SAS® 9.4 Foundation and Related Software: Installation Guide for z/OS

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SAS 9.4 Foundation and Related Software: Installation Guide for z/OS

Audience

The information in this document can be used by a SAS System Administrator to install SAS Foundation on a z/OS machine.

Chapter 1

Introduction

What Is SAS Foundation and Related Software? 1
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What Is SAS Foundation and Related Software?

SAS Foundation refers to the superset of all SAS software that can be deployed with Base SAS, such as SAS/ACCESS and SAS/GRAPH. Therefore, the list of products that constitute SAS Foundation can vary between SAS software orders. In your case, SAS Foundation is the collection of SAS products that was ordered by your company for your site.

Related software consists of SAS products that are neither part of SAS Foundation nor the third-party software your order might require. Related software can be graphical user interfaces, tools, or programming environments that enable you to effectively use SAS products. SAS ODS Graphics Editor and SAS/IML Studio are examples of related software.

Basic Deployment Type

When you install SAS Foundation, you are performing a basic deployment. Unlike planned deployments, basic deployments do not require a deployment plan.

SAS Software Distribution Methods

SAS supports the following methods for distributing SAS software orders:

- Electronic Software Delivery (ESD)

  The SAS ESD process enables users to receive an order over the internet from the SAS support website.

- File Transfer Protocol (FTP)

  The FTP process does not require you to create a SAS Software Depot. SAS provides customized system image based on your order and sends it to you in FTP format.

With ESD as the distribution method, you build a SAS Software Depot from which you install SAS Foundation.

What Is Covered in This Document?

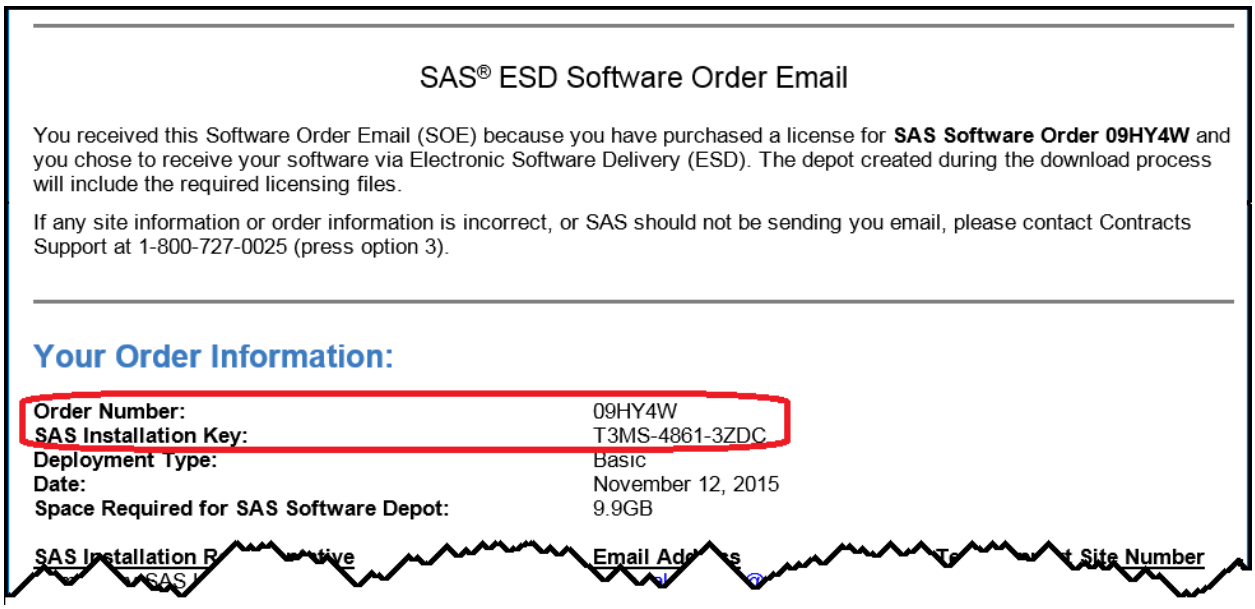
This document assumes that you and your SAS representative have decided what software you need and on what machine you will install the software. This document begins with pre-installation and continues through the installation, and configuration tasks that you must perform for a *basic* deployment of SAS Foundation and related software on a z/OS machine.

This document is written for the SAS system administrator—the person who oversees the entire process of deploying SAS. The administrator receives the software order email (SOE), downloads the order, and installs and configures SAS.

Software Order Email (SOE)

SAS sends an email to your site representative to provide details about your SAS software order. This email is referred to as the *software order email (SOE)*. The SOE contains two pieces of information that are critical for deploying SAS: your SAS order number and SAS installation key. You will need this information later in the deployment process.

Figure 1.1 *Software Order Email*



SAS® ESD Software Order Email

You received this Software Order Email (SOE) because you have purchased a license for **SAS Software Order 09HY4W** and you chose to receive your software via Electronic Software Delivery (ESD). The depot created during the download process will include the required licensing files.

If any site information or order information is incorrect, or SAS should not be sending you email, please contact Contracts Support at 1-800-727-0025 (press option 3).

Your Order Information:

Order Number:	09HY4W
SAS Installation Key:	T3MS-4861-3ZDC
Deployment Type:	Basic
Date:	November 12, 2015
Space Required for SAS Software Depot:	9.9GB

Overview of Deploying SAS Foundation

Five steps are required to deploy SAS Foundation:

1. Complete the Pre-Installation Checklist.
2. Set up a SAS profile.
3. Create a SAS Software Depot.
4. Install SAS.
5. Validate your SAS deployment.

Complete the Pre-Installation Checklist : Step One

Before you continue, complete all of the tasks listed on the pre-installation checklist:

Table 1.1 *Pre-Installation Checklist*

	Task	Description
❑	Make sure that your machine meets all system requirements.	Verify that your system meets the minimum requirements. For more information, see the System Requirements for SAS 9.4 Foundation for z/OS. For example, the machine from which you are downloading the SAS installation software must have the following: • Internet access Your machine must be able to access the SAS download website. • a windowing environment (optional) Make sure that a windowing environment, such as the Common Desktop Environment or X11, is installed. • UNIX file system services requirements • adequate disk space Just before creating a depot, the SAS Download Manager displays an estimate of the amount of disk space required for your download.
❑	Verify the Installed Version of Java	Verify that a supported IBM 31-bit SDK version of Java is installed. Check the SAS Third-Party Support for Java page for information about the latest supported version of Java at https://support.sas.com/en/documentation/third-party-software-reference.html.
❑	Check for new hot fixes.	Critical hot fixes that were released after the current maintenance release are automatically installed when you run the SAS Deployment Wizard. Additional hot fixes might be available for your products. To determine whether there are additional hot fixes for your products, see https://ftp.sas.com/techsup/download/hotfix/hotfix.html.
❑	Ensure that your operating system supports the version of SAS that you are preparing to install.	SAS 9.4 Foundation and related software can run on specific versions of the z/OS operating system. To find out if your machine supports the current release, go to the Supported Operating Systems page at https://support.sas.com/supportos/list.
❑	Create a SAS Installer user account on your machine.	Always use the SAS Installer user (for example, sas) to deploy SAS and to apply future hot fixes, updates, and product add-ons.
❑	Create an operating system group on your machine	This operating-system group (for example, sasgroup) should be the primary group for the SAS Installer user. Members of this group are given access to certain directories and files that are created by the SAS Deployment Wizard (the program used to install and configure SAS).
❑	Determine target location for initial download of your SAS software depot	Before you download the SAS Download Manager, you must first determine a location to store your SAS Software Depot. This location can be: • A directory on Windows or UNIX that you can FTP to a UNIX file system directory on z/OS. • A UNIX file system directory on the z/OS machine. • A UNIX file system remote directory that is accessible to the z/OS machine via NFS mount.

	Task	Description

❑	Create a SAS directory on your machine	SAS requires a location on your machine to store the following:
		• The SAS Download Manager (the program used to download SAS installation files)
		• Downloaded SAS installation files (referred to as a SAS Software Depot)
		• SAS software installation (referred to as SASHOME)
		SAS recommends that you designate one directory to serve as a parent for three subdirectories. These subdirectories contain each piece of SAS software. Here is an example:
		`/usr/lpp/SAS/`
		`dlm/`
		`depot/`
		`sashome/`

❑	Make sure that the SAS directory meets all requirements.	The SAS directory must meet these requirements: • Grant the SAS installer user Read, Write, and Execute permissions. • The SASHOME subdirectory requires at least 5 GB of UNIX file system space. • The SAS directory and its child directories do not contain whitespace characters or special characters in their names.
❑	Ensure that the User ID for the installation meets requirements.	The installer 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 defined default program shell • Must not be a superuser • Must not share a UID with other user IDs The installer user IDs used for either SAS Download Manager or SAS Deployment Wizard to install SAS 9.4 Foundation for z/OS require a larger region setting. For OMVS: set region size for installer user ID for TSO to at least 1024 MB and set ASSIZEMAX to 1GB. For UNIX-style commands using rlogin, putty or Telnet: set ASSIZEMAX to 1 GB. *Note:* If SAS Software Depot is downloaded directly to a z/OS UNIX file system directory, increase the CPU time that is available to the SAS Download Manager download process. Set CPUTIMEMAX to 5000 in the OMVS segment of the user ID. The CPU time that is required to download the software varies depending on size and number of products in the order. *Tip:* If SAS Download Manager encounters a SIGXCPU error, increase the CPUTIMEMAX and then restart the SAS Download Manager to continue the download that was in progress.

	Task	Description
❑	Decide which locale (or regional) setting to use and whether to configure your machine as a Unicode server.	The **Select Regional Settings** page of the *SAS Deployment Wizard* enables you to select the locale for your SAS software. The locale of your operating system must match the locale that you plan to select during installation. The locale setting controls how SAS 9.4 formats text, numbers, currencies, date-time formats, and data (sorting) in the user interface. The **Select Regional Settings** page of the *SAS Deployment Wizard* also enables you to configure your machine as a Unicode server. Unicode is useful if your deployment supports multiple languages. However, UTF-8 encoding can cause problems when sharing SAS data with sites that use default encodings. *Note:* If you plan to configure your machine as a Unicode server, your operating system must use UTF-8 encoding.
❑	Locate your Software Order Email.	Your "Software Order Email (SOE)" contains two pieces of important information that you will need later when you download your SAS software: your SAS order number and your SAS installation key.

Proceed to Setting Up Your SAS Profile on page 7.

Chapter 2

Setting Up Your SAS Profile

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Deployment Process Overview: Step Two

This chapter describes how to set up a profile on the SAS Technical Support website.

Setting up a profile is the second of five steps in deploying SAS Foundation.

1. Complete the Pre-Installation Checklist.
⇨ **2. Set up a SAS profile.**
3. Create a SAS Software Depot.
4. Install SAS.
5. Validate your SAS deployment.

Note: You are not required to set up a SAS profile if you are installing from FTP format. Proceed to Creating Your SAS Software Depot on page 13 .

Overview of Setting Up a Profile on the SAS Technical Support Website

Setting up your profile on the SAS Technical Support website, support.sas.com, consists of the following steps:

1. Using a web browser, go to support.sas.com and provide the necessary information.
2. Click the link in a confirmation email that SAS sends to you.
3. Complete your SAS profile by providing a password.
4. Using your new SAS profile, verify that you can log on to support.sas.com.

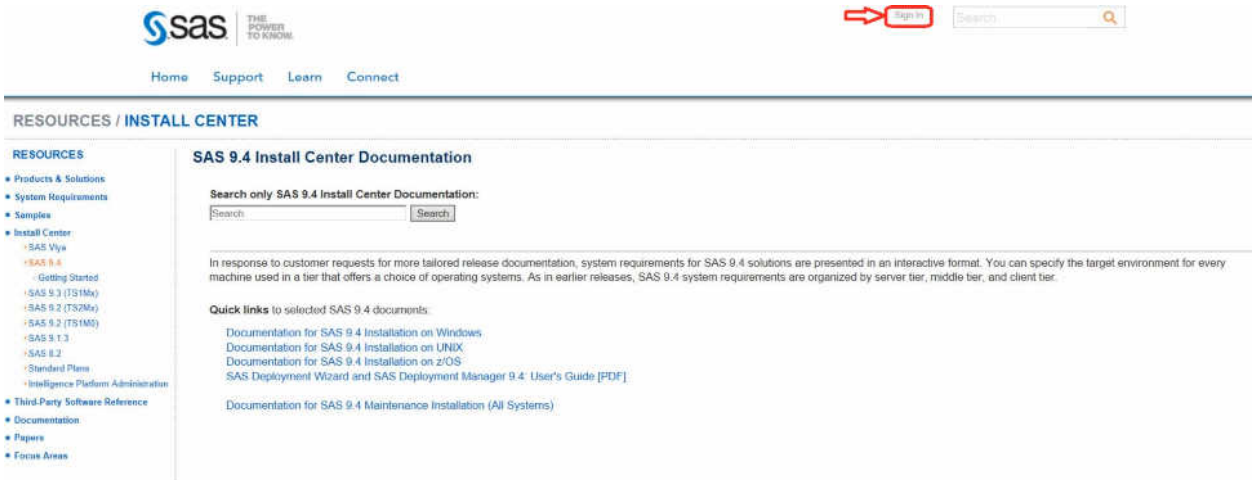
Set Up a Profile on the SAS Technical Support Website

You must create a SAS profile before you can download your SAS software order.

If you have not yet set up a profile on the SAS Technical Support website (support.sas.com), follow these steps:

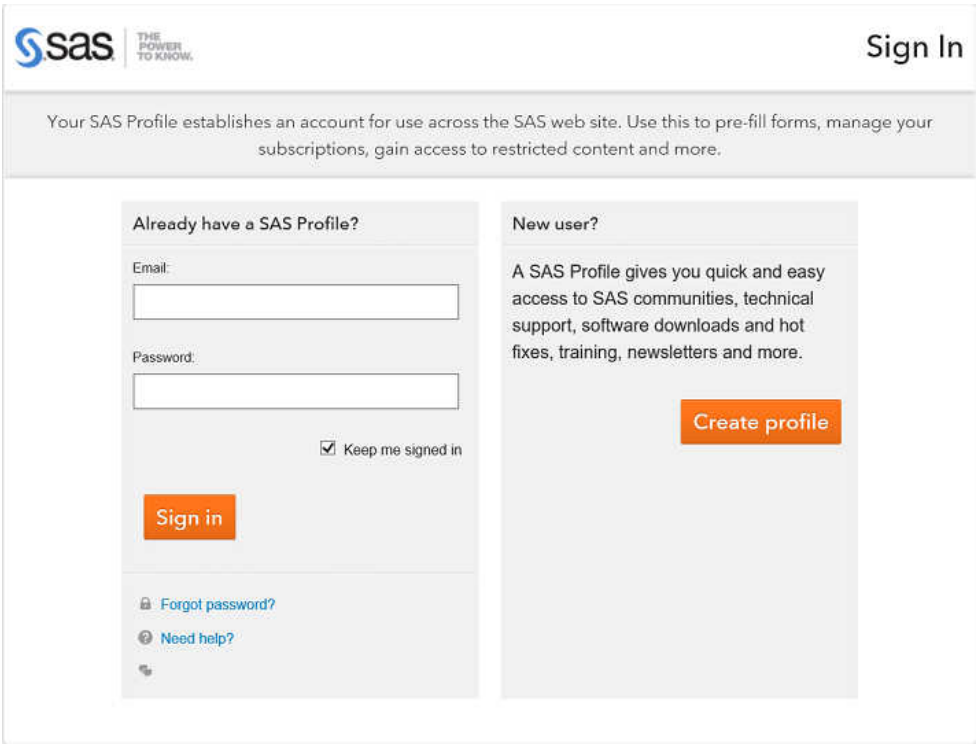
1. You are not required to set up a SAS profile if you are installing from FTP format. Proceed to Creating Your SAS Software Depot on page 13 .
2. Open a web browser and point it to http://support.sas.com/documentation/installcenter/94/index.html.

   The SAS 9.4 Install Center Documentation page is displayed.



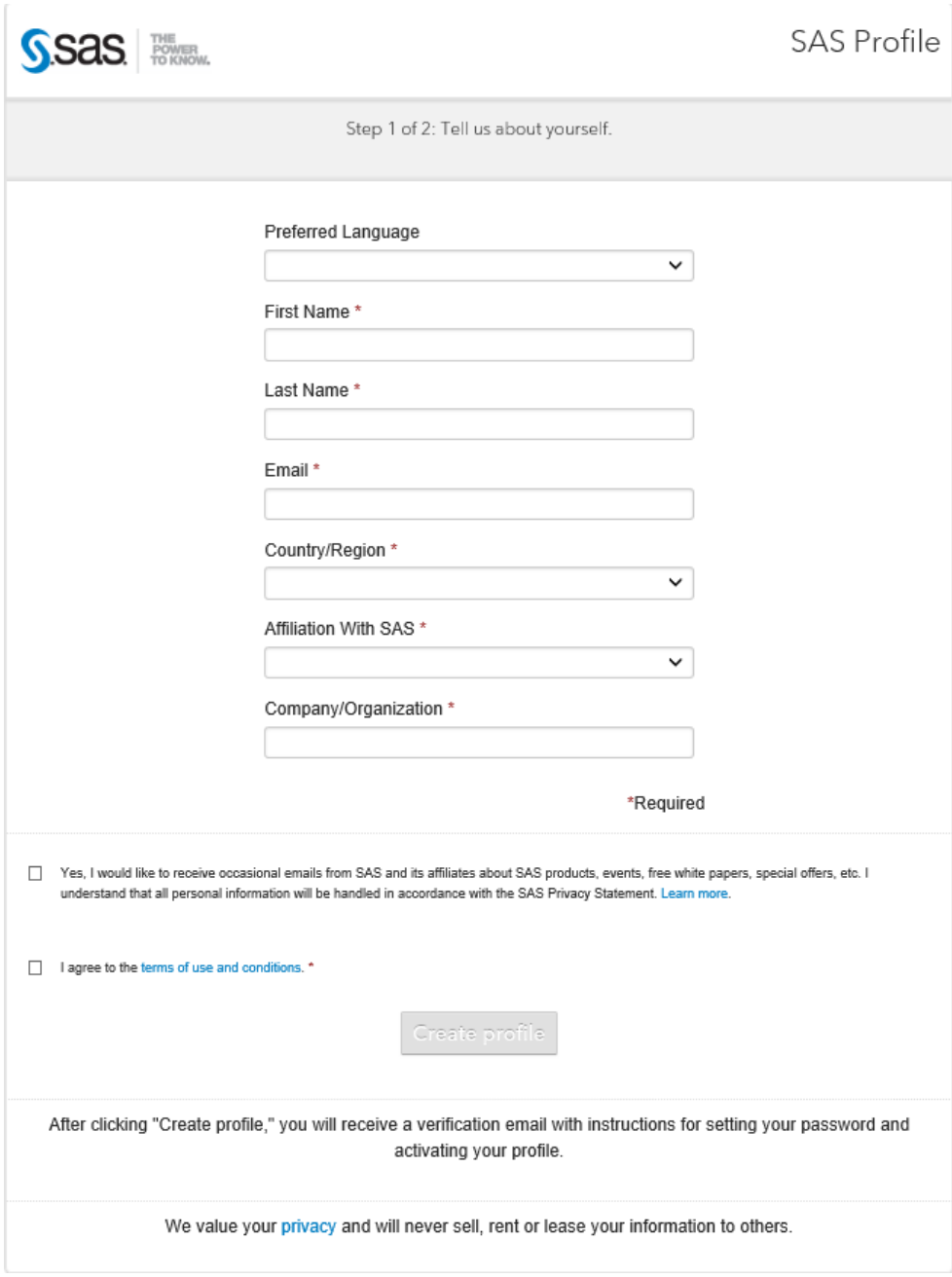
3. In the upper right corner of the page, click **Sign In**.

   The Sign In page is displayed.



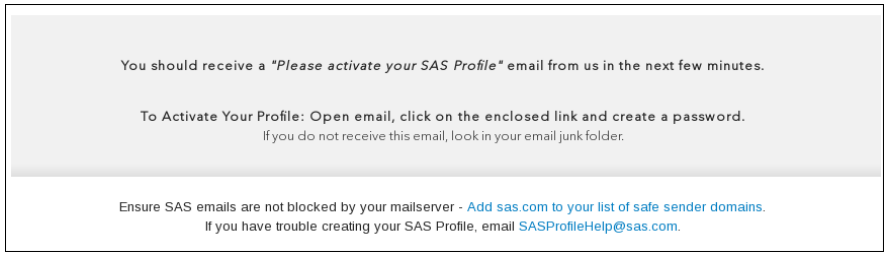
4. Click **Create profile**.

   The SAS Profile page is displayed.



5. Enter the required information and select the check box for agreeing to terms of use. When you finish, click **Create Profile**.

   The My Profile Activation page appears. An email would be sent to the address that you specified when you created your SAS profile.



6. Using your email program, locate the email from SAS with a subject line similar to **Please Activate your SAS Profile**.
7. Click the link in the email, and, using your web browser, follow the instructions to create a password for your SAS profile.
8. Using your web browser, return to http://support.sas.com/documentation/installcenter/94/mvs/. On the upper right corner of the page, click **Sign in** to verify that you can log on to the Install Center.
9. Proceed to Creating Your SAS Software Depot on page 13.

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Creating Your SAS Software Depot

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Deployment Process Overview: Step Three

This chapter describes how to create a SAS Software Depot.

Creating your SAS Software Depot is the third of five steps in deploying SAS Foundation.

1. Complete the Pre-Installation Checklist.
2. Set up a SAS profile.

⇨ **3. Create a SAS Software Depot.**

Note: If you are installing from an FTP order, skip this step and refer to "Install and Configure SAS for FTP Format" on page 48 for FTP installation instructions.

4. Install SAS.
5. Validate your SAS deployment.

Overview of Creating Your SAS Software Depot

Before you can install SAS, you must have a SAS Software Depot to install from. A *SAS Software Depot* is a file system that consists of SAS installation files that represent one or more orders. The depot is organized in a specific format that is meaningful to the SAS Deployment Wizard. It is a program that is used to install SAS.

Perform the following steps:

1. Use a web browser to download and install a program called the SAS Download Manager.
2. Run the download manager to simultaneously download your SAS order and create your SAS Software Depot.
3. Change permission and ownership of your SAS Software Depot directories.

After you create your software depot, you can use the SAS Software Depot Checker Utility to check that your SAS Software Depot is valid.

Download Your Software Order and Create a Depot

To download your software order and use the SAS Download Manager to create your SAS Software Depot, follow these steps:

Note: This download utility can be used interactively with an X11 server, or in text-based interface (console mode).

1. Make sure that you know your SAS order number and the SAS installation key, both of which are contained in your "Software Order Email (SOE)" on page 2.

   You will be asked for this information later.
2. Make sure that you have completed the Pre-Installation Checklist on page 3.
3. Make sure to download the SAS Download Manager for the operating system to which you plan to download the SAS Software Depot.

   If you download your SAS Software Depot to Windows or UNIX, then

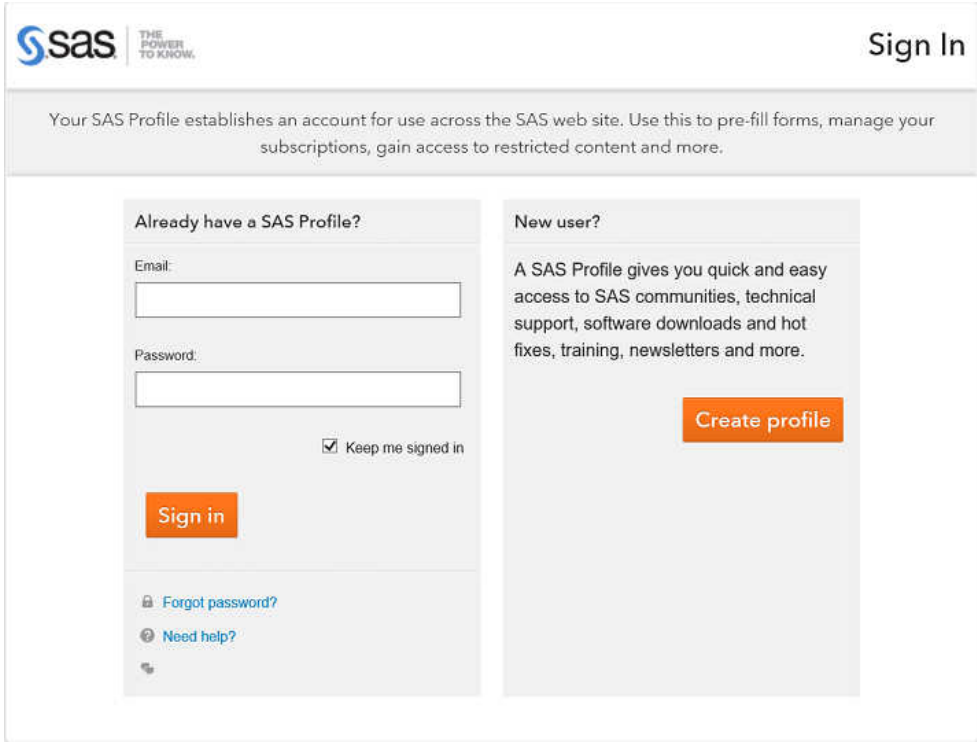
   - you should be able to use a UNIX file system directory on the z/OS system (for example, via NFS mount)
   - you should be able to FTP your SAS Software Depot to z/OS by using one of these methods:
     - a third-party utility that can transfer a complete directory tree
     - SAS Software Copy Utility provided by the SAS Software Depot. You can find details in *SAS Deployment Wizard and SAS Deployment Manager : User's Guide* at http://support.sas.com/documentation/installcenter/94/mvs/index.html
4. Open a web browser and point it to http://support.sas.com/downloadmgr.

   The Downloads page is displayed.

5. If you are not already logged in to the website, do so now by clicking **Sign In**. (If you are logged in, skip to step 7.)

   The SAS Sign in page is displayed.

   Note: If you have not already set up a SAS Profile, see Setting Up Your SAS Profile on page 7 .



6. Enter your email address and password, and click **Sign in**.

   You are returned to the Downloads page.

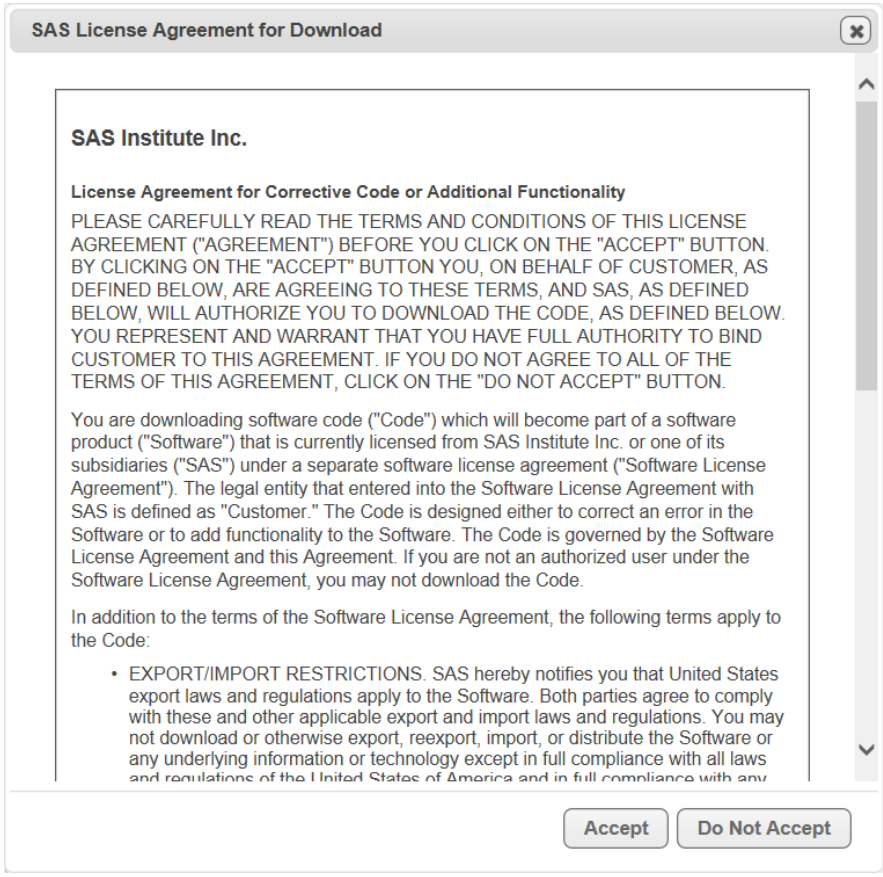
7. Select **SAS Download Manager**.

   The SAS Download Manager window is displayed.

SAS Download Manager						
Platform	**Description**	**Request Download**	**Size**	**Uncompressed**	**Release Date**	**ReadME**
64-bit enabled AIX	SAS Download Manager	esdclient__94500__r64__xx__web__1	117MB	507MB	2018-06	pdf | txt
64-bit enabled Solaris	SAS Download Manager	esdclient__94500__s64__xx__web__1	85MB	507MB	2018-06	pdf | txt
HP-UX IPF	SAS Download Manager	esdclient__94500__h6i__xx__web__1	109MB	507MB	2018-06	pdf | txt
Linux for x64	SAS Download Manager	esdclient__94500__lax__xx__web__1	50MB	507MB	2018-06	pdf | txt
Macintosh	SAS Download Manager	esdclient__94500__mac__xx__web__1.dmg	15MB	507MB	2018-06	pdf | txt
Microsoft® Windows® for x64	SAS Download Manager	esdclient__94500__wx6__xx__web__1.exe	36MB	507MB	2018-06	pdf | txt
Solaris for x64	SAS Download Manager	esdclient__94500__sax__xx__web__1	80MB	507MB	2018-06	pdf | txt
Windows	SAS Download Manager	esdclient__94500__win__xx__web__1.exe	36MB	507MB	2018-06	pdf | txt
z/OS	SAS Download Manager	esdclient__94500__mvs__xx__web__1.zos	17MB	507MB	2018-06	pdf | txt

8. Click the **Request Download** link that is appropriate for your operating system.

   The SAS License Agreement for Download window is displayed.

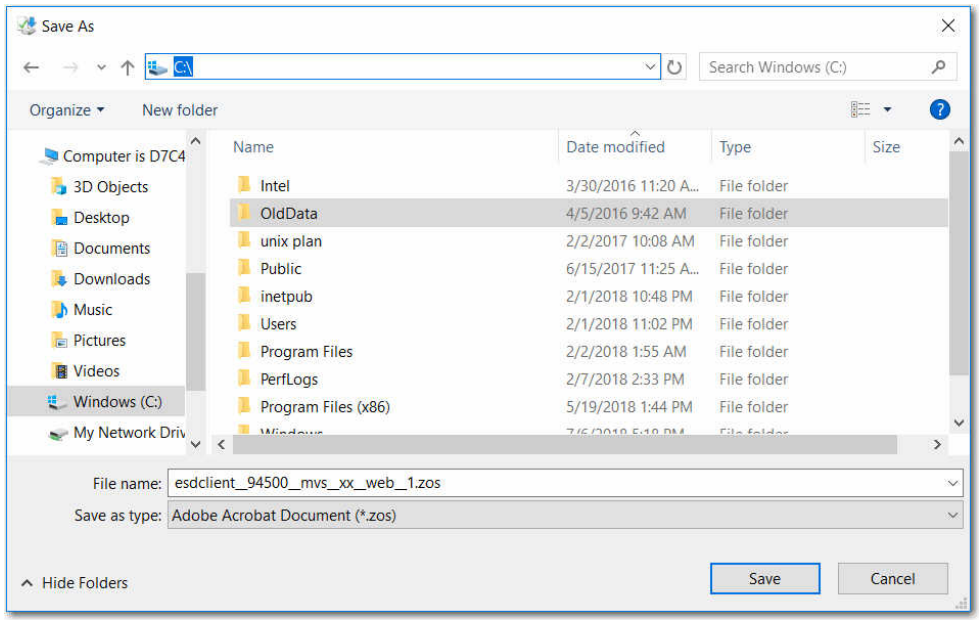


9. Review the license agreement and click **Accept**.

   Your web browser should prompt you to save the download file.

   For example, in internet explorer, you see the Opening dialog box.

10. Save the file on your Windows machine.



Your web browser should give you some indication that the file has been saved and the download is finished.

For example, in Internet Explorer, you see the Downloads dialog box and a Downloads Complete message.

11. Close your web browser.
12. FTP the saved download file in binary to UNIX file system on z/OS.
13. From the OMVS command line, run the download file (for example, **`/usr/lpp/SAS/sas9.4/dlm/esdclient__94500__mvs__xx__web__1`**).

    Note: Java must be installed on the system where the SAS Download Manager runs.

    By default the SAS Download Manager runs in graphical interface. If you want to use a graphic interface, you must have an X11 display server available to display the windows. To use console mode, run **`/usr/lpp/SAS/sas9.4/dlm/esdclient__94500__mvs__xx__web__1 -- -console`**.

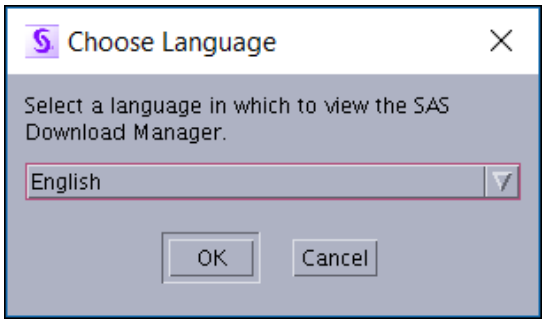
    Note: You might need to turn on the execute bit (for example, **`chmod 755 esdclient__94500__mvs__xx__web__1`**).

    The command begins uncompressing the download manager installation files.

    You should see output similar to the following:

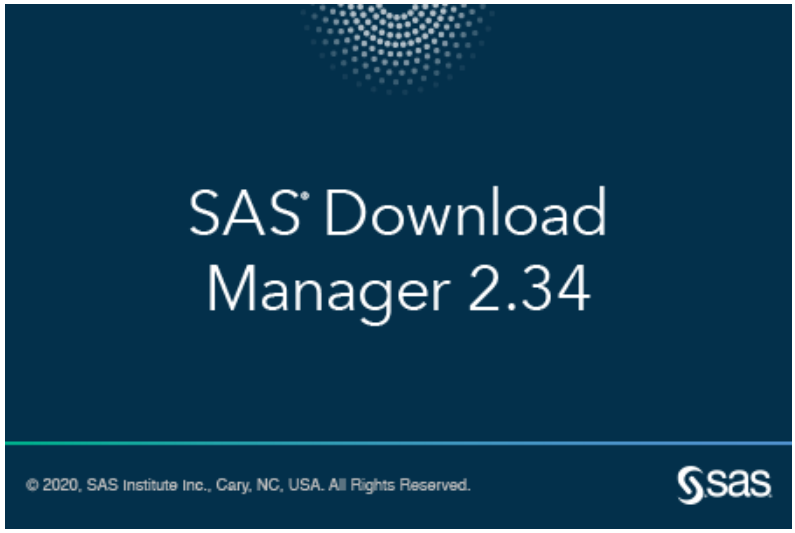
```
Verifying archive integrity... All good.
Uncompressing SAS Download Manager.....................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
.....................................................................
...........
```

    When the files are uncompressed, the Choose Language dialog box is displayed.

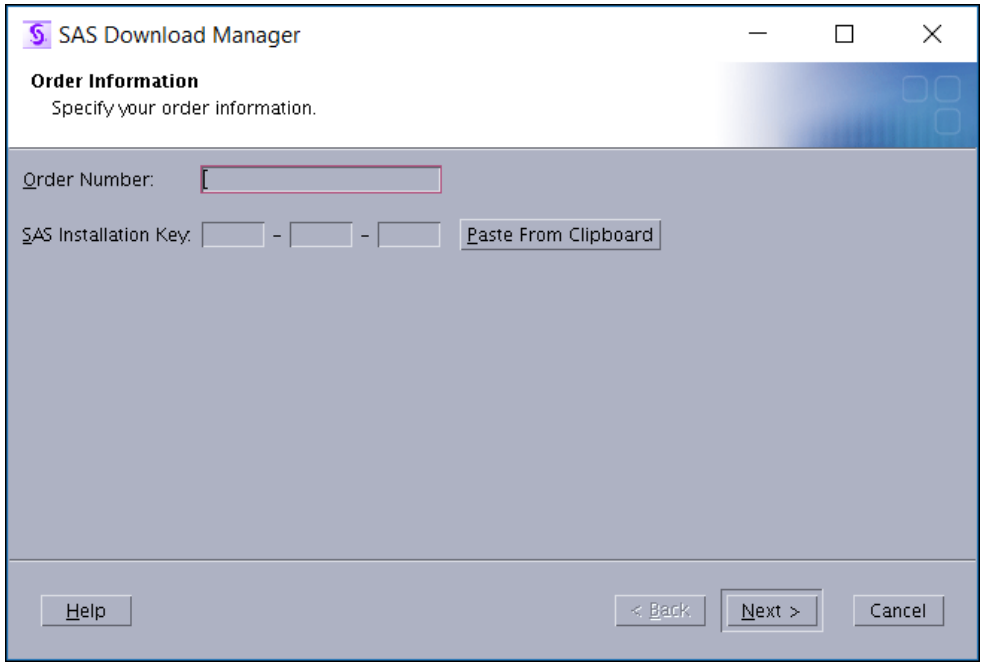


14. Select the language that you want the download manager to use when it displays text, and click **OK**.

    The download manager splash screen is displayed.



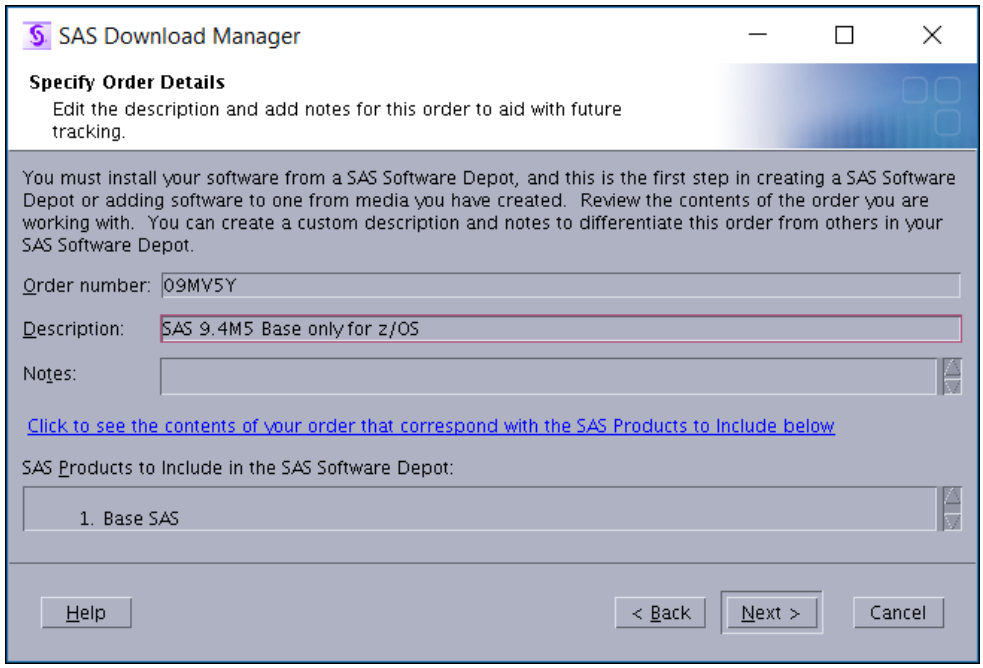
The **Order Information** window is displayed.



15. Referring to your SAS order email, enter your SAS order number and SAS installation key and click **Next**.

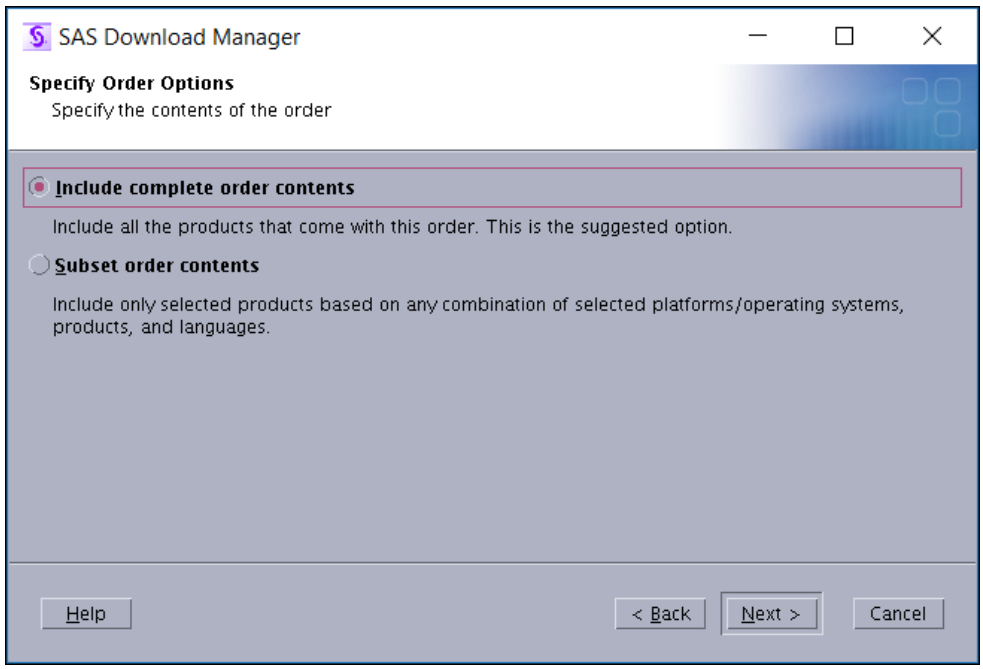
   TIP You speed up entry of the SAS installation key by copying the key from your SAS order email, and clicking the **Paste from Clipboard** button.

   The Specify Order Details window is displayed.



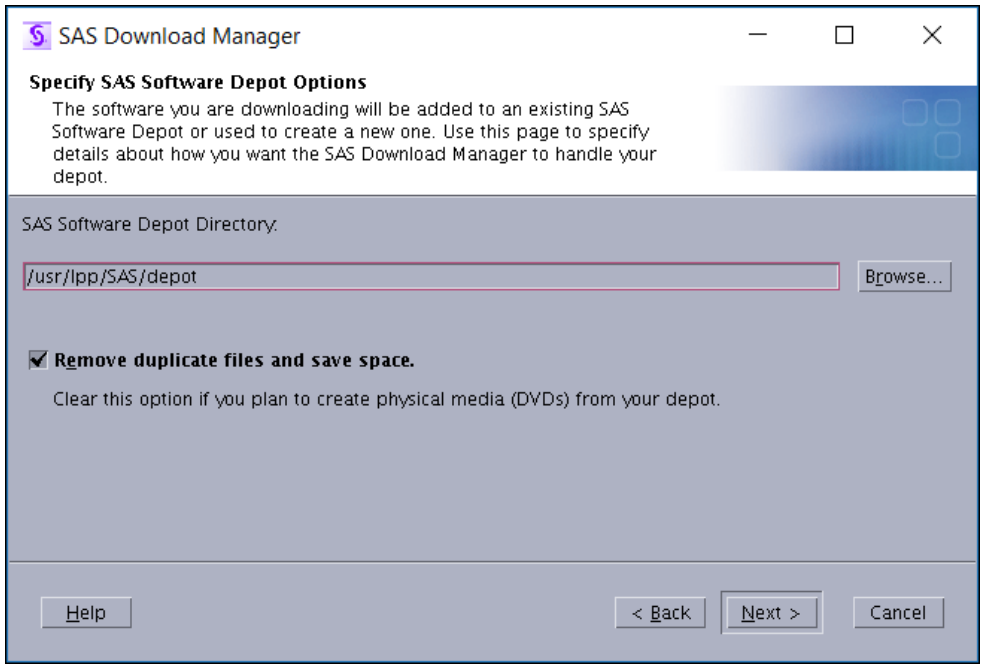
16. On the Specify Order Details window of the download manager and click **Next**.

    The Specify Order Options window is displayed.



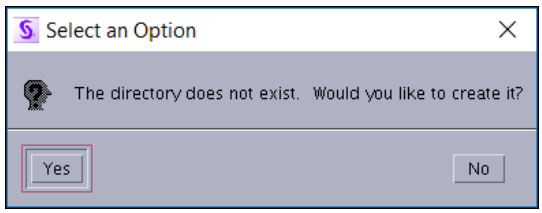
17. Make sure that **Include complete order contents** is selected and click **Next**.

    The Specify SAS Software Depot Options window is displayed.



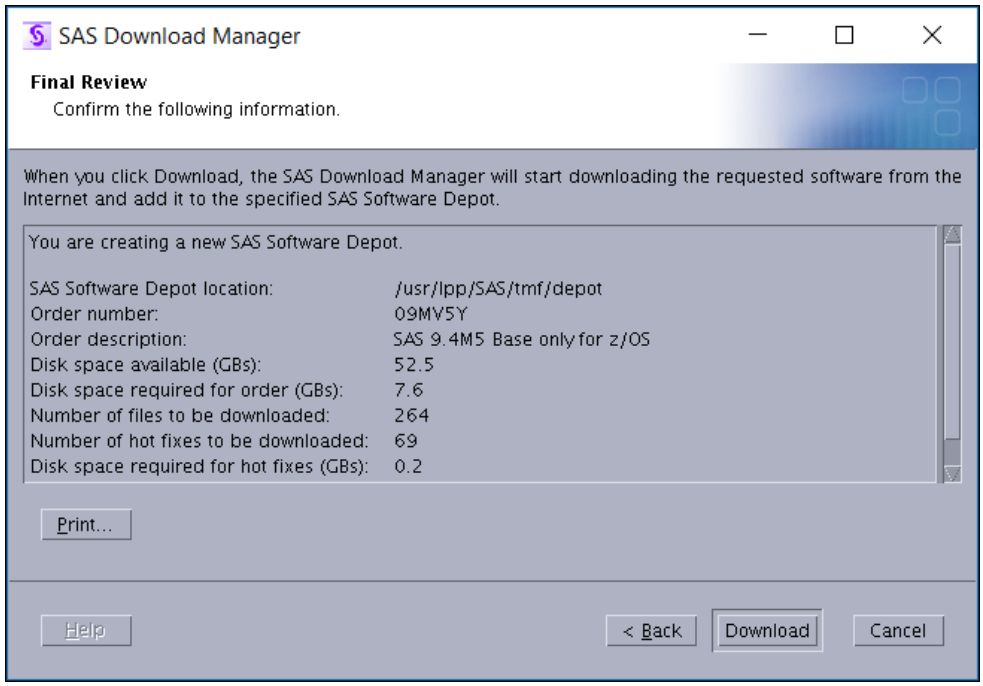
18. Enter the location (for example, **`/usr/lpp/SAS/depot`**) where you want to download your SAS Software Depot. Make sure that **Remove duplicate files and save space** is selected. Click **Next**.

    If you have not yet created the SAS Software Depot directory, you see the following alert box.



    Click **Yes**.The download manager creates the directory automatically for you.

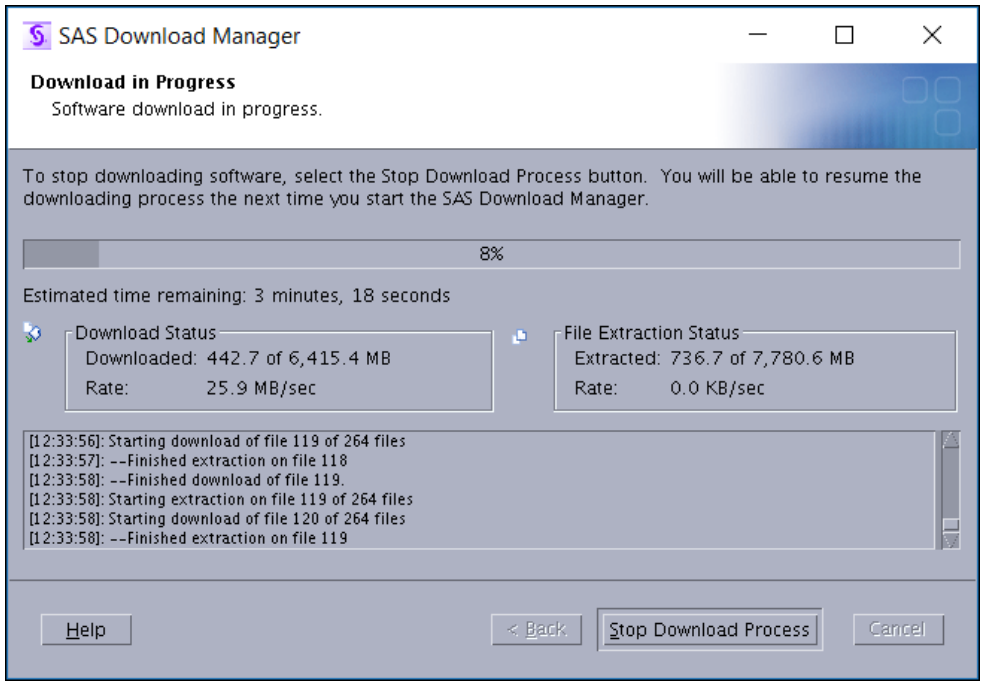
    The Final Review window is displayed.



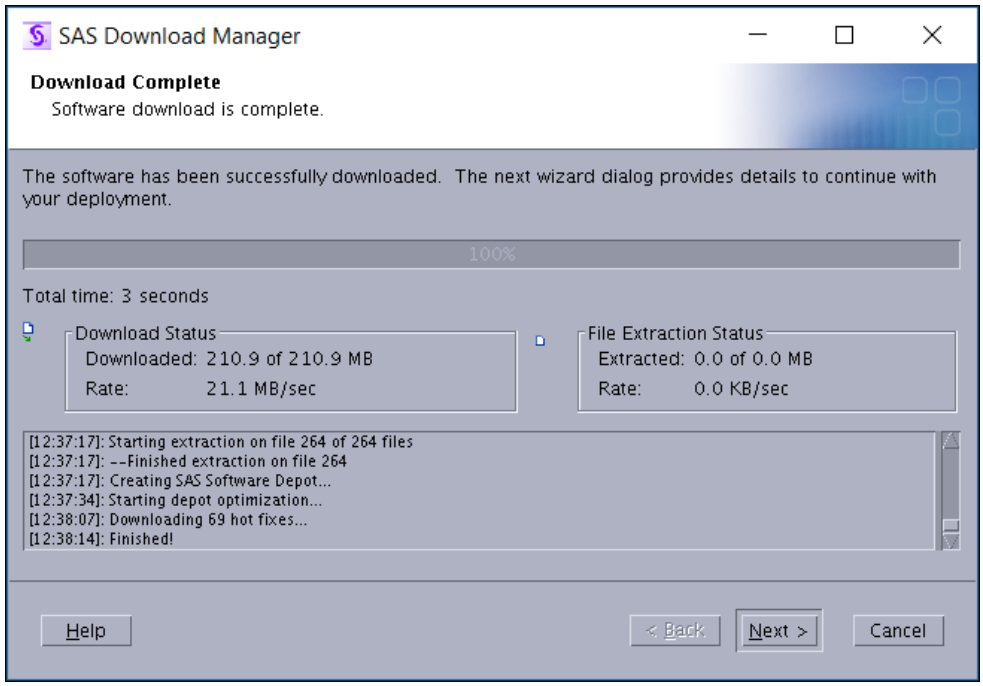
19. Review the information displayed in the window. If you want to change any choices that you made earlier, click **Back**.

    When you are ready to start your download, click **Download**.

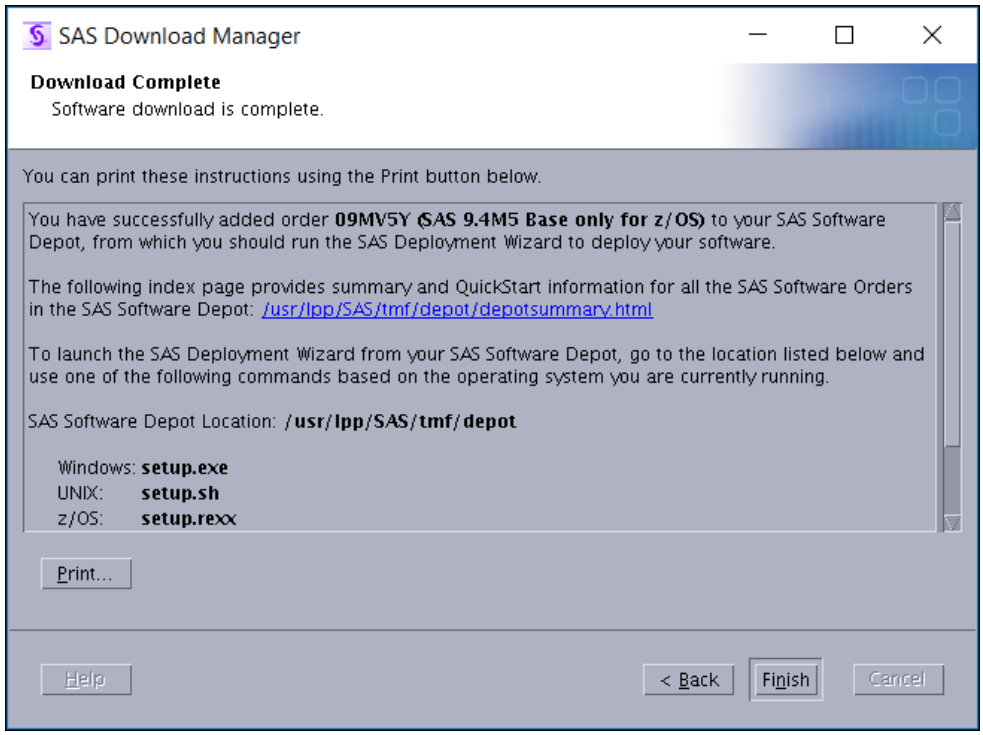
    The Download in Progress window is displayed with the estimated time it takes to complete the software download.



    Wait until the Download Complete window is displayed.



20. Click **Next**.



A second Download Complete window is displayed. It identifies the software order that you added to your new SAS Software Depot, and confirms the directory that contains your depot.

21. Click **Finish**.

22. Make sure that the SAS installation files that you have just downloaded—referred to as a SAS Software Depot—are owned by your user ID and have the correct permissions. (Your user ID is referred to as the SAS Installation user.)

In the following example, **sas** is the SAS Installation user, and **sasgroup** is the SAS installation group:

```
cd /usr/lpp/SAS/depot
chmod -R 755 .
chown -R sas:sasgroup .
```

23. If you want to verify the integrity of your SAS Software Depot, proceed to "Checking Your SAS Software Depot" on page 24.

Make Your SAS Software Depot Accessible to z/OS

If you did NOT download directly to z/OS, you must make the SAS Software Depot accessible to z/OS by either :

- NFS mount the directory on z/OS.
- Use the SAS Software Depot Copy Utility. For more information, see Moving Between Non-Shared Network Locations in *SAS Deployment Wizard and SAS Deployment Manager 9.4:User's Guide*.
- Transfer the SAS Software Depot to z/OS using a third-party utility such as FileZilla, WS-FTP, Blue Zone, and so on, that can move a complete directory tree.
  1. FTP the entire directory tree, make sure that all files are transferred in binary to a z/OS UNIX File System directory, and the case of all file names is preserved.
  2. Be sure to set the execute bits, after moving it from Windows. Execute the following command:

     chmod -R a+r+x <SAS Software Depot Location>
- If the SAS Depot is stored on UNIX, follow these steps:
  1. Create a TAR file of your existing SAS Software Depot on your UNIX machine. Execute the following command:

     tar -cvf <SAS Software Depot Location> <tar file name>
  2. FTP the TAR file created in the previous step to z/OS in binary format.
  3. Extract the SAS Software Depot on z/OS in the zFS directory where you want it to be created. Execute the following command from OMVS or rlogin:

     tar -xvf <tar file name>

     Note: The "v" option used in the command is optional. It stands for verbose and enables the information to be displayed back to the terminal about each file as it is processed.

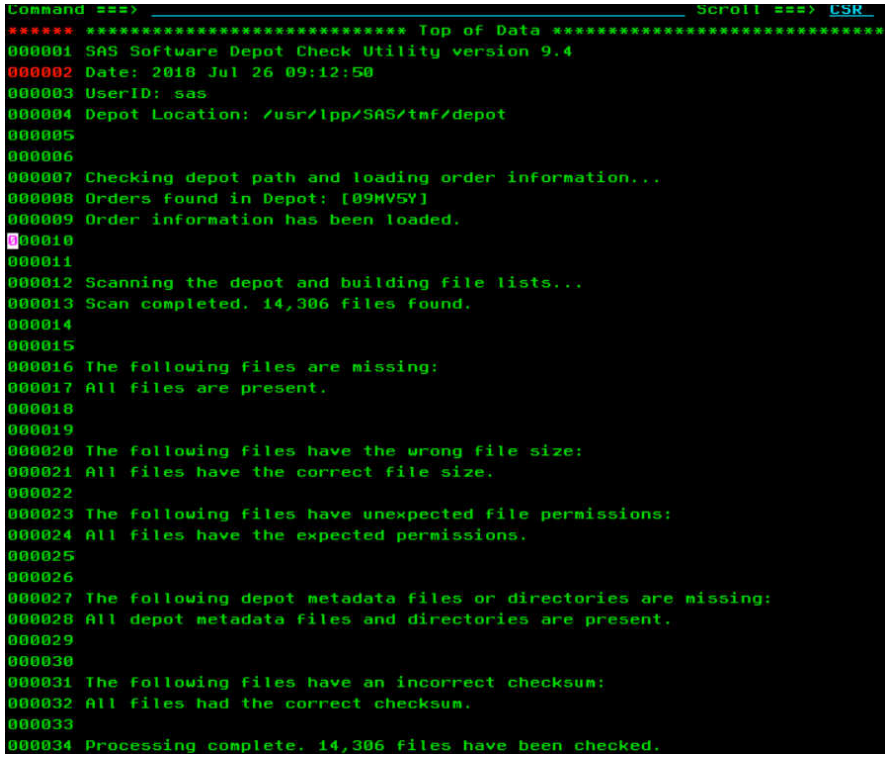
Checking Your SAS Software Depot

Overview of Checking Your SAS Software Depot

SAS provides a utility with which you can verify the integrity of your SAS Software Depot. The SAS Software Depot Checker Utility scans your depot and identifies any missing files. For each file that it finds, the depot checker attempts to validate its size, checksum, and date-and-time stamp.

The depot checker attempts to fix any problems that it encounters and lists the results of its various validation tests. You have the option of printing the results, saving them to a file, or viewing them in a web browser.

Figure 3.1 *Depot Checker Results Displayed in a Text File*



Check Your SAS Software Depot

To run the SAS Software Depot Checker Utility, follow these steps:

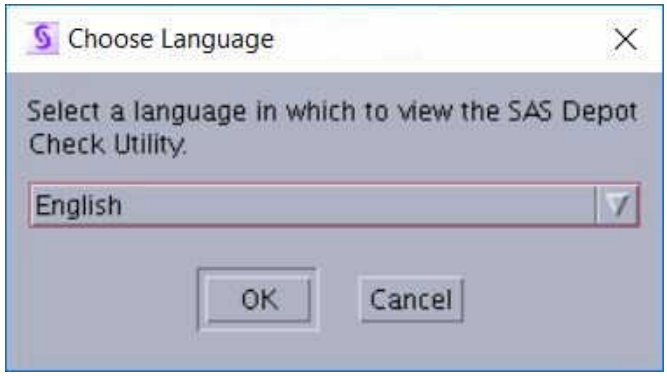
Note: It is recommended that you use the same installer user ID account with which the SAS Software Depot was created to run the SAS Software Depot Checker Utility.

1. In your SAS Software Depot, locate the **`utilities/depotchecker`** directory.
2. Enter the following command:

   `./SASDepotCheck.rexx`

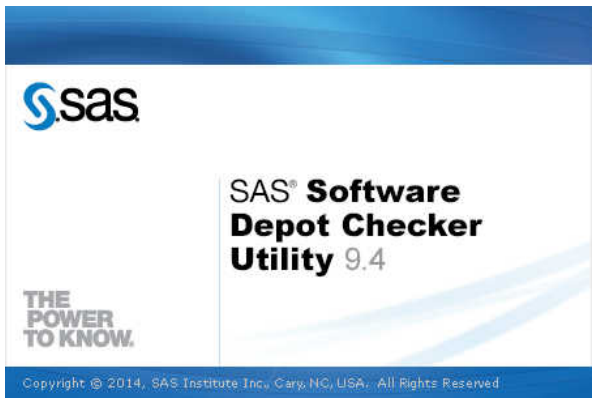
   Note: For console mode, use **`./SASDepotCheck.rexx -console`**

The Choose Language dialog box is displayed.

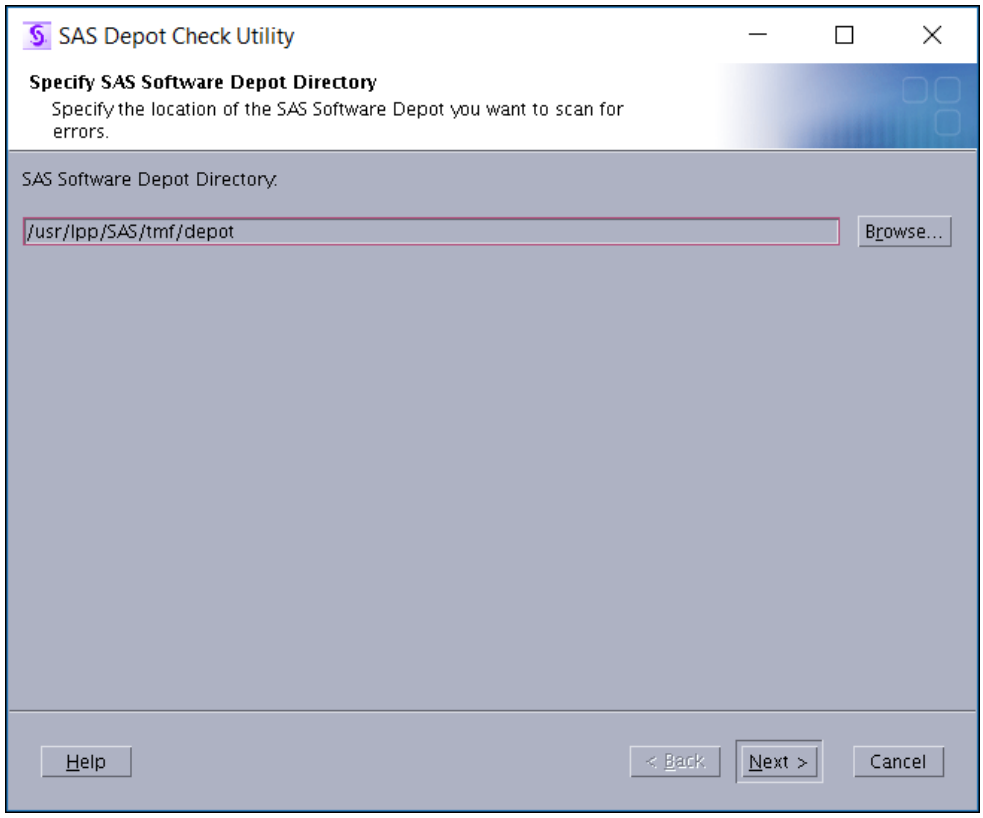


3. From the drop-down list, select the language that you want the depot checker to use when it displays text, and click **OK**.

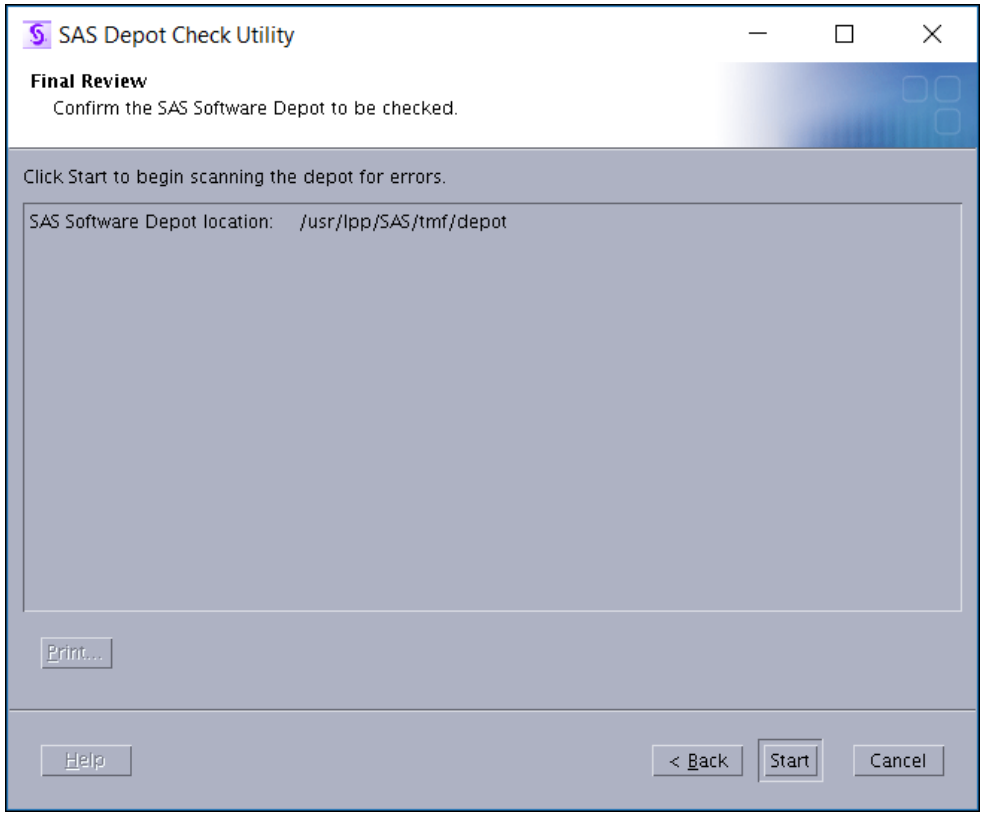
   You should see a welcome page similar to the following:



   The Specify SAS Software Depot Directory window is displayed.



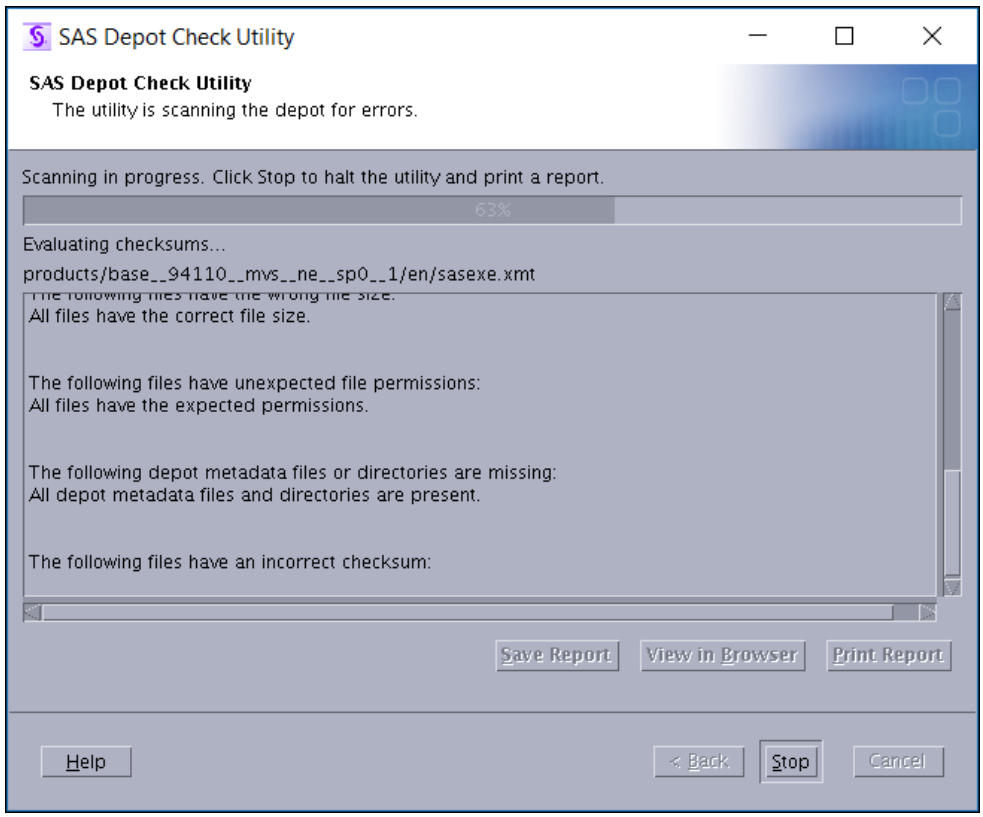
4. Make sure that the correct path to your depot is displayed in **SAS Software Depot Directory** and click **Next**.



5. On the Final Review window, click **Start**.

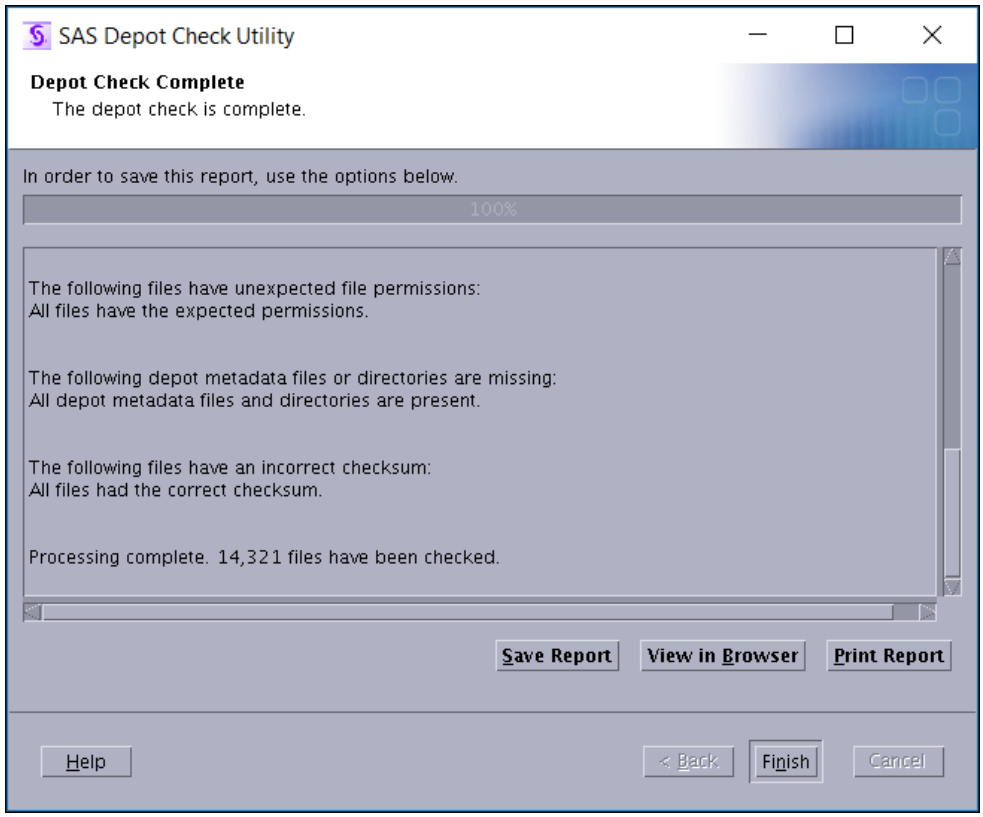
The depot checker begins scanning your depot.

The SAS Depot Check Utility window is displayed.



The time required to complete the scan depends on the size of your depot.

When the scan is complete, you see the Depot Check Complete window that is similar to the following:



6. Select one of the following options and then click **Finish**:
   - **Save Report** writes the results of the depot checker scan to a text file.
   - **View in Browser** Not available on z/OS.
   - **Print Report** prints the results of the depot checker scan.
7. Proceed to Deploying SAS Foundation on page 29 .

Chapter 4

Deploying SAS Foundation

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Install and Configure SAS for FTP Format 48

Deployment Process Overview: Step Four

This chapter describes how to use the SAS Deployment Wizard to install and initially configure SAS.

Installing and configuring SAS is the fourth of five steps in deploying SAS Foundation.

1. Complete the Pre-Installation Checklist.
2. Set up a SAS profile.
3. Create a SAS Software Depot.

⇨ **4. Install SAS.**

5. Validate your SAS deployment.

Deploying SAS Foundation

Before you begin installing the SAS Foundation software, be sure to do the following:

- Do not log on to z/OS as a superuser (also called “root” or “UID(0)”).
- The SAS Deployment Wizard must run using the same user ID and must have the same requirements that are specified in Pre-Installation Checklist on page 3.
- You must stop all SAS servers and processes before updating your installation (if you are adding new software and maintenance to the existing installation).

Install and Configure SAS

You install and initially configure SAS by running the SAS Deployment Wizard. By default, the wizard runs using a text-based interface, creates installation batch jobs but does not execute them. Before you start the SAS Deployment Wizard, decide whether to use a graphical user interface (X11 Server required) or a text-based interface.

1. Make sure that you have completed the Pre-Installation Checklist on page 3.
2. Log on to your machine as the SAS Installer user (for example, sas).

   This can be your regular account, but you must use this same account in the future if you want to add, modify, or remove SAS software.
3. Change to the location where the SAS installation files (referred to as the SAS Software Depot) were downloaded (for example, **`/usr/lpp/SAS/depot`**).

   Note: Invoke the SAS Deployment Wizard on your z/OS system using OMVS, rlogin, or putty. You cannot execute it from ISHELL.
4. Below are the two ways to invoke SAS Deployment Wizard.

   Using text-based interface:

   - When you run the SAS Deployment Wizard in the default text-based (console) mode to perform a deployment without a graphical display, ensure that the DISPLAY environment variable is not set.

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

     Note: The window screens that would have been displayed in graphical interface are represented in text now. During execution in text mode, if you are instructed to enter a sequence that includes angle brackets, such as “Enter <q> to quit” , you must include those symbols.

   Using graphical interface:

   - Requires X11 server.
   - Set the DISPLAY environment variable to point to your X11 server. Run this command from the z/OS UNIX shell:

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

     Note: **`setup.rexx`** will prompt you for the server name if the server name is not specified in the command. Make sure that the X11 server is started on your workstation before starting the install.

   By default,

   - SAS Deployment Wizard will create the installation batch jobs but does not submit them.

- SAS install jobs are chained.

Use the -nojobchain option if you want to manually submit each job in sequence. The nojobchain option is ignored if -jobsubmit option is specified.

If -jobsubmit is specified, the SAS Deployment Wizard will do the following:

a. Assign the same job name xxxxxxA to each job that is submitted automatically, where xxxxxx is assigned the SAS installer user ID "A" as a suffix.

b. Use the FTP JES interface to track the progress of each job and to determine their completion status.

In SAS 9.4 (TS1M4), Rev. 940_17w08 and later, the SAS Deployment Wizard will do the following when -jobsubmit option is used.

- No longer prompt for the host name, user ID, and password.
- Enables you to use the –jobsubmit option with both JES2 and JES3.
- Allows the job name to be any valid job name you choose.

Prior to SAS 9.4 (TS1M4), Rev. 940_17w08, if any of the following conditions are true, you cannot use the -jobsubmit option. Therefore, the installation jobs should be submitted manually.

- your site uses JES3 (not JES2)
- your FTP server is configured for JESINTERFACELEVEL=2
- the SAS installer user ID is not authorized to use FTP
- the FTP JES interface's job name requirement is incompatible with your site's job name requirements

Examples:

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

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

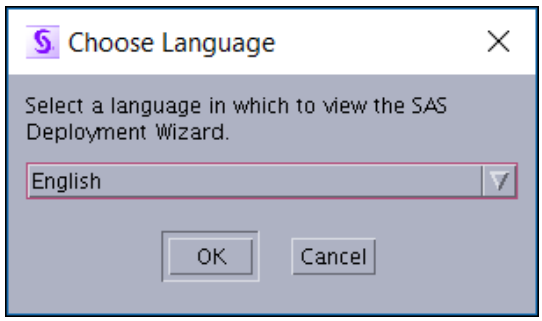
- To submit the jobs manually after the SAS Deployment Wizard completes:

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

- To submit the jobs manually and specify that they are not chained after the SAS Deployment Wizard completes:

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

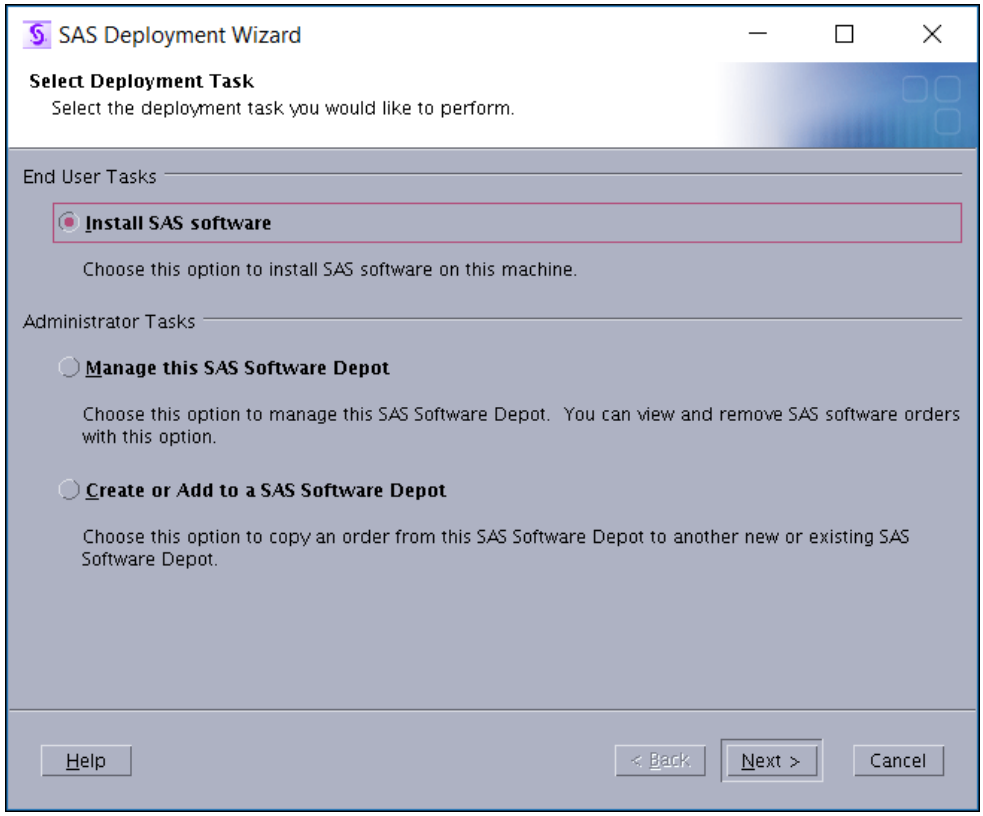
5. The Choose Language dialog box is displayed.



6. Select the language that you want the SAS Deployment Wizard to use when it displays text, and click **OK**.

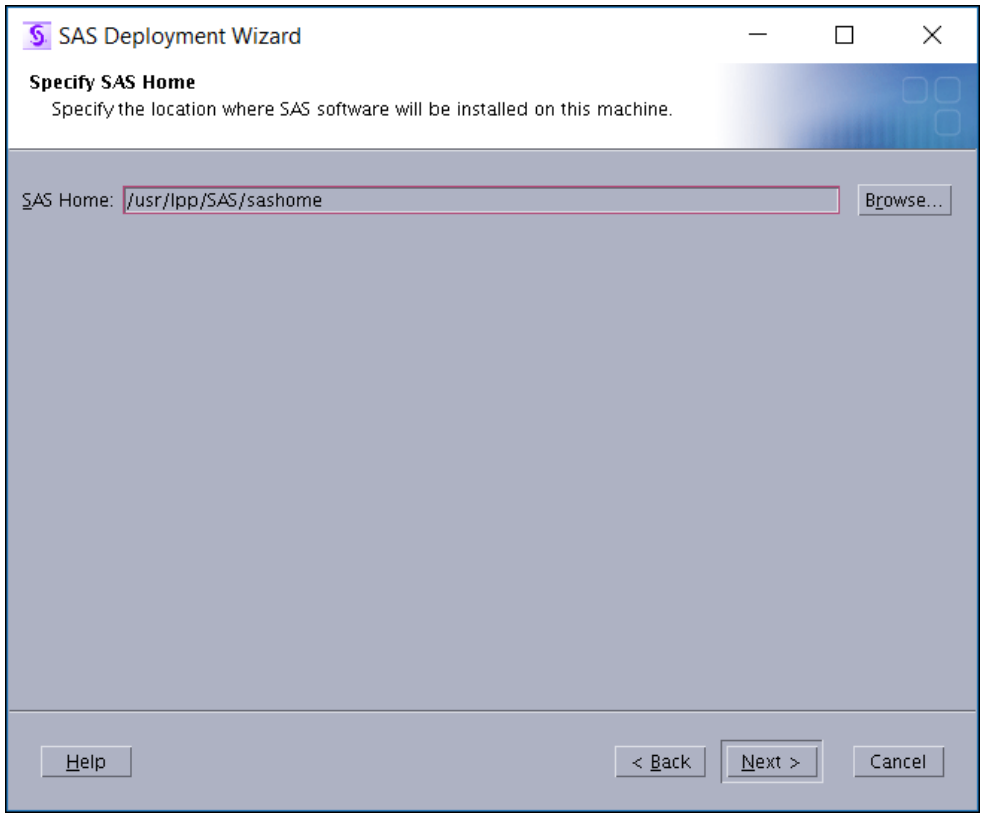
The deployment wizard splash screen is displayed.

Next, the Select Deployment Task page is displayed.



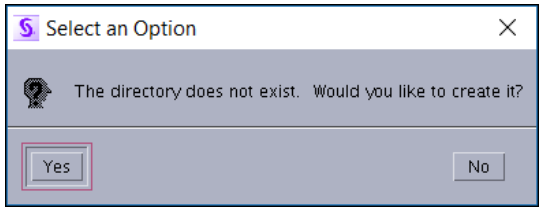
7. Make sure that **Install SAS Software** is selected, and click **Next**.

   The Specify SAS Home page is displayed.



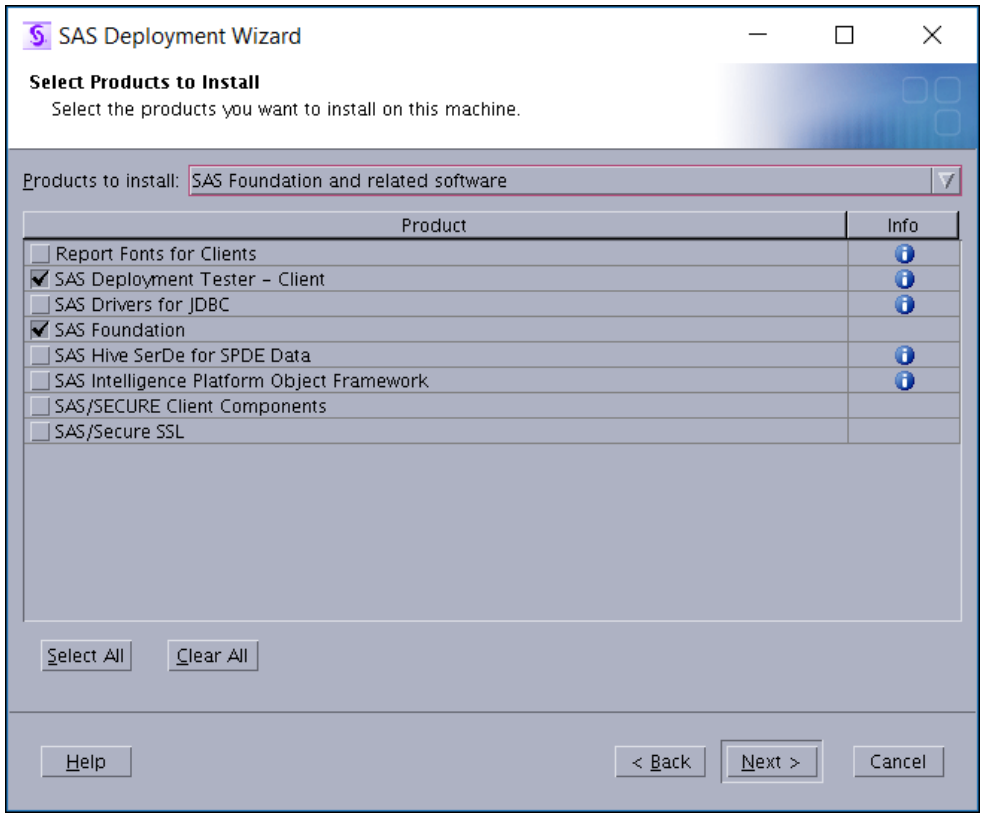
8. Enter the path where you want the deployment wizard to install SAS (for example, **`/usr/lpp/SAS/sashome`**). Click **Next**.

   If you have not yet created the SAS installation directory, you see the following alert box.



   Click **Yes**, for the deployment wizard to create the directory automatically for you.

   The Select Products to Install page is displayed.

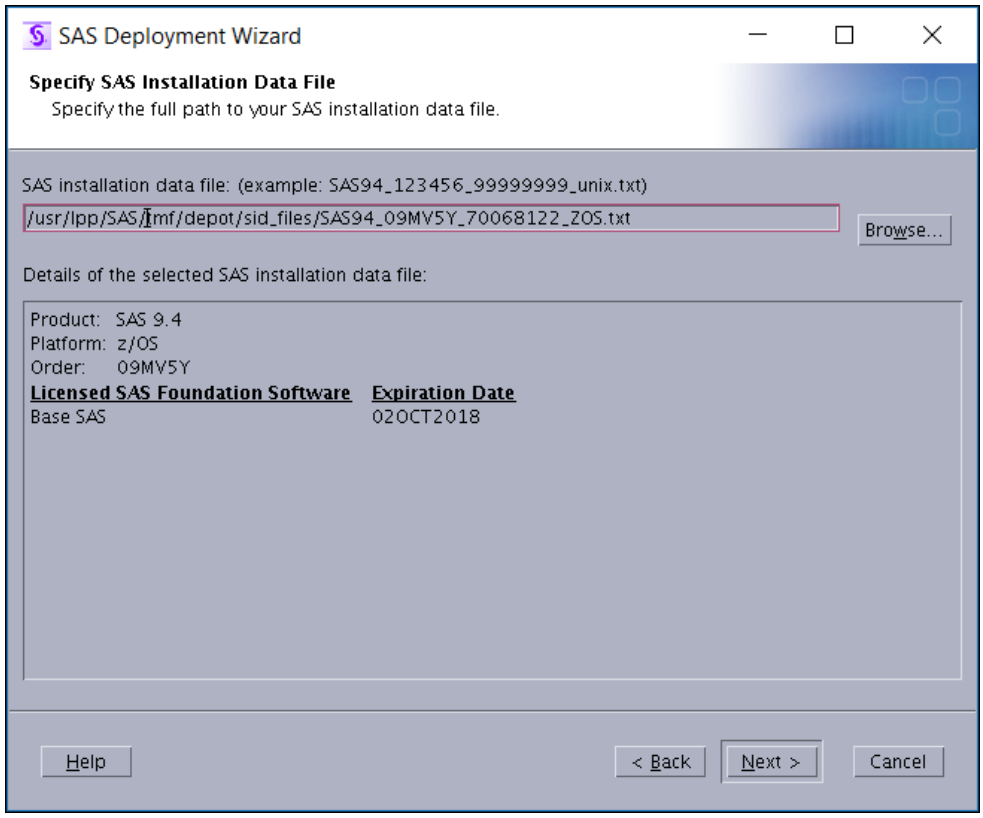


9.

TIP We recommend that you do not change the default settings on this page.

10. Click **Next**.

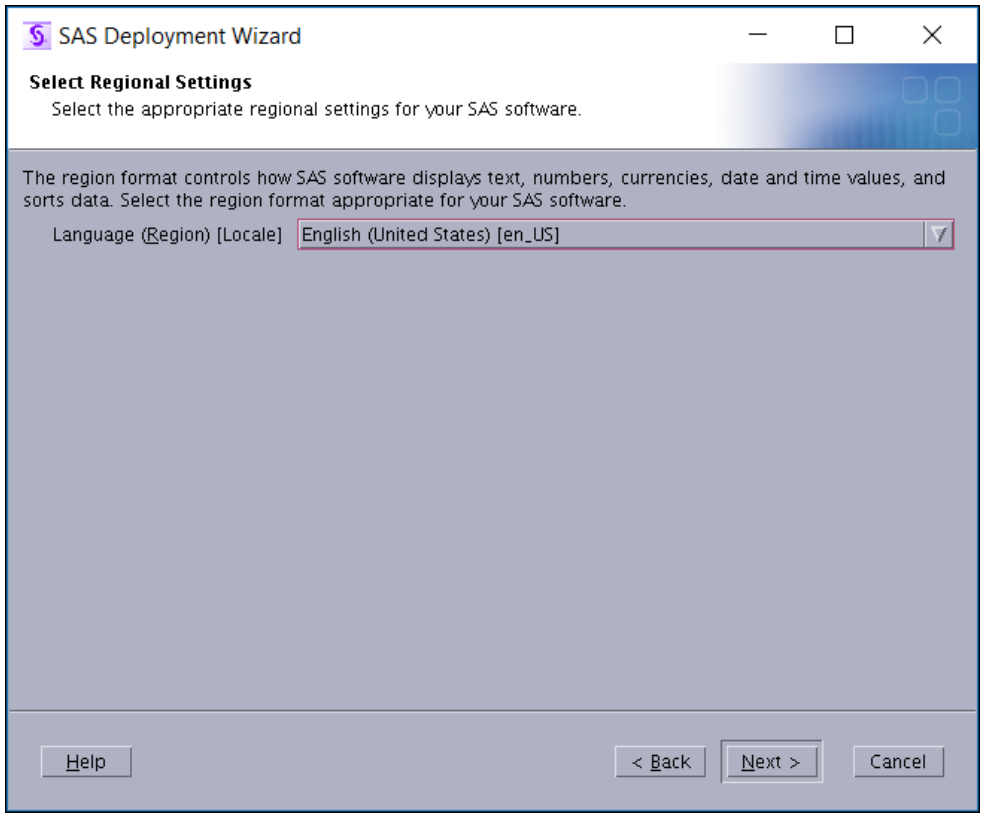
    The Specify SAS Installation Data File page is displayed.



11. If your order has more than one SID file, be sure to select the one that includes the SAS Foundation products that you want to install.

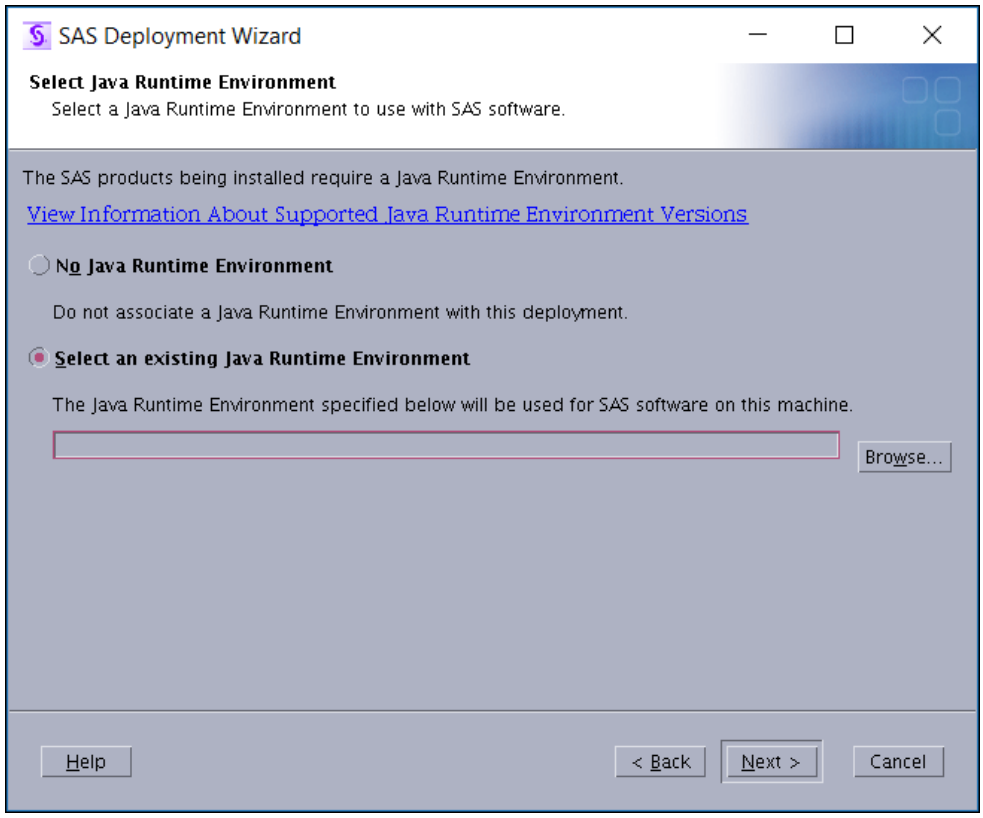
    Click **Next**.

    The Select Regional Settings page is displayed.



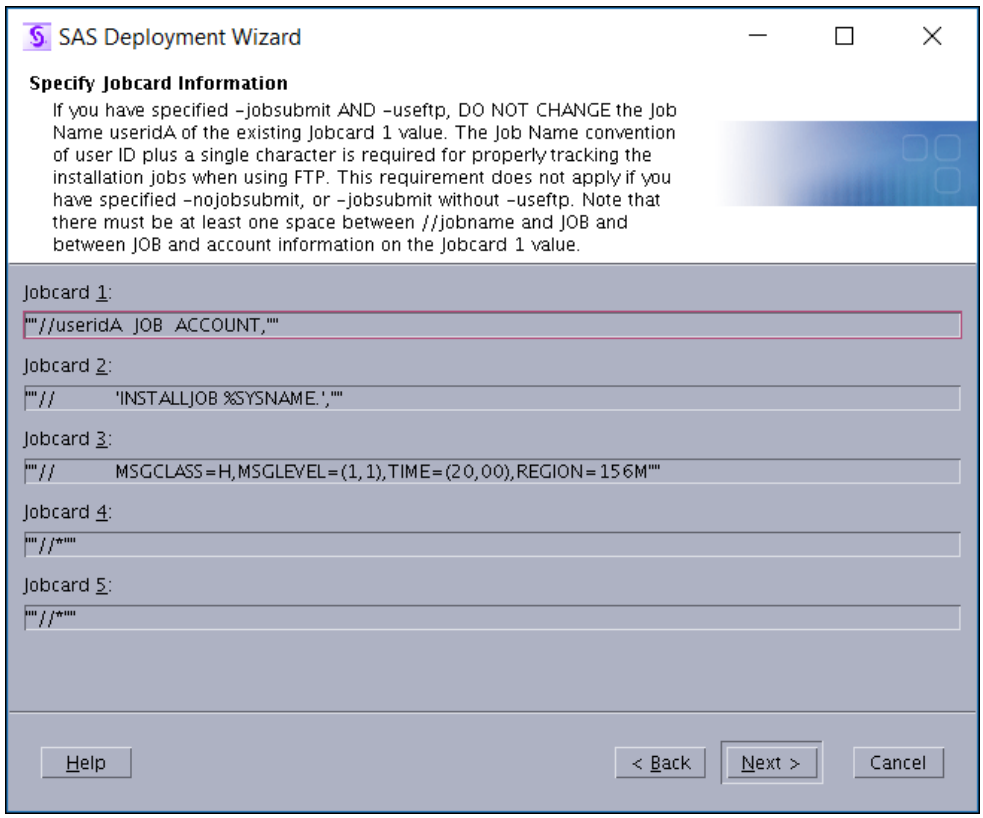
12. Select the language, region, and locale settings that affect how SAS displays text, numbers, currencies, dates, and times and how SAS sorts data. Then click **Next**.

    The Select Java Runtime Environment page is displayed.



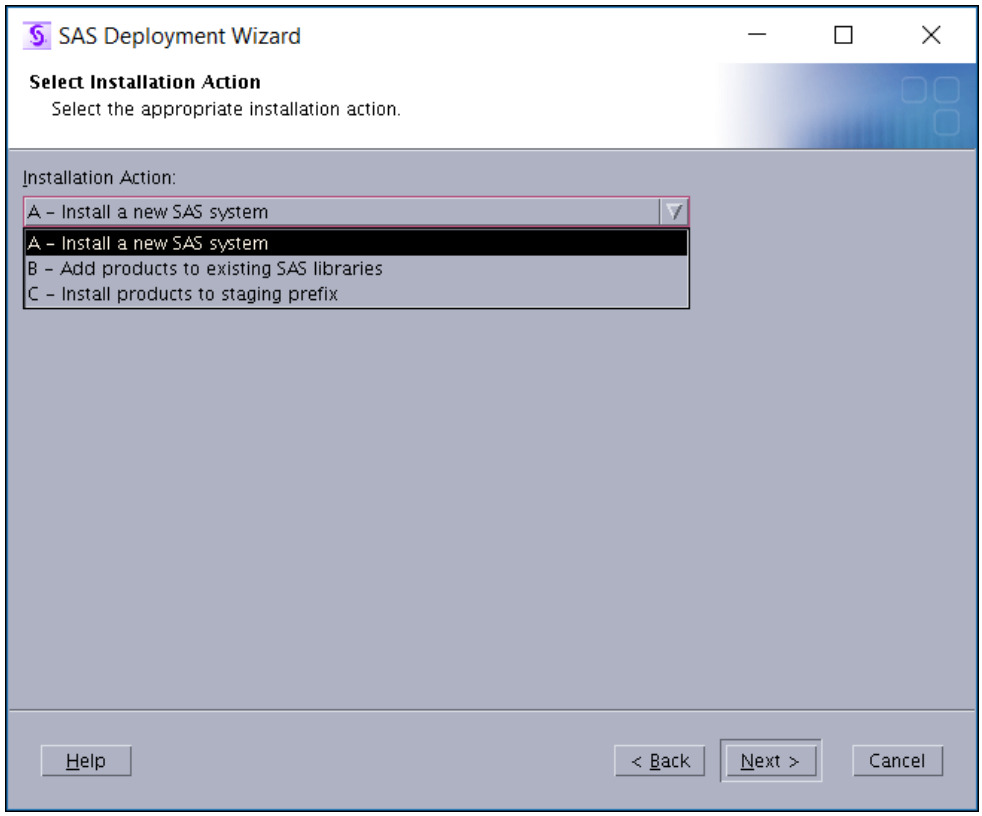
13. Select the **Select an existing Java runtime Environment** and enter your Java path (for example: **`/usr/lpp/java/J7.1`**). Then click **Next**.

    The Specify JOBCARD Information page is displayed.



14. Specify the JOBCARD information and click **Next**.

    The Select Installation Action page is displayed.



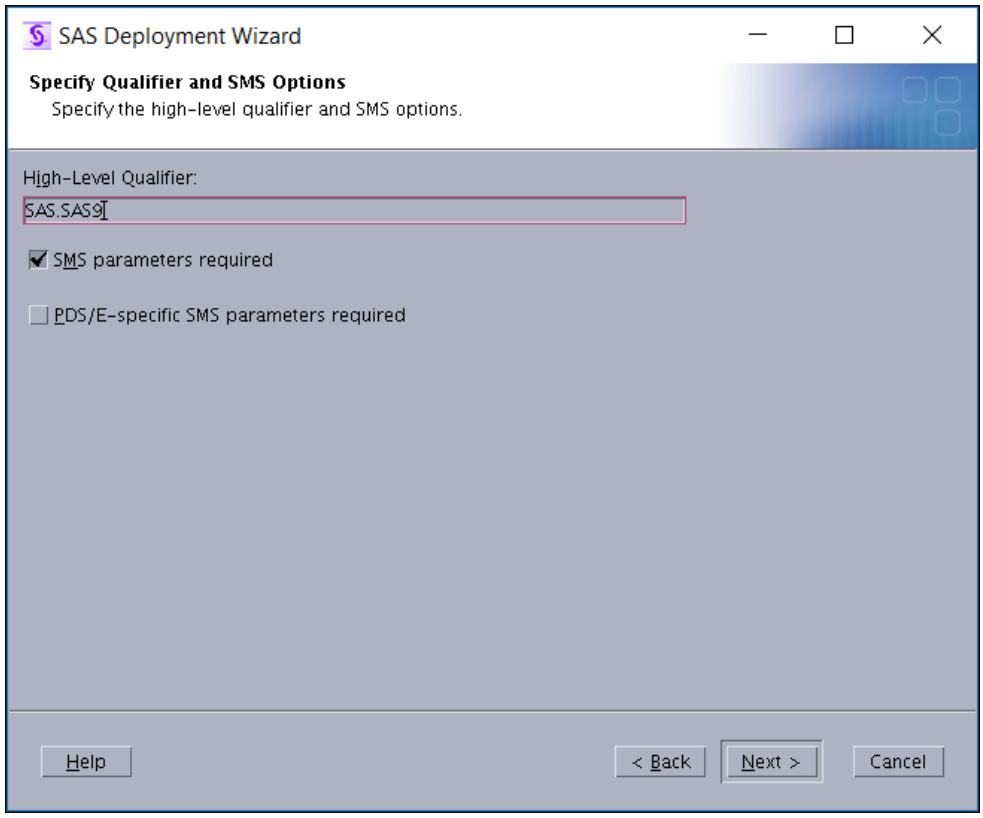
15. Select appropriate Installation Action

    - Select **A**, if SAS 9.4 is not installed on your system
    - Select **B**, if you are installing new products or maintenance updates to your existing SAS 9.4 libraries and directories.
    - Select **C**, if you are installing new products or applying maintenance updates to the staged libraries, which enables you to test before copying the updates to production.

      Note: SAS Deployment Wizard has to be invoked twice if you are installing both, new products, and maintenance updates.

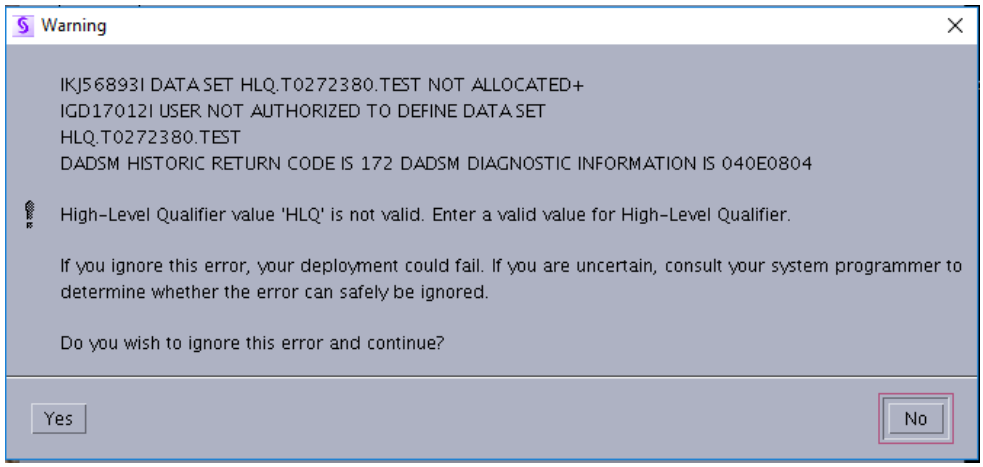
    Click **Next**.

    The Specify Qualifier and Storage Management Subsystem (SMS) Options page is displayed.



16. In the next three steps, the user is prompted to enter parameters that are needed to create data sets. Validation is done at every step to verify whether the parameter entered by the user is valid. The validation enables the user to understand if the installation will be successful. The user does not have to wait for the entire install to run and fail during post-install processing.

    For example, if the **High-Level Qualifier** parameter value is invalid, a warning message is displayed. You can ignore the warning and click **Yes** to continue with the installation (with the risk that post-processing might fail) or click **No** to return to the prompt and try a different value. You can consult your system administrator and decide to perform any one of the actions.



    There is a possibility of customizing z/OS system environment in many different ways. The limitations of the validation tests that account for all these customized environments might not return correct results. The system administrator can verify whether each of the parameters are valid in their environment. If they are not valid,

they can be bypassed by ignoring the warning message. The entire validation process can also be bypassed by using **-nozosprecheck** option during the invocation of **setup.rexx** script.

For more information, see Data set Allocation Requirements in *System Requirements for SAS® 9.4 Foundation for z/OS*.

17. Specify the high-level qualifier

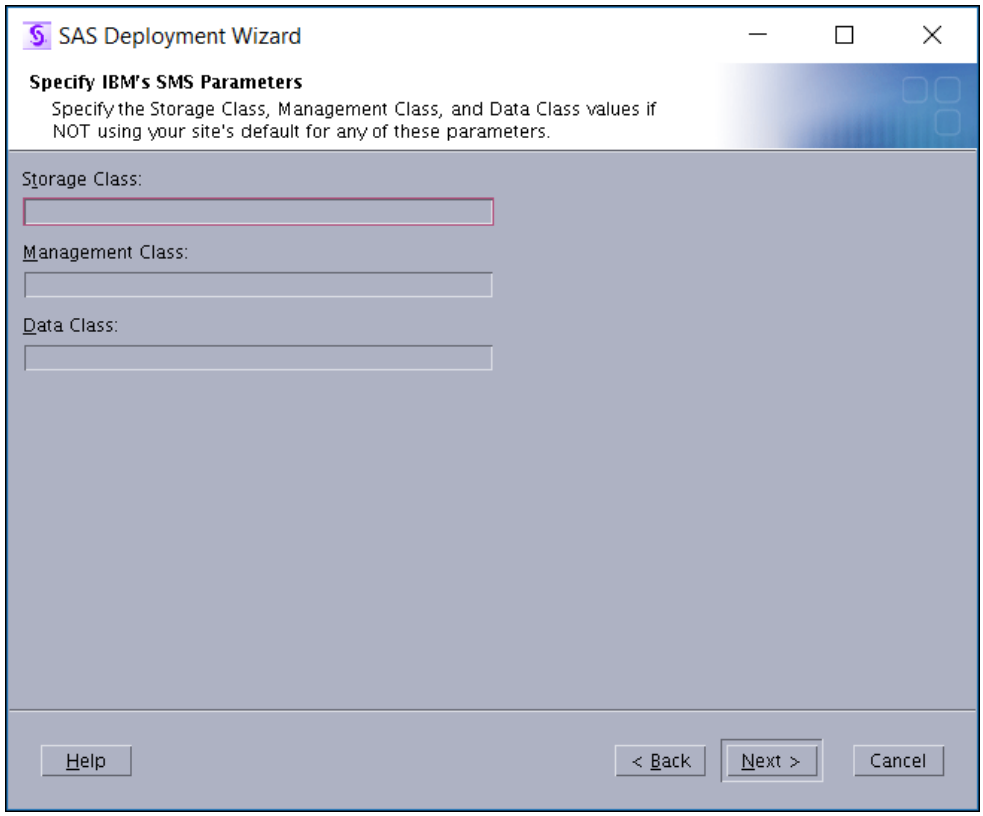
    If you have selected the Installation Action B or C :

    - you must use the same high-level qualifier that you specified during the original installation.
    - additional temporary cylinder space is required.

      Refer to https://support.sas.com/en/documentation/system-requirements.html, select your Current Release of SAS and then select *System Requirements for SAS 9.4 Installation on z/OS*. Once the installation is completed, this temporary space is released back to the system.

    Click **Next**.

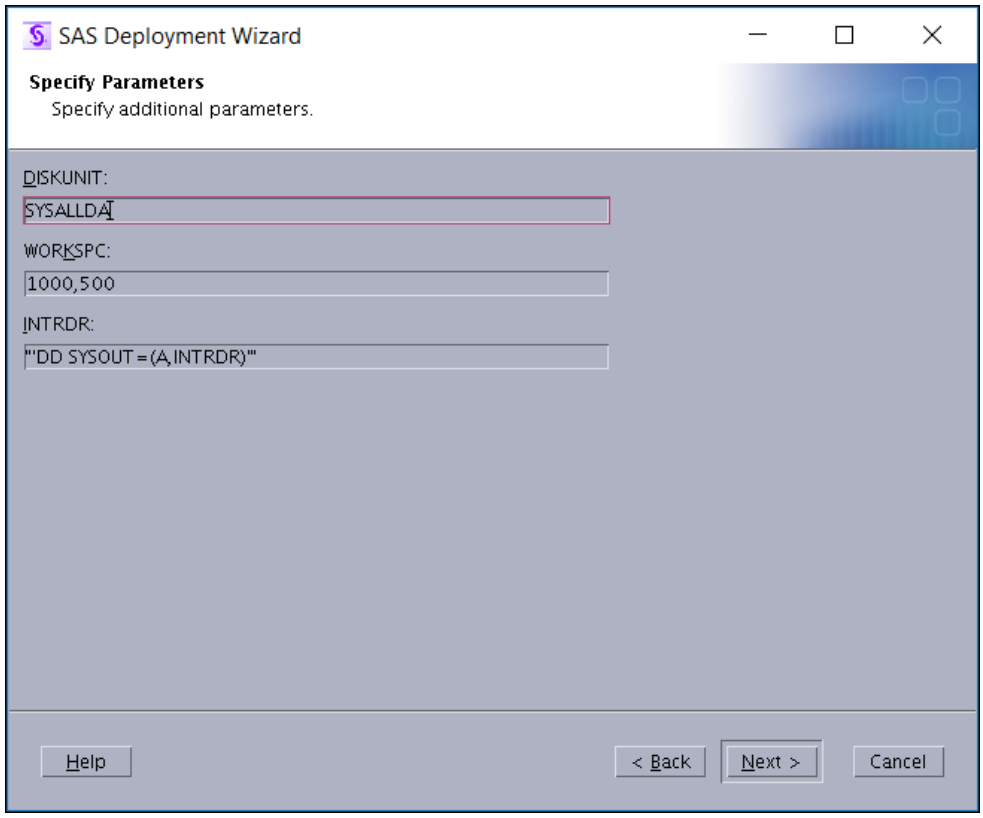
18. The Specify IBMs SMS Parameters page is displayed.



    Specify the respective values, if you are not using your site's default values for any of these parameters.

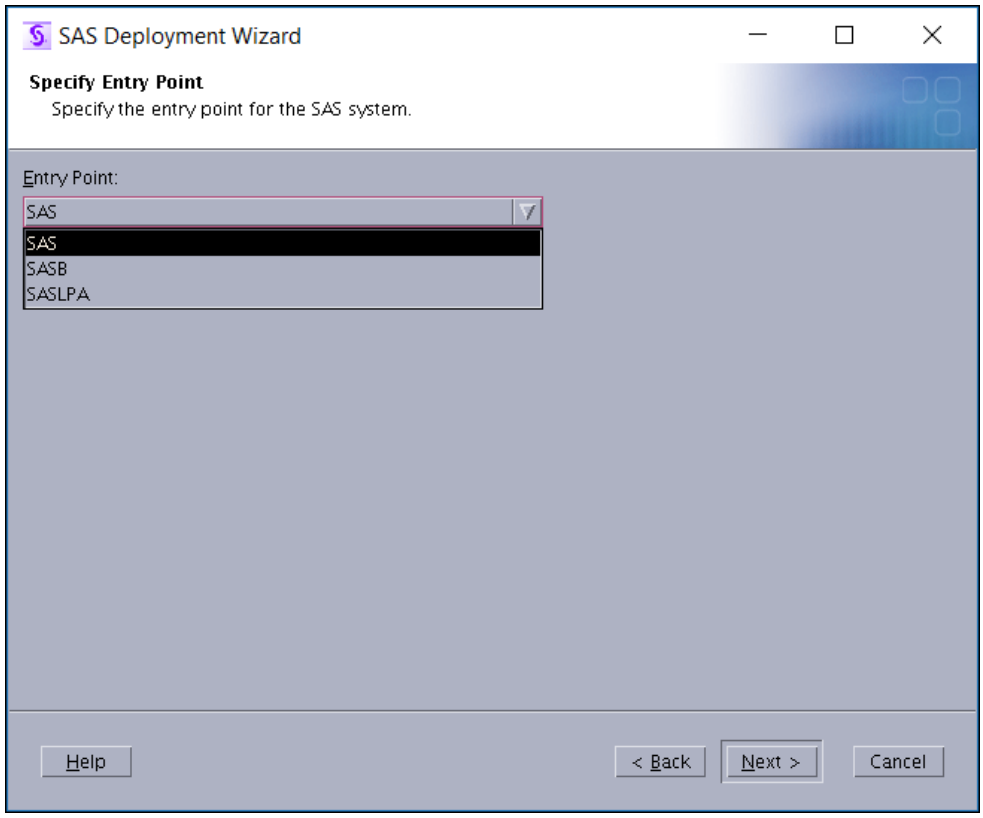
    Click **Next**.

19. The Specify Parameters page is displayed.



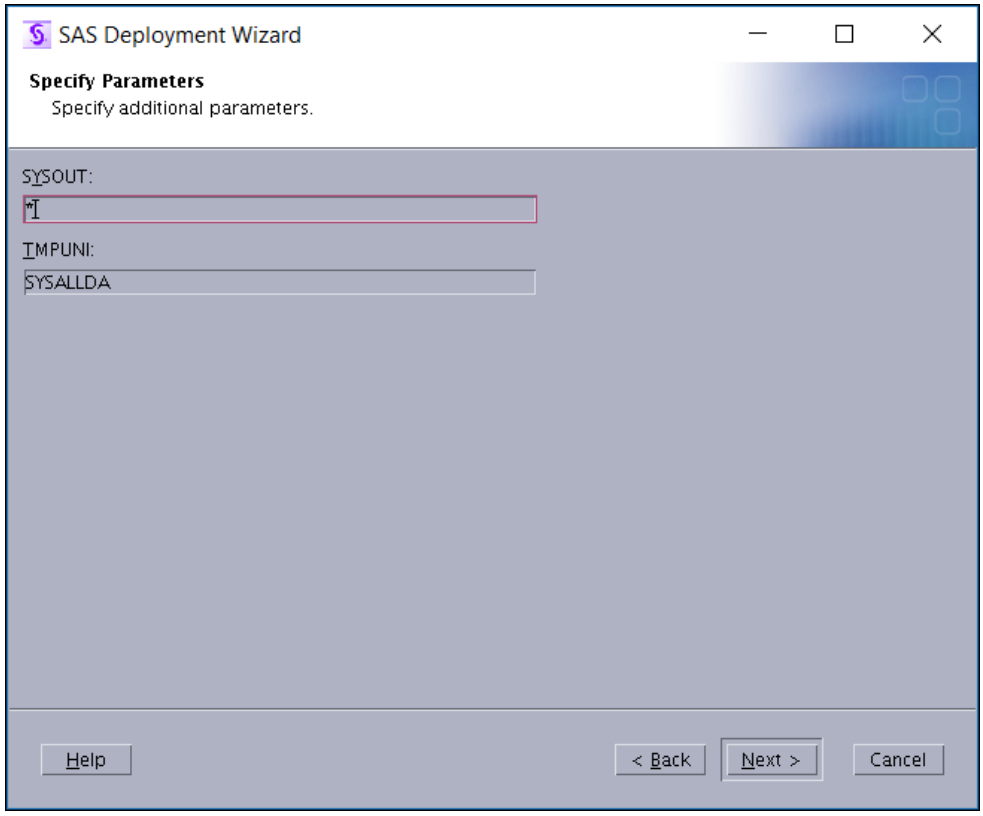
Specify the additional parameters and click **Next**.

20. The Specify Entry Point page is displayed.



SAS recommends keeping the default of "SAS" selected and click **Next**.

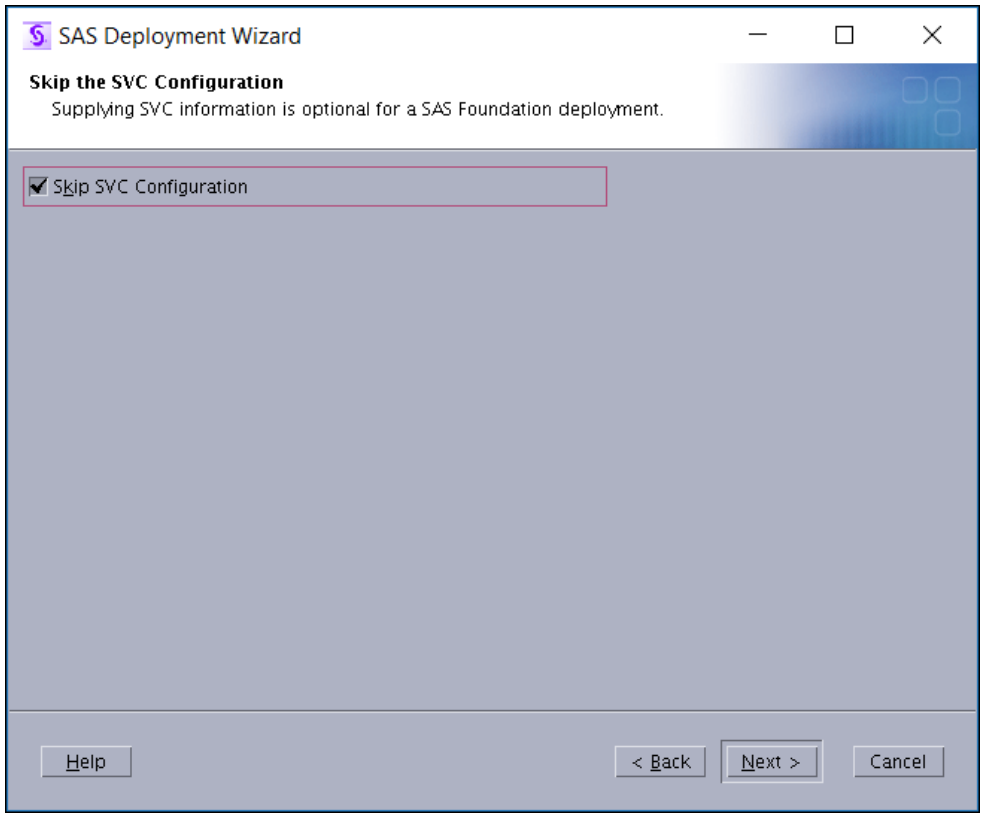
21. The Specify Parameters page is displayed.



Specify SYSOUT class for installation jobs and name of the temporary storage unit to be used.

Click **Next**.

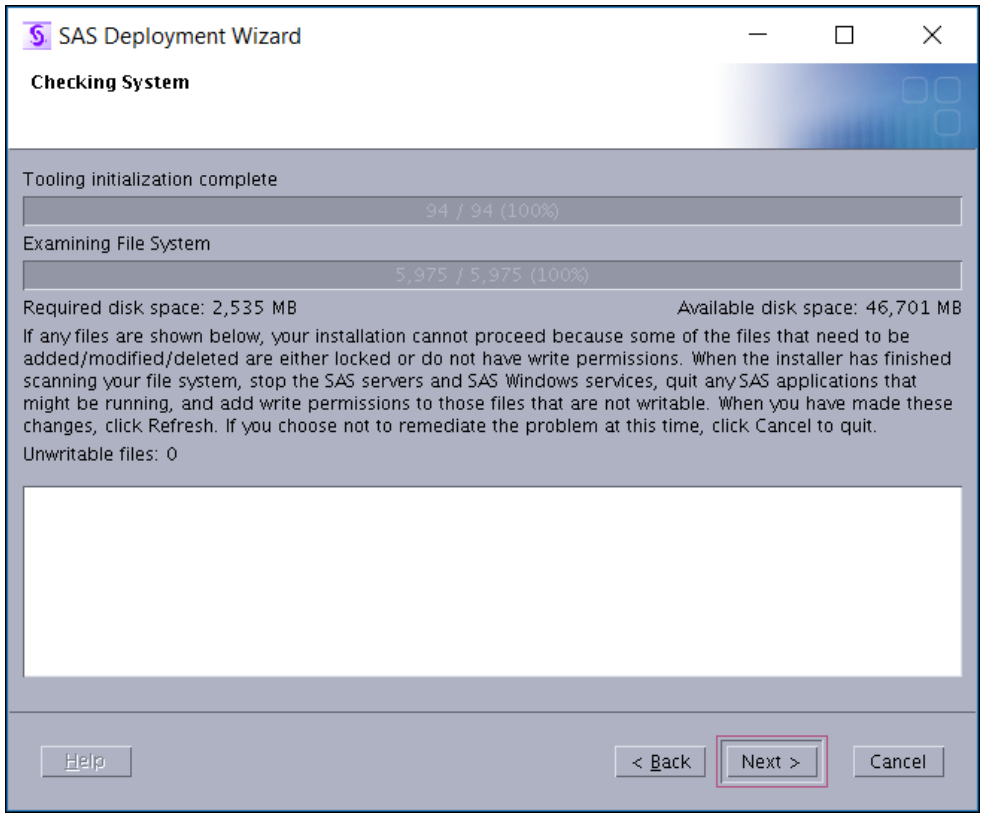
22. The Skip the SVC Configuration page is displayed.



By default, **Skip SVC Configuration** is checked. Decide whether you want to skip or install SVC.

Click **Next**.

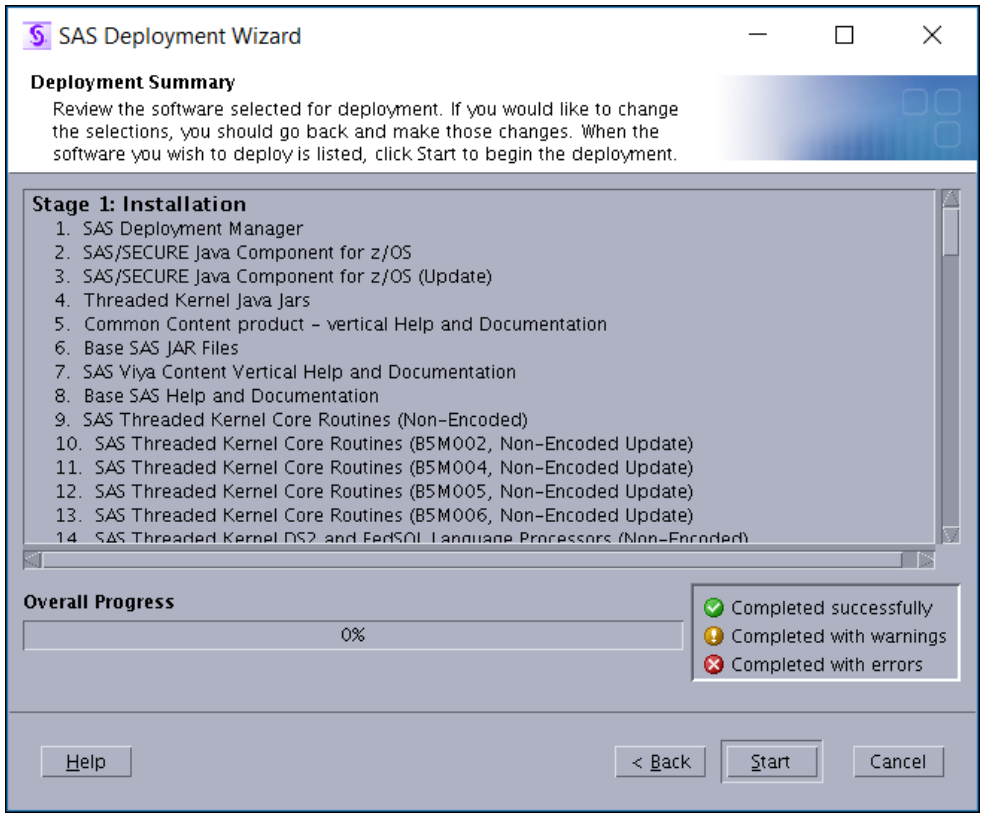
23. The deployment wizard scans your machine to determine whether any pre-existing SAS files are locked or do not have Write permission. The wizard also checks whether there is adequate disk space to install SAS.



24. When the scan is completed, if no action is required, click **Next**.

    If the wizard lists any files in the text box, then while the wizard is running, add Write permission to the files listed, or clear the lock on any affected files. When you finish, click **Next**.

    The Deployment Summary page is displayed.

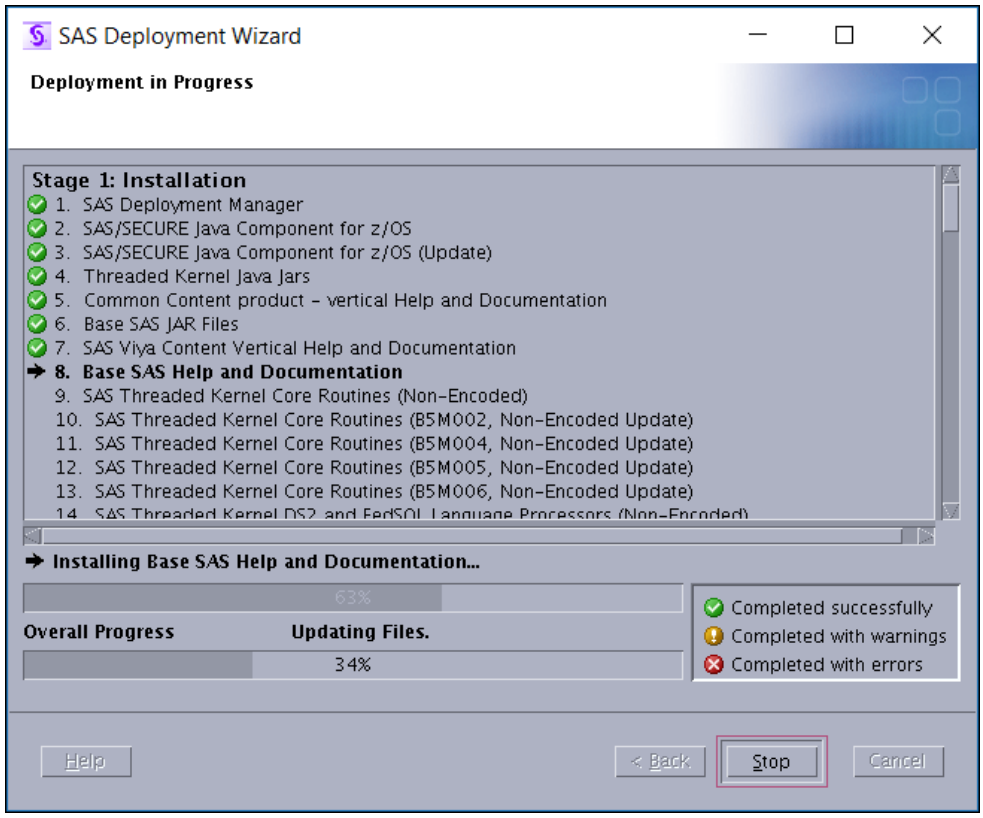


25. Review the summary of the software, the deployment wizard will install.

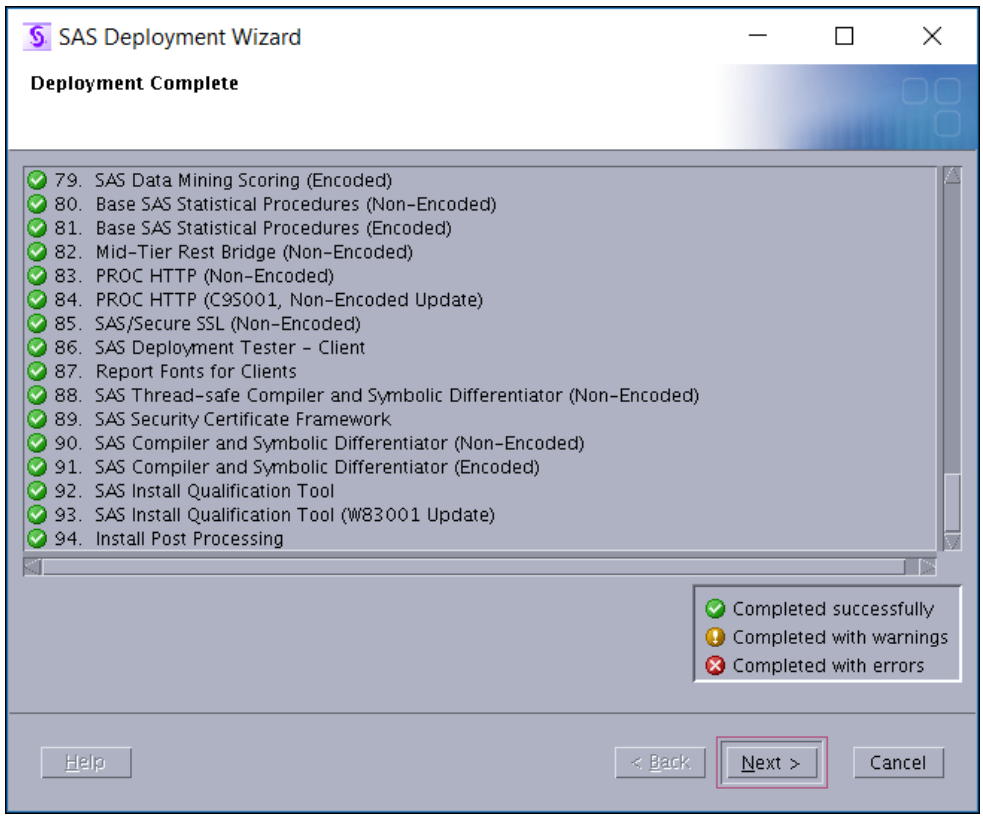
    This is the last opportunity to go back and change any information that you have provided in previous pages before the wizard begins installing SAS. Make one of the following choices:

    - Click **Start** to begin installing SAS files. The deployment wizard launches the installation and provides an ongoing status update.
    - Click **Back** to navigate to earlier wizard pages to change installation information previously entered.
    - Click **Cancel** to terminate the wizard session. Note that you will lose installation information previously entered.

    If you click **Start**, the Deployment in Progress page is displayed.



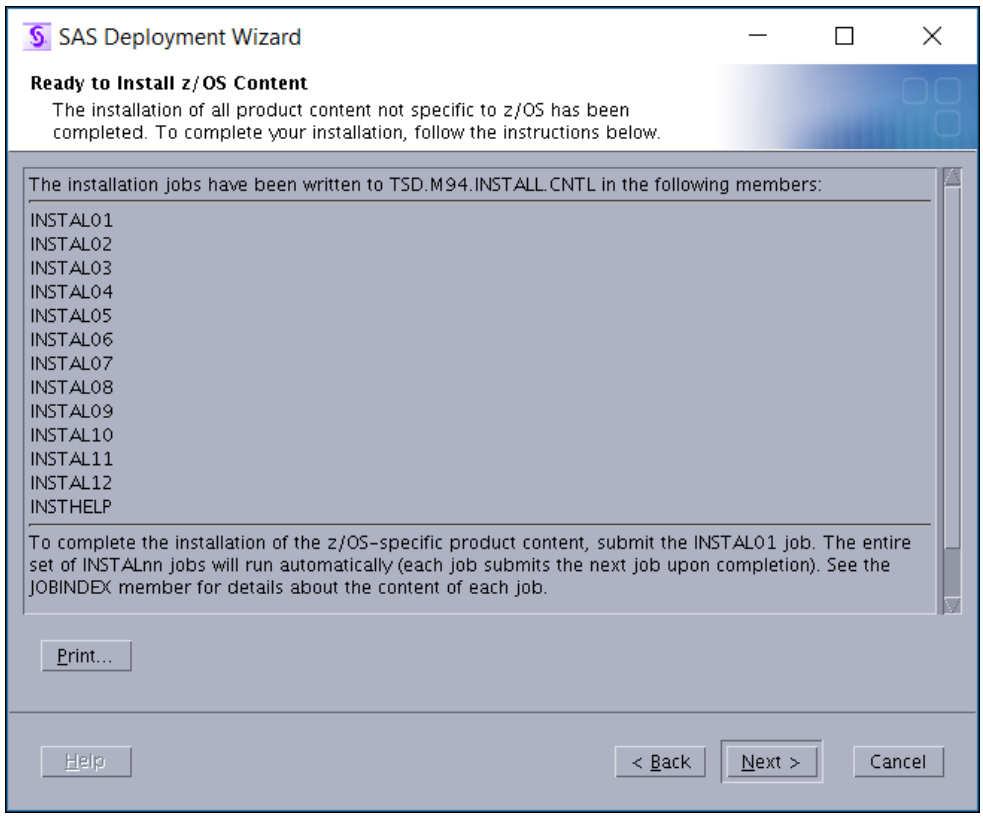
When the deployment wizard has finished installing SAS, the Deployment Complete page is displayed.



26. The Deployment Complete page displays the installation results for each SAS product.

- Green check marks next to every item on this page indicate that each stage completed successfully. Click **Next**.
- If you received errors during your installation, review Troubleshooting a SAS Deployment on page 61 .

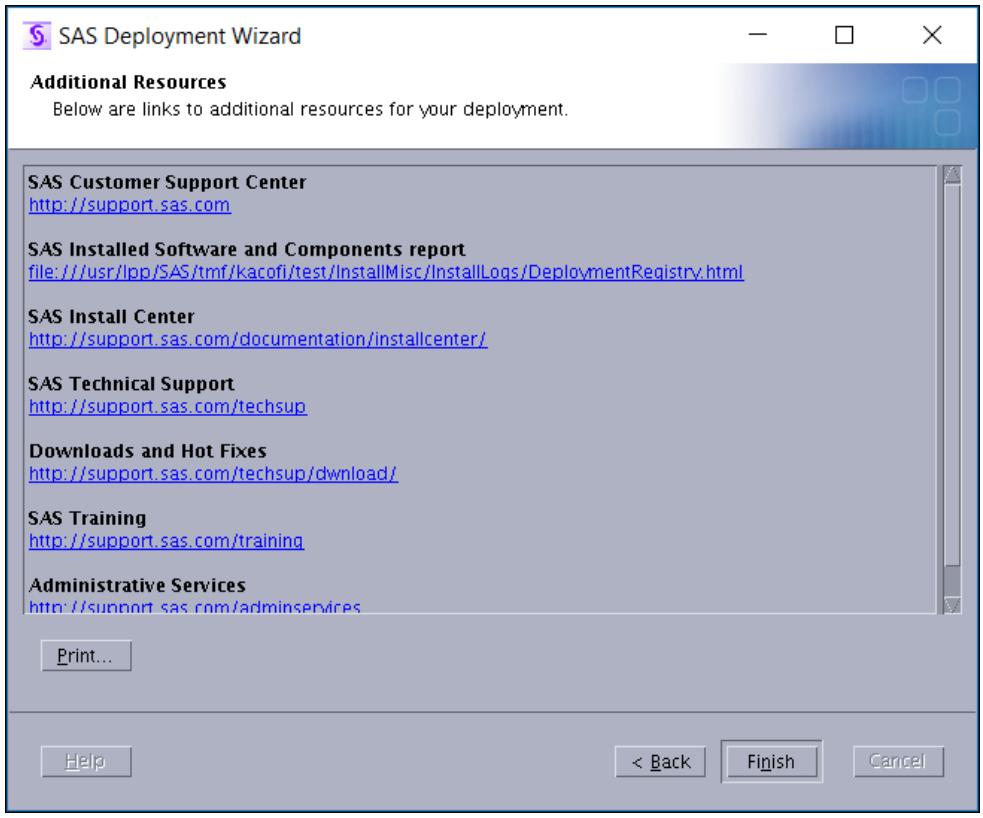
The Ready to Install z/OS Content page is displayed.



Note: If you are adding a new order to an existing Installation (ACTION B or C), the jobs listed in the JOBINDEX will be named MAINT01 - MAINTnn jobs.

Click **Next**.

27. The Additional Resources page is displayed.



28. Click **Finish** to close the SAS Deployment Wizard.
29. To complete the installation of the product content specific to z/OS , submit the INSTAL01 - INSTALnn jobs.

    Note: See the JOBINDEX member in <HLQ>.INSTALL.CNTL for details about the content of each job. <HLQ> is high-level qualifier.

    TIP After submitting the install job, the <HLQ>.INSTALL.CNTL library cannot be opened in Edit mode. The job has to wait until it gets exclusive access (DISP=OLD) to the <HLQ>.INSTALL.CNTL library.
30. Proceed to Validating Your SAS Foundation Deployment on page 57.

Install and Configure SAS for FTP Format

Before you begin SAS installation, be sure to do the following:

1. Make sure that you have completed the Pre-Installation Checklist on page 3.
2. If you received this order to add maintenance or additional SAS Software products to your existing order, please note that this process creates a new SAS installation, requiring a different high-level-qualifier for your traditional data sets and a new SASHOME directory. Using your existing high-level-qualifier causes unpredictable results.

Unloading Your Customized z/OS 9.4 FTP Media

Overview

Installing a basic order from FTP Media does not require you to create a SAS Software Depot. Your customized system image, based on your order, is built at SAS, and is sent to you in an FTP format. Your setinit license is already applied to this image.

You can use either DFDSS or FDRDSF to restore the traditional data sets to disk and the PAX command to restore the SAS Home directory to UNIX file system space. JCL is provided to enable you to rename the image to your high-level qualifier (HLQ) and to customize any site-specific information that you require.

Four files are attached to your Software Order Email:

```
JCL_to_unload_with_DFDSS.txt
JCL_to_unload_with_FDR.txt
JCL_to_FTP_your_order.txt
JCL_to_unPAX_SASHOME.txt
```

These files contain JCL that is customized for your site based on your order. You will use either the JCL_to_unload_with_DFDSS.txt or JCL_to_unload_with_FDR.txt, depending on the backup and restore software product that is used at your site. These files (jobs) are also located in the TAPECTL data set created in Step 1 on page 49 for backup purposes.

Restore the data from FTP and then modify references to high-level qualifiers or the path to the SASHOME directory consistent with your site's standards.

Installation Steps

Note:

- All installation jobs include case-sensitive strings. You must set CAPS OFF in the ISPF / PDF editor while editing these jobs.
- After restoring your job from your Software Order Email, all subsequent jobs and members can be found in the data set <HLQ>.TAPECTL where <HLQ> is the high-level qualifier you will use for the data sets in your SAS installation.
- Do not create a data set with your target high-level-qualifier that might conflict with the data set names that will be restored, or your job will have a return code of 8.

Step 1: Retrieve the Files from Our FTP Site

Files can be retrieved from our anonymous FTP site by running the batch job contained in the attached file JCL_to_FTP_your_order.TXT. Edit the values in <...> to values appropriate for your site.

Alternatively, from TSO or ISPF option 6 you can execute the following commands (pre-allocate the file for the DFDSS or FDR TERSEd data set). Make sure you edit the values in <...>.

Note: You should retrieve one of the files, the dfdsstrs file, or fdrtrs file depending on whether you use IBM Corporation's ADRDSSU (sometimes called DFDSS) or Innovative Data Processing's FDRDSF program to restore your data sets.

```
ftp ftp.sas.com
Userid: anonymous
Password: <your Email address>
cd techsup/zOS/Install_Depot
binary
get V<order #>.dfdsstrs <preallocated file> (REPL
get V<order #>.fdrtrs <preallocated file> (REPL
get V<order #>.pax <Unix file system directory>/V<order #>.pax
```

```
quit
```

Note: This is a blind directory so that you will not be able to display the contents of the directory in a browser or with an "ls" command. You must request the file explicitly by name.

Note: The size of these data sets is specified in the JCL_to_FTP_your_order.TXT file.

Step 2: Restore the Traditional SAS System Data Sets to a Defined High-level Qualifier

Make a choice of IBM Corporation's ADRDSSU or Innovative Data Processing's FDRDSF program to unload the SAS system image and execute the job for that utility. A sample of each job, customized for your installation, is attached to your Software Order Email. The comments at the beginning of the JCL statements provide additional information.

TIP Do not run both the jobs.

DFDSS: RES1DSS Job

Note: If you are using SMS, be sure to read the additional information in Steps 2b and 4 below.

1. Fill in the necessary JOBCARD information.
2. Change the first five SET statements:

a. **SET DISKUNIT='SYSALLDA'**

Disk unit for data sets

b. **SET DISKVOL='XXXXXX'**

Disk volser for data sets

Note: If you are using SMS, you must add a valid disk volume and follow the instructions in Step 4 below.

c. **SET TEMPUNIT='SYSALLDA'**

Temporary disk space

d. **SET FTPDSN='YOUR.FTP.DSN'**

DSN of downloaded DSS dump

e. **SET UNTERSE='YOUR.UNTERSE.DSN'**

DSN of the unterse dump

3. In the SYSIN to ADRDSSU (step DSSREST), for the RENAMEU keyword, update the —HLQ- to the high-level qualifier that you need for your SAS installation data sets.

Note: There is a limit of 17 characters for the HLQ, and it must be in uppercase.

Note: Limited to have only a two-level replacement value. If you need a three-level high-level qualifier, you will have to restore using a two-level value and then rename the restored data sets.

4. If you are using SMS, in the SYSIN DD statement, you must provide a valid STORCLAS value after the CATALOG statement. Follow these steps:

a. Enter a continuation character (hyphen) in the CATALOG statement.

b. Enter the STORCLAS (your site value) statement on the next line.

If you add an MGMTCLAS and DATACLAS value, follow these steps:

a. Enter a continuation character (hyphen) in the STORCLAS statement.

b. Enter the MGMTCLAS (your site value) statement on the next line.

Note: DATACLAS is not a valid option for a restore.

Below is an example, of the JCL both before and after adding values to STORCLAS and MGMTCLAS.

Before:

```
//SYSIN DD *
RESTORE DATASET(
INCLUDE(**)
)
RENAMEU(
(**,
-HLQ-.**)                                    /* Supply */
)
INDDNAME(TAPEDD1)
OUTDDNAME(DISKDD1)
CATALOG
/*
//
```

After:

```
//SYSIN DD *
RESTORE DATASET(
INCLUDE(**)
)
RENAMEU(
(**,
-HLQ-.**)                                    /* Supply */
)
INDDNAME(TAPEDD1)
OUTDDNAME(DISKDD1)
CATALOG
STORCLAS(your site value)
MGMTCLAS(your site value)
/*
//
```

5. Submit the job.

OR

FDRDSF: RES1FDR Job

Note: If you are using SMS, be sure to read the additional information in Steps 2b and 4 below.

1. Fill in the necessary JOBCARD information.

2. Change the first five SET statements:

a. **`SET DISKUNIT='SYSALLDA'`**

Disk unit for data sets

b. **`SET DISKVOL='XXXXXX'`**

Disk volser for data sets

Note: If you are using SMS, you must add a valid disk volume and follow the instructions in Step 4 below.

c. **SET TEMPUNIT='SYSALLDA'**

Temporary disk space

d. **SET FTPDSN='YOUR.FTP.DSN'**

DSN of downloaded DSS dump

e. **SET UNTERSE='YOUR.UNTERSE.DSN'**

DSN of the unterse dump

3. In the SYSIN to FDRDSF (step FDRREST), for the NEWINDEX keyword, update the –HLQ- to the high-level qualifier that you need for your SAS installation data sets. Note that there is a limit of 17 characters for the HLQ, and it must be in uppercase.

Note: There is a limit of 17 characters for the HLQ, and it must be in uppercase.

Note: Limited to have only a two-level replacement value. If you need a three-level high-level qualifier, you will have to restore using a two-level value and then rename the restored data sets.

4. If you are using SMS, in the SYSIN DD statement, you must provide a valid STORCLAS value after the NEWINDEX statement. Follow these steps:

a. Enter a continuation character (comma) after your –HLQ- specification in the NEWINDEX statement.

b. Enter the STORCLAS=<*your value*> statement on the next line.

If you add an MGMTCLAS and DATACLAS values, follow these steps:

a. Enter a continuation character (comma) after the STORCLAS value.

b. Enter the MGMTCLAS=<*your value*> and/or DATACLAS (<*your value*>) statements on the same line, where each value separated by a comma.

Below is an example, of the JCL both before and after adding values to STORCLAS , MGMTCLAS and DATACLAS.

Before:

```
//SYSIN DD *
RESTORE TYPE=DSF
SELECT ALLDSN,
    NEWINDEX=-HLQ-
/*
//
```

After:

```
//SYSIN DD *
RESTORE TYPE=DSF
SELECT ALLDSN,
    NEWINDEX=-HLQ-,
    STORCLAS=your value,MGMTCLAS=your value,DATACLAS=your value
/*
//
```

5. Submit the job.

Step 3: Restore the SAS Home Directory to UNIX File System Space

You can create the necessary UNIX file system space using the supplied sample job REC2CZFS, or your system staff can create a suitable UNIX file system space for you. You can use HFS or zFS (zFS provides better performance). About 3 GB of UNIX file system space is needed for your SAS Home directory.

RES2CZFS Job (Optional)

Note: This job (JCL located in <HLQ>.TAPECTL) is provided as an example of how to create a UNIX file system space and mount it, if your site does not know how to create one, then the SAS installer is allowed to do so.

This job allocates a UNIX file system data set and formats it in compatibility mode to hold the UNIX file system for the SAS image. You should have sysadmin mount authority to execute the job. You do not need to run this job if you already have the space that is created for UNIX file system, for this installation. The comments at the beginning and end of the JCL statements might provide additional information.

1. Fill in the necessary JOBCARD information.
2. Change the four SET statements:

a. **`SET ZFS='-HLQ-.ZFS'`**

Data set name of the zFS. Note that the value specified for —HLQ- must be in uppercase.

b. **`SET SU='BPXROOT'`**

SuperUser ID with UID=0 authority

c. **`SET SASADMIN='sasadm'`**

User ID owning the file system

d. **`SET MOUNTPT='<SASHOME>'`**

Location of SAS Home Directory. For example: **`/usr/lpp/SAS/sashome`**

e. In the SYSIN and IDCAMS (step ALLOCZFS):

- Change the zFS data set name, -zFS-, in the NAME keyword.
- Change the volume assignment, -VOLSER-, in the VOLUME keyword.

f. In the SYSTSIN to IKJEFT01 (step MOUNTZFS):

- Change the zFS data set name, -zFS-, in the FILESYSTEM keyword.
- Change the mount point, -mountpoint-, in the MOUNTPOINT keyword.

g. Submit the job.

PAXUNLD Job

A sample of this job, customized for your installation, is attached to your Software Order Email in this text file : **`JCL_to_unPax_SASHOME.txt`**

This job restores the SASHOME directory to a UNIX file system. The RES2CZFS job must be completed before this job is executed.

Note: If there is pre-existing UNIX file system space for installation, then RES2CZFS job is not executed.

1. Fill in the necessary JOBCARD information.
2. Change the first two SET statements:

a. **`SET PAXSCRPT='/<a zfs directory>/pax_rest.sh'`**

The **pax_rest.sh** file is created by this job in the directory that was previously defined. This directory must already exist.

b. **SET SASHOME='<SASHOME>'**

Location of the SASHOME directory. This is the same location as MOUNTPT in the RES2CZFS job, if used.

3. **SET PAXDSN = '/a zfs directory/v<order #>.pax'**

Specify the path and name of .PAX file you downloaded to, from our FTP site. See Step 1: Retrieve the Files from Our FTP Site on page 49 .

4. Submit the job.

Step 4: Replace Certain Strings with Site-Specific Values

You must edit the RPLVARC control file located in <HLQ>.TAPECTL to customize SAS at you site. This file should be edited before the subsequent two JCL jobs are run.

Table 4.1 *RPLVARC Control File*

1	HLQ	High-level qualifier in uppercase. Note that there is a limit of 17 characters.
2	SYSNAME	Machine name in uppercase on which this installation resides (replacing ZOSHOST).
3	LSYSNAME	Machine name in lowercase on which this installation resides (replacing zoshost).
4	SASPATH	Your SASHOME directory path.
5	JAVAHOME	Your JAVAHOME directory path. For example: **/usr/lpp/java/J7.1**
		Note: Steps 6 through 9 enables you to override the JOBCARD parameters supplied by SAS with those that are specific to your site.
6	JOBCARD2	MSGCLASS, MSGLEVEL, and CLASS
7	JOBCARD3	TIME and REGION
8	JOBCARD4	A comment by default. If you are using this JOBCARD, add a comma after your last parameter on JOBCARD3.
9	JOBCARD5	A comment by default. If you are using this JOBCARD, add a comma after your last parameter on JOBCARD4.
10	USER	Your installer user ID in uppercase (replacing USERNM).
11	LUSER	Your installer user ID in lowercase (replacing usernm)

		Note: Steps 12 through 16 are needed only if the order includes SAS/IntrNet, else put an asterisk (*) before each of these lines to comment them out.
12	CGIBINURL	URL for CGI executables.
13	ADMINNAME	Name of the administrator.
14	ADMINMAIL	Email address of the administrator.
15	APPSRVHOSTNAME	DNS name or IP address of the application server host where SAS Foundation is located.
16	APPSRVPORT	Customary default port number is 5001, but you can use any valid available port on your system between 256 – 65535.
17	DSKVOL	Specify DASD volume (required). *Note:* If USESMS is true, then specify **`DSKVOL=_blank/null_`**
18	USESMS	If SMS is used, set it to **`true`**, else set it to **`false`** (required).
19	SMSDTCLS	Set to the value of your SMS data class. This value is required if **`USESMS=True`**, else set the value as **`_blank/null_`**.
20	SMSMGCLS	Set to the value of your SMS management class. This value is required if **`USESMS=True`**, else set the value as **`_blank/null_`**.
21	SMSSTCLS	Set to the value of your SMS storage class. This value is required if **`USESMS=True`**, else set the value as **`_blank/null_`**.

Save your changes.

RPLCPDS Job

This job (member RPLCPDS located in <HLQ>.TAPECTL) modifies the z/OS traditional data sets with the values that you specified in member RPLVARC.

1. Fill in the necessary JOBCARD information.
2. Change the following SET statement:

   ```
   SET JOBSPDS='-HLQ-.TAPECTL'
   ```

   High-Level Qualifier (HLQ) that was specified in Step 2 on page 50 must be in uppercase.
3. Submit the job.
4. Review the output to ensure that everything ran successfully.

RPLCUSS Job

This job modifies the UNIX file system files in the SAS Home directory with the values that you specified in member RPLVARC.

1. Fill in the necessary JOBCARD information.
2. Change the two SET statements:

a. `SET JOBSPDS='-HLQ-.TAPECTL'`

High-Level Qualifier that was specified in Step 2 on page 50 . Note: HLQ must be in uppercase.

b. `SET TMPPATH='/tmp'`

Temporary location used to write the shell script that performs the string replacement.

Note: `tmp` is a UNIX directory and is case sensitive. This location must exist before the RPLCUSS job is run.

3. Submit the job.
4. Review the output to ensure that everything ran successfully.

Proceed to Chapter 5, “Validating Your SAS Foundation Deployment,” on page 57

Chapter 5

Validating Your SAS Foundation Deployment

Deployment Process Overview: Step Five 57
Overview of Validating Your SAS Foundation Deployment 57
Run SAS Valid Job to Test Your Deployment 58
Post Deployment Configuration 58
Create a Deployment Registry Report 58

Deployment Process Overview: Step Five

This chapter describes how to make sure that your SAS deployment is properly installed.

Validating your deployment is the final step in deploying SAS Foundation.

1. Complete the Pre-Installation Checklist.
2. Set up a SAS profile.
3. Create a SAS Software Depot.
4. Install SAS.

⇨ **5. Validate your SAS deployment.**

Overview of Validating Your SAS Foundation Deployment

This section describes tasks that you can perform to ensure that SAS is properly installed and configured:

- Run SAS program to test your deployment.
- Run the JAVAINFO procedure.
- Create a deployment registry report to see an inventory of what has been deployed on your machine.

Run SAS Valid Job to Test Your Deployment

Run the VALID job located in &prefix.INSTALL CNTL data set to validate your SAS deployment. Ensure that all steps complete with a return code of 0.

Post Deployment Configuration

To complete any required product-specific post-deployment tasks, refer to *Configuration Guide for SAS 9.4 Foundation for z/OS* available at: http://support.sas.com/documentation/installcenter/en/ikfdtnmvscg/66194/PDF/default/config.pdf .

Create a Deployment Registry Report

Using a supported version of Java, you can create a report of the SAS deployment registry. For more information about the latest supported versions of Java, go to Third-Party Software Requirements. This report is an inventory of what SAS products and components have been deployed on your machine.

To create a deployment registry report:

1. In OMVS, change to ***SAS-installation-directory*/deploymntreg/**.

   Here is an example:

   ```
   cd /usr/lpp/SAS/deploymntreg
   ```

2. Enter the following command:

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

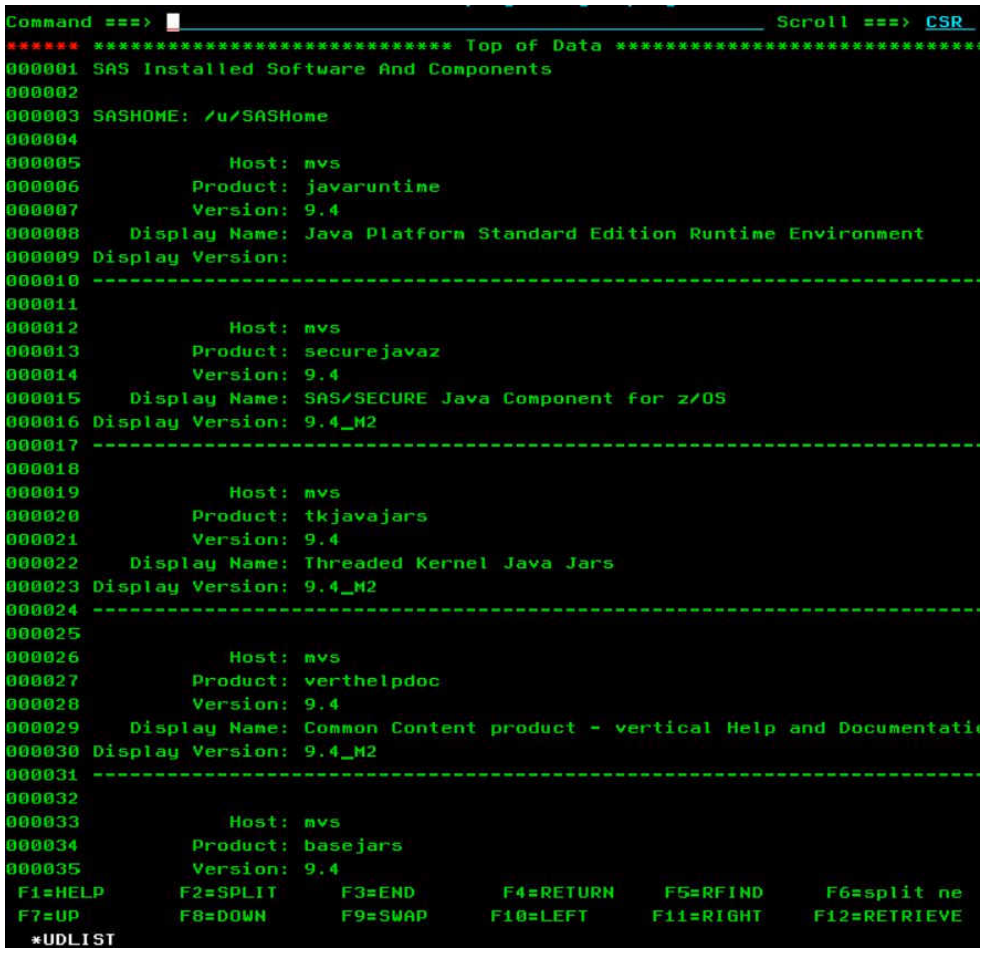
   If you do not have Java that is defined in your PATH environment variable, here is an example:

   ```
   /usr/lpp/java/J7.1/bin/java -jar sas.tools.viewregistry.jar
   ```

   Note: Java is installed at **/usr/lpp/java/J7.1**

   An HTML and TXT report is created in ***SAS-installation-directory*/deploymntreg/**.

3. You should see a report similar to the following:


Command ===>
Scroll ===> CSR
****** ***************************** Top of Data ******************************
000001 SAS Installed Software And Components
000002
000003 SASHOME: /u/SASHome
000004
000005 Host: mvs
000006 Product: javaruntime
000007 Version: 9.4
000008 Display Name: Java Platform Standard Edition Runtime Environment
000009 Display Version:
000010 ----------
000011
000012 Host: mvs
000013 Product: securejavaz
000014 Version: 9.4
000015 Display Name: SAS/SECURE Java Component for z/OS
000016 Display Version: 9.4_M2
000017 ----------
000018
000019 Host: mvs
000020 Product: tkjavajars
000021 Version: 9.4
000022 Display Name: Threaded Kernel Java Jars
000023 Display Version: 9.4_M2
000024 ----------
000025
000026 Host: mvs
000027 Product: verthelpdoc
000028 Version: 9.4
000029 Display Name: Common Content product - vertical Help and Documentati
000030 Display Version: 9.4_M2
000031 ----------
000032
000033 Host: mvs
000034 Product: basejars
000035 Version: 9.4
F1=HELP F2=SPLIT F3=END F4=RETURN F5=RFIND F6=split ne
F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE
*UDLIST

Appendix 1

Troubleshooting SAS Foundation

Troubleshooting a SAS Deployment **61**
Opening a SAS Technical Support Track **61**

Troubleshooting a SAS Deployment

Installation errors can happen. Most installation errors are due to one of these reasons:

- Corrupted installation files

  Run the SAS Depot Checker Utility to assess the integrity of the files in your SAS Software Depot. If you find errors, download depot again. Then, attempt the installation again.

  For more information, see Checking Your SAS Software Depot on page 24.

- Inappropriate operating environment

  Review the SAS system requirement appropriate for your operating system available at http://support.sas.com/resources/sysreq/index.html.

- Unfulfilled system requirements

  Review the SAS system requirements appropriate for your operating system available at http://support.sas.com/resources/sysreq/index.html.

TIP Two SAS logs, SDW_**date-installed_time-installed**.log and IT_**date-time-stamp**.log, are helpful for troubleshooting a failed SAS deployment. Using the error message text from these logs, you can search http://support.sas.com for solutions. For more information, see http://support.sas.com/kb/49756.html.

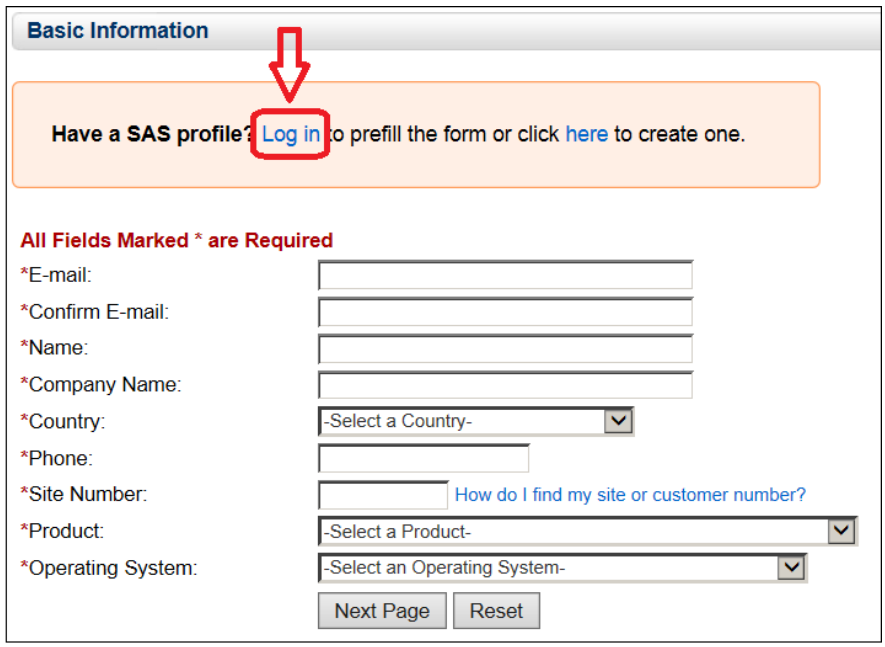
Opening a SAS Technical Support Track

If you are unable to resolve a SAS Foundation issue, the next step is to go to the SAS Technical Support website and open a track on the issue.

To open a Technical Support track, follow these steps:

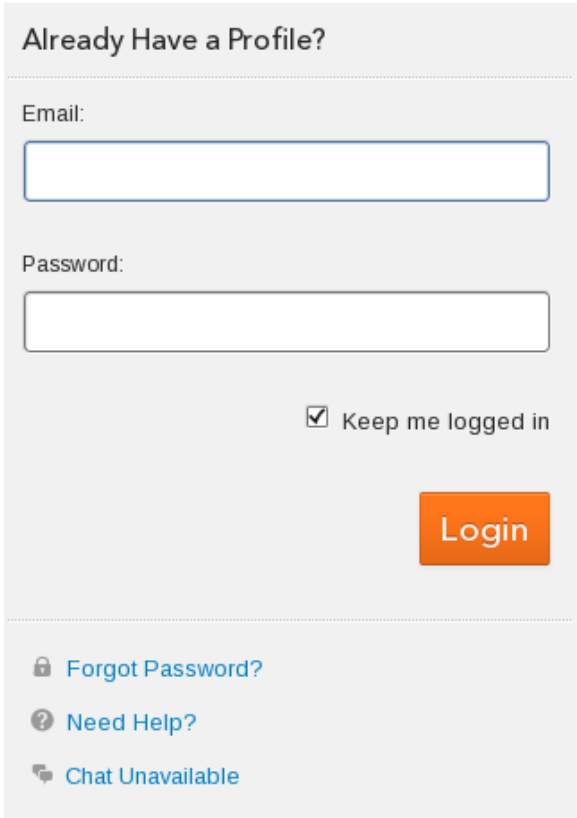
1. Point your web browser to http://support.sas.com/ctx/supportform/createForm.

You are directed to the SAS Technical Support Form page.



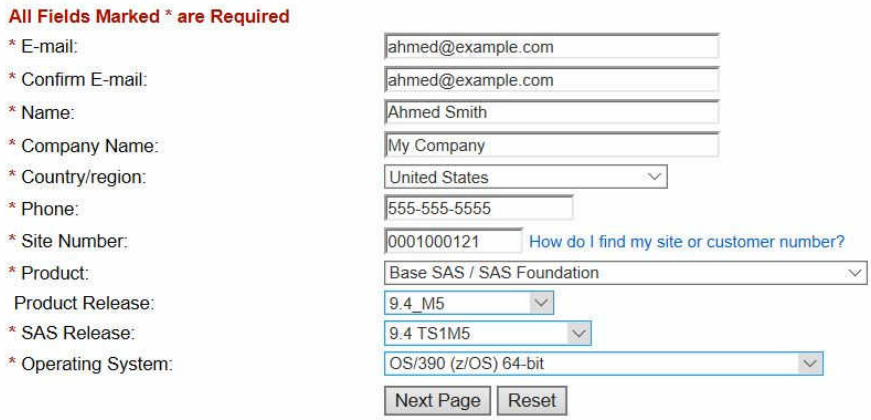
2. Click **Log in**.

   The SAS Login page is displayed.



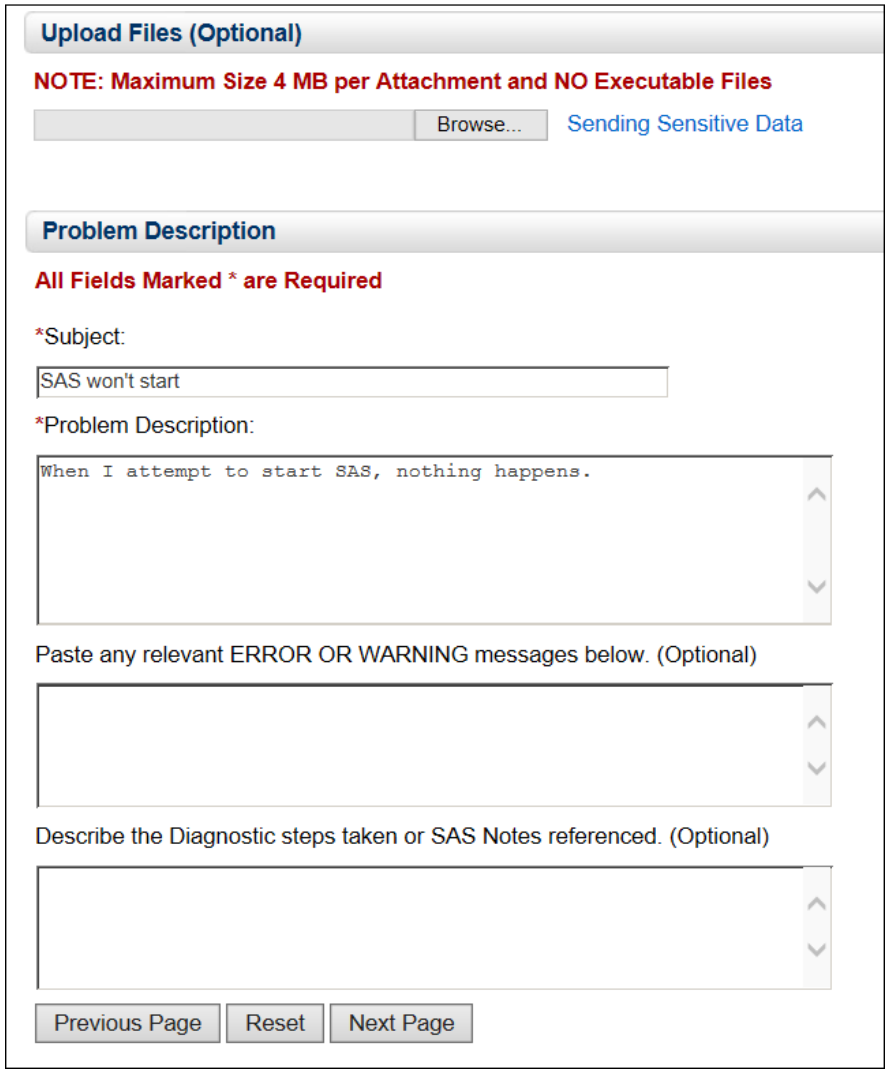
3. Enter your email address, password, and click **Login**.

   You are returned to the SAS Technical Support Form page with your basic information filled in from your SAS profile.



4. Verify your basic information, and enter additional information such as product, product release, SAS release, and operating system. When you are finished, click **Next**.

   The Problem Description form is displayed.



5. Enter the following:

   - a subject and a description of the product in the required fields.

- any relevant error or warning messages. And describe any diagnostic steps taken or SAS Notes referenced.
- any screen captures that are attached to the form as graphic files.

When you are finished, click **Next Page**.

The Problem Description form page is displayed with all of your information entered.

Basic Information:

E-mail:	ahmed@example.com
Name	Ahmed Smith
Company:	My Company
Country/region:	us
Phone Number:	+1(555) 555-5555
Site Number:	0001000121
Product:	Base SAS / SAS Foundation
Product Release:	9.4_M5
SAS Release:	9.4 TS1M5
Operating System:	OS/390 (z/OS) 64-bit

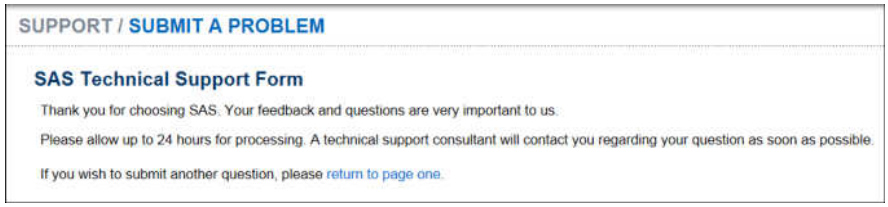
Problem Description:

Subject:	SAS won't start
Uploaded Files:	
Problem Description:	When I attempt to start SAS, nothing happens
Error and Warning Messages:	
Diagnostic Steps:	

Return to Editing | Submit

6. If you need to change anything, click **Return to Editing**. Else, click **Submit**.

   A confirmation page is displayed.



Recommended Reading

- SAS Usage Note 9193: SAS support for releases of IBM z/OS operating system
- SAS Usage Note 54575: How to validate SAS® 9.4 or later software depots in z/OS environments using the SAS® Software Depot Checker
- Installation Note 49756: Troubleshooting the SAS® 9.4 installation process in a z/OS operating environment
- General Information and Troubleshooting for Electronic Software Delivery

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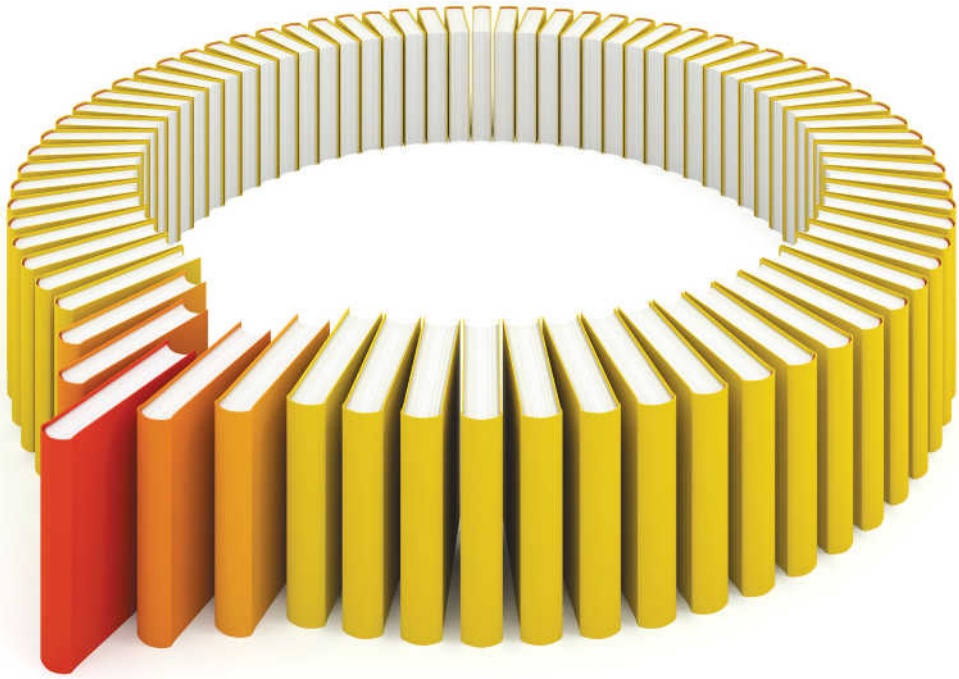

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