SAS Support Consultant call our Technical Support Division.

For U.S. and Canadian customers, support is provided from our corporate headquarters in Cary, North Carolina. You may call (919) 677-8008, Monday through Friday.

Customers outside of the U.S. can obtain local-language technical support through the local office in their countries. Customers in these locations should contact their local office for specific support hours. See `http://support.sas.com/techsup/contact/index.html` for contact information for local offices.

Before calling, you may want to explore the SAS Institute Technical Support web site at `http://support.sas.com/techsup/`. The Technical Support web site offers a Knowledge Base, FAQs, Technical Support Documents and more that may answer your questions. This web site also provides a mechanism for reporting problems.

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