

Installation Instructions for SAS[®] 9.1.3 Foundation for OpenVMS[™] Alpha



Note: SAS 9.1.3 Foundation for OpenVMS Alpha is packaged for distribution using Info-ZIP's compression utility. The installation program uses UnZip to read zip files from the CD. Info-ZIP's software (Zip, UnZip and related utilities) is free and can be obtained as source code or executables from Internet/WWW sites, including <http://www.info-zip.org/pub/infozip/>.

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Chapter 1 – Before You Install SAS 9.1.3 Foundation

Audience

This document is intended for the SAS Install Representative, designated as the person responsible for installing and maintaining SAS software for OpenVMS systems at your site.

This document describes the installation instructions for SAS 9.1.3 Foundation, which is made up of server-side Base SAS and a variety of server-side SAS products (the exact products vary by order). Installation of mid-tier and client-side products is available from your SAS Software Navigator.

There are two paths for installing SAS 9.1.3 Foundation, either a new installation or as an upgrade from a SAS 9.1 or SAS 9.1.2 Foundation installation. If you are performing a new installation, go to Chapter 2 after finishing this first overview chapter. If you are performing an upgrade, you should go to Chapter 4 next.

Throughout this document, the installation program for SAS 9.1.3 Foundation is referred to as SAS Setup.

Understanding This Book

This document conforms to the following conventions:

Courier

Courier type indicates commands, directory paths, filenames, Internet addresses, logical names, etc.

Italics

Italic type indicates documentation references or key notes.

Bold

Bold type indicates important text or concepts.

UPPERCASE

Uppercase type indicates variable and option settings.

Dollar sign \$

The dollar sign \$ indicates an example OpenVMS command.

Contacting SAS

If you need to contact SAS, refer to the *SAS Technical Support Information* document for information about who to contact and how to contact them. The document may be located by opening the **Documentation for Installing and Configuring SAS** CD or Install Center. On the first page, select **SAS Basic Installation Edition Kit**, then select **SAS Technical Support Information** in the “Service and Support” section.

Accessing Release Documentation

Release documentation is included on the **Documentation for Installing and Configuring SAS** CD, consisting of Alert Notes, System Requirements, Installation Instructions and Configuration Guide. The latest versions of these enclosures are available on the Install Center Web page, <http://support.sas.com/documentation/installcenter/913/kit/index.html>.

To see the documentation included in your installation kit, visit the Install Center Web site and click **Basic Installation Edition Kit** under “SAS 9.1.3.”

Installation Checklist

A typical SAS 9.1.3 Foundation installation involves the following steps. These steps are explained in detail in the remainder of this document. Please use a copy of this checklist as you complete all the steps listed to install SAS 9.1.3 Foundation.

Prerequisites

- Make sure the system on which you intend to install SAS 9.1.3 Foundation is properly backed up.

Environment

- Review the *Alert Notes* to learn of any installation-related issues you should be aware of.
- Review the *System Requirements*. Verify that your system meets the minimum operating system version, memory, and disk space requirements.
- Make sure you have adequate free space in `SYS$UPDATE` for this install. The SAS Software Navigator and SAS Setup, together, use up to 355,000 blocks of temporary disk space in the `SYS$UPDATE` directory to load its installation programs. If you install without using the SAS Software Navigator, you will only need around 125,000 blocks.
- Create the *sas* account and ensure you have a security profile that will allow you to install SAS 9.1.3 Foundation, including `BYPASS` among your authorized privileges. Make sure you can mount and dismount CD media on your system.
- Make sure you have adequate free disk space to complete the installation. Refer to the *System Requirements* to determine disk space requirements.

Installation

- Review these *Installation Instructions*.
- Determine the type of installation you will perform.
- Identify a target directory where you want to install SAS 9.1.3 Foundation.
- Obtain your SAS Installation Data.

Post-Installation

- Review your installation log files.
- Make SAS 9.1.3 Foundation available for use.
- Make sure you have a Web browser available on your system. Refer to the *System Requirements* to determine Web browser requirements.

Chapter 2 – Installing SAS 9.1.3 Foundation from the SAS Setup Disk

This chapter describes the pre-installation and installation steps necessary for SAS Setup to install SAS 9.1.3 Foundation. SAS Setup is provided on the *SAS Setup Disk*, as well as installed along with SAS 9.1.3 Foundation. You must use SAS Setup to install and maintain SAS 9.1.3 Foundation.

Step 1 – Installation Requirements

All that is required to complete your installation is the proper CD Set to install from and your SAS Installation Data.

CD Set

The CD Set refers to the set of CDs that make up your software order. It is found in the Installation Kit. A CD Set value is printed on the *SAS Setup Disk*, along with the date it was manufactured, to assist you in locating the correct set of CDs to complete your installation. The CD Set for SAS 9.1.3 consists of the following:

- *SAS Software Navigator Disk*
- *SAS Setup Disk*
- Software Disks (one or more numerically labeled, such as *Software Disk 1*)
- Supplemental Disks (each individually labeled, such as *SAS Client-Side Components*)

SAS Installation Data

SAS Installation Data consists of customized installation information and customized product authorization information provided by SAS. SAS will send a Software Order E-mail to the SAS Installation Representative at your site. This Software Order E-mail contains your SAS Installation Data in a text attachment. Instructions in the Software Order E-mail explain where and how to save the text attachment for later use. If you cannot locate the correct SAS Installation Data, you can visit the Web site <http://support.sas.com/adminservices-SID> to have your Software Order E-mail re-sent to the SAS Installation Representative at your site.

Step 2 – Verifying Your Environment

Alert Notes

Alert Notes list any installation-related issues you should be aware of before installing or using SAS software. Review the *Alert Notes* on the **Documentation for Installing and Configuring SAS** CD or Install Center to familiarize yourself with any issues before installing or using SAS software.

System Requirements

SAS 9.1.3 Foundation supports specific releases of OpenVMS Alpha. Review the *System Requirements* on the **Documentation for Installing and Configuring SAS** CD or Install Center to verify that your system meets the minimum operating system, memory, and disk space requirements before you begin installing SAS 9.1.3 Foundation. Installation of SAS 9.1.3 Foundation will not be successful if the system requirements have not been met.

Temporary Space

SAS Setup uses up to 125,000 blocks of temporary disk space in the SYS\$UPDATE directory to load its installation programs. After the installation is complete, this disk space is freed.

You can check the available disk space in the SYS\$UPDATE directory using a command similar to the following:

```
$ SHOW DEVICES SYS$UPDATE
```

Accounts and Permissions

SAS highly recommends that you perform your installs using the *sas* account. While this can be any user id, we recommend you choose an account such as *sas* or *sassys*. Once chosen, this user id is referred to as the *sas* account.

On OpenVMS Alpha, the *sas* account must have BYPASS privilege to ensure complete installation of SAS software. BYPASS privilege allows access to all protected objects, giving you unlimited access to the system. In addition to having BYPASS among your authorized privileges, you need the ability to mount and dismount CDs on your system.

Before you commence installing or configuring SAS software, please be sure that you are logged in as the *sas* account.

Adequate Free Disk Space

1. Make sure you have adequate free disk space in the `SYS$UPDATE` directory to load SAS Setup properly.
 - You will need approximately 125,000 blocks of free disk space in `SYS$UPDATE`.
 - This space is freed upon completion of SAS Setup.
2. Make sure you have enough free disk space in the target directory to install all the software for which you are licensed.
 - You can approximate the amount of disk space you will need from the *System Requirements* document.

Please refer to the *Service & Support* tab if you need to contact SAS for help in finding any of this information.

Step 3 – Preparing for Installation

In preparation for your installation, you need to consider the following issues so you can provide appropriate responses to SAS Setup prompts. You need to determine all of the following information prior to running SAS Setup.

Installation Type

Determine the type of installation you will perform—a new installation or update an existing installation.

New installation	This creates a new, independent installation of SAS 9.1.3 Foundation. A new installation requires an empty directory location in which to install SAS 9.1.3 Foundation.
Existing installation	This updates an existing installation of SAS Foundation. Choose this type when you want to upgrade your installation to 9.1.3 or add products to your existing 9.1.3 installation. Updating an existing installation requires that you specify the <code>SASROOT</code> directory of that existing installation. Upgrading to SAS 9.1.3 Foundation from any release of SAS earlier than 9.1 is not valid.

Target Directory

Determine the target directory in which you intend to install SAS 9.1.3 Foundation. Make sure you have write access to this target directory.

New installation	If you are performing a new installation, you can choose a directory that does not already exist and SAS Setup will create it for you.
Existing installation	You must specify the directory of an existing installation. Determine the full directory path of your existing SAS Foundation installation.

Java Runtime Environment

Some features in SAS 9.1.3 require the use of a SAS-specific version of the Java Runtime Environment (JRE) which is included in a SAS 9.1.3 Foundation installation.

If you are performing a new installation and SAS 9.1.3 Foundation has previously been installed on this computer, you need to determine whether or not the new SAS installation should contain its own copy of the JRE.

At the time of the previous installation, SAS Setup created a `SASPREFS.DAT` file in the home directory of the user performing the install. Data in this file specifies the location of the installed JRE. The new installation will use the JRE pointed to by the `SASPREFS.DAT` file by default, assuming the `SASPREFS.DAT` file exists. If you choose to share the previously installed JRE with the new installation, the original JRE installation pointed to by the `SASPREFS.DAT` file must not be deleted or the new installation of SAS will no longer work.

If you prefer that your new SAS installation contain its own copy of the JRE to avoid concerns about keeping the previous installation, you should rename or delete the pre-existing `SASPREFS.DAT` file prior to performing your new SAS installation.

SAS Installation Data Source

SAS Installation Data consists of customized installation information and customized product authorization information provided by SAS. SAS will send a Software Order E-mail to the SAS Installation Representative at your site. This Software Order E-mail contains your SAS Installation Data in a text attachment. Instructions in the Software Order E-mail explain where and how to save the text attachment for later use. If you cannot locate the correct SAS Installation Data, you can visit the Web site <http://support.sas.com/adminservices-SID> to have your Software Order E-mail re-sent to the SAS Installation Representative at your site.

Step 4 – Running SAS Setup

Method 1: Running SAS Setup from the Mounted *SAS Setup Disk*

We recommend that you change your default directory to your intended target directory prior to launching SAS Setup, though this is not required. First, mount the CD using the command

```
$ MOUNT/OVER=ID/MEDIA=CDROM/UNDEF=(STREAM_LF:0) cd-rom
```

where `cd-rom` is the actual device name of your CD-ROM drive. Once mounted, launch the software with the command

```
$ MCR cdrom:[000000] SASSETUP
```

where `cdrom` is the actual device name of your CD-ROM drive.

When you run SAS Setup from the *SAS Setup Disk*, you have the option of performing a new installation or updating an existing installation. You cannot run setup utilities from the *SAS Setup Disk*.

Method 2: Running SAS Setup Directly from an Existing SAS 9.1.3 Foundation Installation

If you intend to update an existing installation or run setup utilities, you can run SAS Setup directly from the SASROOT directory as follows:

```
$ @disk:[directory] SASSETUP.COM
```

where `disk:[directory]` refers to the root directory of your existing installation.

If you intend to perform a new installation, you must run SAS Setup from the *SAS Setup Disk*.

Step 5 – Prompting Phase

The prompting phase presents a series of menus and prompts to gather all the necessary information to complete the installation.

Conventions

The first screen you see when you run SAS Setup is the Welcome screen. It lists the conventions used in the installation program.

```
SAS Installation Setup

Welcome to SAS Setup, the program used to install and maintain your
SAS software. SAS Setup guides you through a series of menus and
prompts to gather the information it requires to complete its tasks.

Some conventions used throughout SAS Setup are:

    * indicates which menu selection is the default choice
    ( ) indicates the default response to a prompt
    ! starts a sub-process on your system
    h displays help for a menu selection or prompt
    g goes back to a previous menu selection or prompt
    q quits SAS Setup at any point

SAS Setup is fully documented in the installation instructions included
in your Installation Kit.

Press <Enter> to continue...
```

SAS Setup Help

Within SAS Setup, at most prompts and menus, context-sensitive help is available by responding with `help` (or just `'h'`). In addition, for menus, you can enter `help` or `'h'` followed by the number of a menu entry, to get information on just that one menu entry.

You can also get general information on SAS Setup at the DCL command line, by invoking SAS Setup with the `-help` command line flag, as follows:

- From the media (after mounting the SAS Setup CD):

```
$ MCR cdrom:[000000]SASSETUP -HELP
```

where `cdrom` is the actual device name of your CD-ROM drive.

- From an existing SAS 9.1.3 Foundation installation:

```
$ @disk:[directory]SASSETUP -HELP
```

where `disk:[directory]` refers to the root directory of the existing installation.

Primary Menu Options

Depending on where you launched SAS Setup from, you have the choice of performing a new installation, updating an existing installation, or running setup utilities to maintain an existing installation.

If you launched SAS Setup from the *SAS Setup Disk*, you will see the following choices in the SAS Setup Primary Menu:

```
Primary Menu
-----
 1. Perform a New Installation
 2. Update an Existing Installation
-----
g: Go back   q: Quit     h: Help
-----
```


If you launched SAS Setup from the SASROOT directory, you will see the following choices in the SAS Setup Primary menu:

```
Primary Menu
-----
  1. Update an Existing Installation
  2. Run Setup Utilities
-----
g: Go back  q: Quit   h: Help
-----
```

Perform a New Installation

A new installation is the recommended option for installing SAS 9.1.3 Foundation, either as a clean install or as a step in upgrading to SAS 9.1.3 Foundation. You can have as many SAS 9.1.3 Foundation installations on a system as you like. Upgrading to SAS 9.1.3 Foundation from any release of SAS earlier than 9.1 is not valid.

Update an Existing Installation

2. Update an Existing Installation. This option is typically chosen when adding software to an existing SAS 9.1.3 Foundation installation. Updating an existing installation requires that you specify the SASROOT directory of that existing installation.

Run Setup Utilities

Running Setup Utilities allows you to perform maintenance tasks to an existing SAS 9.1.3 Foundation installation, such as renewing your license information.

SAS Installation Data Source

You **must** obtain your SAS Installation Data to complete the installation.
installation.

```
Obtain SAS Installation Data

SAS Installation Data tailors the installation specifically for
your site.

Enter the filename or directory path containing your SAS Installation Data.
-->
```

After entering your information, you will receive a confirmation that your SAS Installation Data was successfully retrieved, or an appropriate error message.

```
SAS Installation Data retrieved successfully.
```

Target Directory

The target directory location is where you want to install or have previously installed SAS 9.1.3 Foundation. This location is also referred to as SASROOT. Make a note of the full directory path of your target directory so you can provide the information when prompted.

```
Specify Target Directory

Please enter the full directory path of the target location for the
installation of your SAS software. The directory you specify must be
empty for a new SAS installation. If you specify a directory
that does not already exist, it will be created for you.

Target location path? (SYS$COMMON:[SAS9_1])
-->
```

Make sure there is adequate free disk space available in the target directory. You can estimate the disk space requirements from the “Space Requirements” section listed in the *System Requirements*.

Loading Options

You have the option of installing all licensed software or selectively installing software.

```
Load Software Menu
-----
  1. Load All Licensed Software (Recommended)
  2. Selectively Load Software
-----
g: Go back   q: Quit   h: Help
-----
```

Load All Licensed Software

Based upon the installation type chosen, this option's behavior changes to fit your needs. Selecting this option for a new installation will load all the software that is licensed for your installation. Selecting this option when updating an existing installation will load only the licensed software that is not already installed.

We recommend you choose this option when you want to install all the software for which you are licensed. You should also choose this option when adding licensed software to your existing SAS 9.1.3 Foundation installation.

Selectively Load Software

When you choose to selectively load software, you must manually choose all the software you wish to install from the Selective Software Menu.

We recommend this option only when you wish to install a subset of the software for which you are licensed. In most cases, you should choose Load All Licensed Software.

```
Selective Software Menu
-----
  1.  Select Software Solutions
  2.  Select Software Products
  3.  Select Sample Programs
  4.  Select SAS/GRAPH Map Data Sets
  5.  Select SAS/GIS Census Tract Map Data Sets
  6.  Preview Current Selections
  7.  Install Current Selections
  8.  Reset Current Selections
-----
g: Go back   q: Quit   h: Help
-----
```

When you choose any of the selection items from the Selective Software Menu, you will see a selection screen similar to the one below. The screen shows you which software is selected, which software was previously installed, and which software you are licensed to run.

```
----- PRODUCTS Selection Screen ----- Page 1 of 2
  '*' = selected   '|' = previously installed   '+' = licensed
-----

  1  +Base SAS                               2  +SAS High-Performance Forecasting
  3  +SAS IntegrationTechnologies           4  +SAS/ACCESS R/3
  5  +SAS/CONNECT                           6  +SAS/EIS
  7  +SAS/ETS                                8  +SAS/GENETICS
  9  +SAS/GIS                               10 +SAS/GRAPH
 11  +SAS/IML                               12 +SAS/INSIGHT
 13  +SAS/INTRNET                           14 +SAS/OR
 15  +SAS/QC                                16 +SAS/SHARE
 17  +SAS/SPECTRAVIEW                       18 +SAS/STAT

0 items selected totaling 0 kBlocks / 3462 kBlocks available

-----
# : select item      -# : deselect item          n : next page      g : go back
#-# : select range  -#-# : deselect range          p : prev page     q : quit
* : select all      -* : deselect all          <Enter> : continue h : help
-----
```

To select an item enter the numbers associated with the names you want to select separated by spaces (such as 1 3 4 12), ranges of items you want to select (such as 1-5 8-10), or all software (*). You may deselect items in the same manner, but with a minus (-) preceding the selection (such as -2 -9).

The note --> Enter 'n' to view the next page of selections <-- indicates there are multiple pages of selections. Enter 'n' to view the next page of selections and 'p' to return to a previous page. When there are multiple pages of selections, entering an asterisk (*) selects all items in the current category (e.g., all products or all sample programs), not just those currently visible.

When you are finished making selections, press Enter to return to the Selective Software Menu.

SAS/ACCESS Software Configuration

SAS/ACCESS software requires some post-installation configuration before it can be used. Part of this post-installation configuration can be completed during installation. If any SAS/ACCESS software selected for installation requires input from the installer, the following screen appears:

```
SAS/ACCESS Software Configuration

Several SAS/ACCESS products require post-installation configuration
before you can use the software. Part of this configuration
is identifying the DBMS version you are running for the
selected SAS/ACCESS software products.

You have the option of performing this configuration step during
installation or at a later time after the installation is complete.

If you choose to configure SAS/ACCESS software during installation
(which is recommended), select the SAS/ACCESS software to configure
from the list that follows and provide answers to the additional
questions when presented.

When your installation is complete, refer to the Configuration
Guide for details on how to complete your SAS/ACCESS software
configuration.

Would you like to configure your SAS/ACCESS software at this time? [Y]
-->
```

Answering Yes to the question in the above screen during installation is optional. If you choose to continue your SAS/ACCESS software configuration during installation, a screen similar to the following appears:

```
----- ACCESS Config Selection Screen ----- Page 1 of 1
  '*' = selected
-----

1  SAS/ACCESS ORACLE

-----

#: select item      -#: deselect item      n: next page      g: go back
#-#: select range  #-#: deselect range    p: prev page      q: quit
*: select all      -*: deselect all      <Enter>: continue  h: help
-----
```

Choose the SAS/ACCESS software you want to configure, and you will be prompted for specific information about each of your choices, for example:

```
Enter the version or release of the ORACLE software installed
or mounted on your system.  If your version of ORACLE
software does not exactly match the list below, choose the
version closest to, but not greater than the version of
your ORACLE software.

Choose the version or release of your ORACLE software:
-----

1  8.1.7
2  9.0.1
-----
g: Go back  q: Quit  h: Help
-----
```

If you choose to skip SAS/ACCESS software configuration during installation, you can complete it at a later time. Refer to Chapter 3, “Running SAS/ACCESS Software Configuration” for details.

Whether you choose to continue or skip SAS/ACCESS software configuration at this time, you must complete the configuration before you can use SAS/ACCESS software. Refer to Chapter 3, “Post-Installation Configuration for SAS/ACCESS Software” in the *Configuration Guide* to complete the configuration.

Confirmation

Just before loading your selected software, SAS Setup completes some final checks to make sure it can properly load the software. SAS Setup also performs a final disk space check to make sure you have adequate free disk space to install. Finally, SAS Setup asks if you want to continue and install the selected software.

Attention: This prompt is the last opportunity to go back or exit SAS Setup without writing to your system. If you choose to continue and later exit the installation, you will need to delete files written to your system.

```

Final disk space requirements (in blocks):
  Total Available Disk Space:      7,424,388
  Required for Installation:       942,727
                                   -----
  Remaining after Installation:    6,481,661

There is sufficient disk space for installation.

The interactive portion of SAS Setup is complete.  If you choose to
continue, SAS Setup will prompt you to mount the media it requires to
complete the installation.  If you choose not to continue, you can
return to the interactive portion of SAS Setup and change your
selections.

Do you wish to continue?  [Y]

```

Step 6 – Software Loading Phase

All selected software is extracted from the CDs to the specified target directory during the loading phase.

Prior to extracting files, SAS Setup lists all the CDs you will be prompted to mount. The CDs are listed in the order in which they will be used. This list of CDs is compiled based on your software selections and may not contain all the CDs in your Installation Kit.

```
Based on your software selections, SAS Setup requires the following
CDs to complete the installation. Make sure you can locate all the
CDs listed.
```

```
Label
```

```
-----
```

```
Software Disk 1
```

```
Software Disk 2
```

Mounting Additional CDs

SAS Setup will prompt for all additional CDs it requires to complete the installation during the software loading phase. For example:

```
Please remove the CD: SAS Setup Disk (SAVQ15)
```

```
and insert the CD: SAS Software Disk 1 (SAVQ25)
```

```
After you have switched the disks,
```

```
Press <Enter> to continue?
```

All you need to do is physically exchange the disks: the program issues the DISMOUNT and MOUNT commands for you.

If you cannot locate the requested CD, you must exit SAS Setup by entering Q at this prompt. Exiting SAS Setup during the software loading phase will result in an incomplete installation and you will have to delete what was loaded before running SAS Setup again.

Software Loading

After you have removed the SAS Setup Disk and replaced it with the next CD on the list, file extraction begins. Messages appear on the screen indicating that software is installing, for example:

```
Extracting Base SAS Software...
Extracting Base SAS Samples...
Extracting SAS/AF Software...
Extracting SAS/ASSIST Software...
Extracting SAS/CONNECT Software...
Extracting SAS/CONNECT Samples...
```

Step 7 – Automated Post-Processing Phase

Immediately following the software loading phase, SAS Setup performs tasks to configure SAS 9.1.3 Foundation for use during the automated post-processing phase. Some examples of these tasks are building help files, building the SAS registry file, and performing product-specific configuration.

Post-processing tasks are listed on the screen as they are run and saved to installation log files for later reference. A clear indication of the status of each post-processing task is listed so you can easily scroll through the list and search for errors.

Following is a sample installation log file of post-processing tasks being executed:

```
Building desktop data sets
Please wait...

Desktop configuration is complete.
_____

Creating SAS Registry files
Please wait...

SAS Registry file creation is complete.
_____
```

Automated post-processing is the final step in the installation process. When post-processing is complete, SAS Setup prints a final installation status and exits. If errors were detected during

installation, they are listed in the completion status. Following is a snapshot of the completion status that is reported:

```
SAS 9.1 Installation Setup is complete.

Results:
  Warnings: 0
  Errors: 0

Please review your installation log file, found in:
  SYS$COMMON:[SAS91.INSTALL.ADMIN.LOGS]INSTALL_031213_000.LOG
```

After the installation program completes, enter a DCL command to dismount the last CD mounted:

```
$ DISMOUNT cdrom
```

before physically removing it from the drive.

Step 8 – Reviewing Installation Log Files

All the files located in the `SAS$ROOT:[INSTALL]` directory should be viewed only. Do not edit or delete these files. SAS Setup uses these files to determine the state of your SAS 9.1.3 Foundation installation for all subsequent tasks.

Log Files

SAS Setup creates installation log files whenever it is run. These installation log files contain useful diagnostic information about any warnings or errors that may have occurred during the installation process. You should review the installation log files after the installation has completed. The installation log files reside in the following directories:

<code>SAS\$ROOT:[INSTALL.ADMIN.LOGS]</code>	Contains most of the installation log files, including install logs, extraction logs, and post-processing logs.
---	---

<code>SAS\$ROOT:[INSTALL.ADMIN.SAS]</code>	Contains the log files for post-processing tasks that run SAS 9.1.3 Foundation.
--	---

History File

In addition to the installation log files, an install history file is created. The history file contains the history of the software that was installed during the installation process. The history file is updated whenever new software is installed. The history file is:

```
SAS$ROOT: [ INSTALL . ADMIN ] HISTORY_INSTALL . DAT .
```

Backup Files

SAS Setup saves versions of several files that may have been modified at your site, such as the news file. If you want to retrieve modifications to files that have been saved by SAS Setup, they can be found in:

```
SAS$ROOT: [ INSTALL . ADMIN . BACKUPS ]
```

Step 9 – After Installing

After you have installed your software, be sure to continue to Chapters 5 and 6 for post-installation steps and information about maintaining your SAS 9.1.3 Foundation installation.

Chapter 3 – Installing SAS 9.1.3 Foundation from the SAS Software Navigator

This chapter describes the pre-installation and installation steps necessary for SAS Setup to install SAS 9.1.3 Foundation. For instructions on using the SAS Software Navigator, refer to the *User's Guide for SAS Software Navigator* on the **Documentation for Installing and Configuring SAS** CD or Install Center.

You also have the option to run SAS Setup directly from the SAS Setup Disk.

If you choose this option, refer to the "Appendix - Running SAS Setup Directly from the SAS Setup Disk" for directions on how to proceed.

Step 1 – Installation Requirements

All that is required to complete your installation is the proper CD Set to install from and your SAS Installation Data.

CD Set

The CD Set refers to the set of CDs that make up your software order. It is found in the Installation Kit. A CD Set value is printed on the *SAS Setup Disk*, along with the date it was manufactured, to assist you in locating the correct set of CDs to complete your installation. The CD Set for SAS 9.1.3 Foundation consists of the following:

- *SAS Software Navigator Disk*
- *SAS Setup Disk*
- Software Disks (one or more numerically labeled, such as *Software Disk 1*)

When installing SAS 9.1.3, you can begin with the SAS Software Navigator (either from the *SAS Software Navigator* CD or from a SAS Software Depot), and you will be prompted for any additional CDs required. Based on your software selections, you may not be prompted for all the CDs you received in your Installation Kit.

SAS Installation Data

SAS Installation Data (SID) consists of customized installation information and customized product authorization information provided by SAS. The SID is obtained by the SAS Software Navigator and passed to the SAS 9.1.3 Foundation install.

Step 2 – Verifying Your Environment

Alert Notes

Alert Notes list any installation-related issues you should be aware of before installing or using SAS software. Review the *Alert Notes* on the **Documentation for Installing and Configuring SAS** CD or Install Center to familiarize yourself with any issues before installing or using SAS software.

Product-specific Alert Notes are not included in your Installation Kit. You can access product-specific Alert Notes from the following Web site:

http://support.sas.com/techsup/search/alert_search.html

System Requirements

SAS 9.1.3 Foundation supports specific releases of OpenVMS Alpha. Review the *System Requirements* on the **Documentation for Installing and Configuring SAS** CD or Install Center to verify that your system meets the minimum operating system, memory, and disk space requirements before you begin installing SAS 9.1.3 Foundation. Installation of SAS 9.1.3 Foundation will not be successful if the system requirements have not been met.

Note: *SAS 9.1.3 Foundation requires a higher minimum amount of virtual memory to install than it does to run. Before beginning the installation process, ensure that your PGFLQUO is set to at least 786,432 pagelets. When the installation is complete, you can reset your PGFLQUO to the requirements specified by the System Requirements documentation.*

Temporary Space

SAS Setup uses up to 355,000 blocks of temporary disk space in the SYS\$UPDATE directory to load its installation programs. After the installation is complete, this disk space is freed.

You can check the available disk space in the SYS\$UPDATE directory using a command similar to the following:

```
$ SHOW DEVICES SYS$UPDATE
```

Accounts and Permissions

SAS highly recommends that you perform your installs using the *sas* account. While this can be any user id, we recommend you choose an account such as *sas* or *sassys*. Once chosen, this user id is referred to as the *sas* account.

On OpenVMS Alpha, the *sas* account must have BYPASS privilege to ensure complete installation of SAS software. BYPASS privilege allows access to all protected objects, giving you unlimited access to the system. In addition to having BYPASS among your authorized privileges, you need the ability to mount and dismount CDs on your system.

Before you commence installing or configuring SAS software, please be sure that you are logged in as the *sas* account.

Adequate Free Disk Space

1. Make sure you have adequate free disk space in the `SYS$UPDATE` directory to load SAS Setup properly.
 - You will need approximately 355,000 blocks of free disk space in `SYS$UPDATE`.
 - This space is freed upon completion of SAS Setup.
2. Make sure you have enough free disk space in the target directory to install all the software for which you are licensed.
 - You can approximate the amount of disk space you will need from the *System Requirements* document.

Please refer to the *Service & Support* tab if you need to contact SAS for help in finding any of this information.

Step 3 – Preparing for Installation

In preparation for your installation, you need to consider the following issues so you can provide appropriate responses to SAS Setup prompts. You need to determine all of the following information prior to running SAS Setup.

Installation Type

Determine the type of installation you will perform—a new installation or update an existing installation.

New installation	This creates a new, independent installation of SAS 9.1.3 Foundation. This new install may also be used as a step in upgrading to SAS 9.1.3 Foundation.
Existing installation	This updates an existing installation of SAS Foundation. Choose this type when you want to upgrade your installation to 9.1.3 or add products to your existing 9.1.3 installation. Updating an existing installation requires that you specify the SASROOT directory of that existing installation. Upgrading to SAS 9.1.3 Foundation from any release of SAS earlier than 9.1 is not valid.

Target Directory

Determine the target directory in which you intend to install SAS 9.1.3 Foundation. Make sure you have write access to this target directory.

New installation	A new installation not being used as a step in an upgrade requires an empty directory location in which to install SAS 9.1.3 Foundation.
Existing installation	You must specify the directory of an existing installation. Determine the full directory path of your existing SAS Foundation installation.

Java Runtime Environment

Some features in SAS 9.1.3 require the use of a SAS-specific version of the Java Runtime Environment (JRE) which is included in a SAS 9.1.3 Foundation installation.

If you are performing a new installation and SAS 9.1.3 Foundation has previously been installed on this computer, you need to determine whether or not the new SAS installation should contain its own copy of the JRE.

At the time of the previous installation, SAS Setup created a `SASPREFS.DAT` file in the home directory of the user performing the install. Data in this file specifies the location of the installed JRE. The new installation will use the JRE pointed to by the `SASPREFS.DAT` file by default, assuming the `SASPREFS.DAT` file exists. If you choose to share the previously installed JRE with the new installation, the original JRE installation pointed to by the `SASPREFS.DAT` file must not be deleted or the new installation of SAS will no longer work.

If you prefer that your new SAS installation contain its own copy of the JRE to avoid concerns about keeping the previous installation, you should rename or delete the pre-existing `SASPREFS.DAT` file prior to performing your new SAS installation.

Step 4 – Running SAS Setup

When the SAS Software Navigator reaches SAS 9.1.3 Foundation in its installation queue, you will be prompted to find and mount a CD. If you are beginning an installation, locate the CD labeled *SAS Setup Disk* in your Installation Kit. Otherwise, locate the CD that SAS Setup has prompted you to mount.

Note: If you are using a SAS Software Depot, you will receive no media prompts, and the install will launch automatically.

Step 5 – Prompting Phase

The prompting phase presents a series of menus and prompts to gather all the necessary information to complete the installation.

Conventions

The first screen you see when you run SAS Setup is the Welcome screen. It lists the conventions used in the installation program.

```
SAS Installation Setup

Welcome to SAS Setup, the program used to install and maintain your
SAS software. SAS Setup guides you through a series of menus and
prompts to gather the information it requires to complete its tasks.

Some conventions used throughout SAS Setup are:

    * indicates which menu selection is the default choice
    ( ) indicates the default response to a prompt
    ! starts a sub-process on your system
    h displays help for a menu selection or prompt
    g goes back to a previous menu selection or prompt
    q quits SAS Setup at any point

SAS Setup is fully documented in the installation instructions included
in your Installation Kit.

Press <Enter> to continue...
```

SAS Setup Help

Within SAS Setup, at most prompts and menus, context-sensitive help is available by responding with `help` (or just `'h'`). In addition, for menus, you can enter `help` or `'h'` followed by the number of a menu entry, to get information on just that one menu entry.

Primary Menu Options

Depending on where you launched SAS Setup from, you have the choice of performing a new installation, updating an existing installation, or running setup utilities to maintain an existing installation.

If you launched SAS Setup from the *SAS Setup Disk*, you will see the following choices in the SAS Setup Primary Menu:

```
Primary Menu
-----
 1. Perform a New Installation
 2. Update an Existing Installation
-----
g: Go back   q: Quit   h: Help
-----
```

If you launched SAS Setup from the SASROOT directory, you will see the following choices in the SAS Setup Primary menu:

```
Primary Menu
-----
 1. Update an Existing Installation
 2. Run Setup Utilities
-----
g: Go back   q: Quit   h: Help
-----
```

Perform a New Installation

A new installation is the recommended option for installing SAS 9.1.3 Foundation, either as a clean install or as a step in upgrading to SAS 9.1.3 Foundation. You can have as many SAS 9.1.3 Foundation installations on a system as you like. Upgrading to SAS 9.1.3 Foundation from any release of SAS earlier than 9.1 is not valid.

Update an Existing Installation

2. Update an Existing Installation. This option is typically chosen when adding software to an existing SAS 9.1.3 Foundation installation. Updating an existing installation requires that you specify the SASROOT directory of that existing installation.

Run Setup Utilities

Running Setup Utilities allows you to perform maintenance tasks to an existing SAS 9.1.3 Foundation installation, such as renewing your license information.

Target Directory

The target directory location is where you want to install or have previously installed SAS 9.1.3 Foundation. This location is also referred to as SASROOT. Make a note of the full directory path of your target directory so you can provide the information when prompted.

```
Specify Target Directory

Please enter the full directory path of the target location for the
installation of your SAS software. The directory you specify must be
empty for a new SAS installation. If you specify a directory
that does not already exist, it will be created for you.

Target location path? (SYS$COMMON:[SAS9_1])
-->
```

Make sure there is adequate free disk space available in the target directory. You can estimate the disk space requirements from the “Space Requirements” section listed in the *System Requirements*.

Loading Options

If you are performing an install from your SAS Software Navigator’s Software Index, you have the option of installing all licensed software or selectively installing software.

```
Load Software Menu
-----
 1. Load All Licensed Software (Recommended)
 2. Selectively Load Software
-----
g: Go back   q: Quit   h: Help
-----
```

Load All Licensed Software

This option's behavior changes to fit your needs based upon the installation type chosen. Selecting this option for a new installation or upgrade will load all the software that is licensed for your installation. Selecting this option when updating an existing installation will allow you to load only the licensed software that is not already installed.

We recommend you choose this option when you want to install all the software for which you are licensed. You should also choose this option when adding licensed software to your existing SAS 9.1.3 Foundation installation.

Selectively Load Software

When you choose to selectively load software, you must manually choose all the software you wish to install from the Selective Software Menu.

We recommend this option only when you wish to install a subset of the software for which you are licensed. In most cases, you should choose Load All Licensed Software.

```
Selective Software Menu
-----
 1.  Select Software Solutions
 2.  Select Software Products
 3.  Select Sample Programs
 4.  Select SAS/GRAPH Map Data Sets
 5.  Select SAS/GIS Census Tract Map Data Sets
 6.  Preview Current Selections
 7.  Install Current Selections
 8.  Reset Current Selections
-----
g: Go back   q: Quit    h: Help
-----
```

When you choose any of the selection items from the Selective Software Menu, you will see a selection screen similar to the one below. The screen shows you which software is selected, which software was previously installed, and which software you are licensed to run.

```

----- PRODUCTS Selection Screen ----- Page 1 of 2
  '*' = selected   '|' = previously installed   '+' = licensed
-----

  1  +Base SAS                               2  +SAS High-Performance Forecasting
  3  +SAS IntegrationTechnologies           4  +SAS/ACCESS R/3
  5  +SAS/CONNECT                           6  +SAS/EIS
  7  +SAS/ETS                                8  +SAS/GENETICS
  9  +SAS/GIS                               10 +SAS/GRAPH
 11  +SAS/IML                               12 +SAS/INSIGHT
 13  +SAS/INTRNET                          14 +SAS/OR
 15  +SAS/QC                               16 +SAS/SHARE
 17  +SAS/SPECTRAVIEW                      18 +SAS/STAT

0 items selected totaling 0 kBlocks / 3462 kBlocks available

-----
# : select item      -# : deselect item          n : next page      g : go back
#-# : select range  -#-# : deselect range        p : prev page     q : quit
* : select all      -* : deselect all          <Enter> : continue h : help
-----

```

To select an item enter the numbers associated with the names you want to select separated by spaces (such as 1 3 4 12), ranges of items you want to select (such as 1-5 8-10), or all software (*). You may deselect items in the same manner, but with a minus (-) preceding the selection (such as -2 -9).

The note --> Enter 'n' to view the next page of selections <-- indicates there are multiple pages of selections. Enter 'n' to view the next page of selections and 'p' to return to a previous page. When there are multiple pages of selections, entering an asterisk (*) selects all items in the current category (e.g., all products or all sample programs), not just those currently visible.

When you are finished making selections, press Enter to return to the Selective Software Menu.

SAS/ACCESS Software Configuration

SAS/ACCESS software requires some post-installation configuration before it can be used. Part of this post-installation configuration can be completed during installation. If any SAS/ACCESS software selected for installation requires input from the installer, the following screen appears:

```
SAS/ACCESS Software Configuration

Several SAS/ACCESS products require post-installation configuration
before you can use the software. Part of this configuration
is identifying the DBMS version you are running for the
selected SAS/ACCESS software products.

You have the option of performing this configuration step during
installation or at a later time after the installation is complete.

If you choose to configure SAS/ACCESS software during installation
(which is recommended), select the SAS/ACCESS software to configure
from the list that follows and provide answers to the additional
questions when presented.

When your installation is complete, refer to the Configuration
Guide for details on how to complete your SAS/ACCESS software
configuration.

Would you like to configure your SAS/ACCESS software at this time? [Y]
-->
```

Answering Yes to the question in the above screen during installation is optional. If you choose to continue your SAS/ACCESS software configuration during installation, a screen similar to the following appears:

```

----- ACCESS Config Selection Screen ----- Page 1 of 1
  '*' = selected
-----

1  SAS/ACCESS ORACLE

-----

#: select item      -#: deselect item      n: next page      g: go back
#-#: select range  #-#: deselect range    p: prev page     q: quit
*: select all      -*: deselect all      <Enter>: continue h: help
-----

```

Choose the SAS/ACCESS software you want to configure, and you will be prompted for specific information about each of your choices, for example:

```

Enter the version or release of the ORACLE software installed
or mounted on your system.  If your version of ORACLE
software does not exactly match the list below, choose the
version closest to, but not greater than the version of
your ORACLE software.

Choose the version or release of your ORACLE software:
-----

1  8.1.7
2  9.0.1
-----
g: Go back  q: Quit  h: Help
-----

```

If you choose to skip SAS/ACCESS software configuration during installation, you can complete it at a later time. Refer to “Running SAS/ACCESS Software Configuration” in Chapter 4 for details.

Whether you choose to continue or skip SAS/ACCESS software configuration at this time, you must complete the configuration before you can use SAS/ACCESS software. Refer to Chapter 1, “Post-Installation Configuration for SAS/ACCESS Software” in the *Configuration Guide* to complete the configuration.

Confirmation

Just before loading your selected software, SAS Setup completes some final checks to make sure it can properly load the software. SAS Setup also performs a final disk space check to make sure you have adequate free disk space to install. Finally, SAS Setup asks if you want to continue and install the selected software.

Attention: This prompt is the last opportunity to go back or exit SAS Setup without writing to your system. If you choose to continue and later exit the installation, you will need to delete files written to your system.

```
Final disk space requirements (in blocks):  
Total Available Disk Space:      7,424,388  
Required for Installation:       942,727  
-----  
Remaining after Installation:    6,481,661
```

There is sufficient disk space for installation.

The interactive portion of SAS Setup is complete. If you choose to continue, SAS Setup will prompt you to mount the media it requires to complete the installation. If you choose not to continue, you can return to the interactive portion of SAS Setup and change your selections.

Do you wish to continue? [Y]

Step 6 – Software Loading Phase

All selected software is extracted from the CDs to the specified target directory during the loading phase.

Prior to extracting files, SAS Setup lists all the CDs you will be prompted to mount. The CDs are listed in the order in which they will be used. This list of CDs is compiled based on your software selections and may not contain all the CDs in your Installation Kit.

```
Based on your software selections, SAS Setup requires the following
CDs to complete the installation. Make sure you can locate all the
CDs listed.
```

```
Label
-----
Software Disk 1
Software Disk 2
```

Mounting Additional CDs

SAS Setup will prompt for all additional CDs it requires to complete the installation during the software loading phase. For example:

```
Please remove the CD: SAS Setup Disk (SAVQ15)

and insert the CD: SAS Software Disk 1 (SAVQ25)

After you have switched the disks,

Press <Enter> to continue?
```

All you need to do is physically exchange the disks: the program issues the DISMOUNT and MOUNT commands for you.

If you cannot locate the requested CD, you must exit SAS Setup by entering Q at this prompt. Exiting SAS Setup during the software loading phase will result in an incomplete installation and you will have to delete what was loaded before running SAS Setup again.

Software Loading

After you have removed the SAS Setup Disk and replaced it with the next CD on the list, file extraction begins. Messages appear on the screen indicating that software is installing, for example:

```
Extracting Base SAS Software...
Extracting Base SAS Samples...
Extracting SAS/AF Software...
Extracting SAS/ASSIST Software...
Extracting SAS/CONNECT Software...
Extracting SAS/CONNECT Samples...
```

Step 7 – Automated Post-Processing Phase

Immediately following the software loading phase, SAS Setup performs tasks to configure SAS 9.1.3 Foundation for use during the automated post-processing phase. Some examples of these tasks are building help files, building the SAS registry file, and performing product-specific configuration.

Post-processing tasks are listed on the screen as they are run and saved to installation log files for later reference. A clear indication of the status of each post-processing task is listed so you can easily scroll through the list and search for errors.

Following is a sample installation log file of post-processing tasks being executed:

```
Building desktop data sets
Please wait...

Desktop configuration is complete.
_____

Creating SAS Registry files
Please wait...

SAS Registry file creation is complete.
_____
```

Automated post-processing is the final step in the installation process. When post-processing is complete, SAS Setup prints a final installation status and exits. If errors were detected during installation, they are listed in the completion status. Following is a snapshot of the completion status that is reported:

```
SAS 9.1 Installation Setup is complete.

Results:
  Warnings: 0
  Errors: 0

Please review your installation log file, found in:
  SYS$COMMON:[SAS91.INSTALL.ADMIN.LOGS]INSTALL_031213_000.LOG
```

After the installation program completes, enter a DCL command to dismount the last CD mounted:

```
$ DISMOUNT cdrom
```

before physically removing it from the drive.

Step 8 – Reviewing Installation Log Files

All the files located in the SAS\$ROOT:[INSTALL] directory should be viewed only. Do not edit or delete these files. SAS Setup uses these files to determine the state of your SAS 9.1.3 Foundation installation for all subsequent tasks.

Log Files

SAS Setup creates installation log files whenever it is run. These installation log files contain useful diagnostic information about any warnings or errors that may have occurred during the installation process. You should review the installation log files after the installation has completed. The installation log files reside in the following directories:

SAS\$ROOT:[INSTALL.ADMIN.LOGS]	Contains most of the installation log files, including install logs, extraction logs, and post-processing logs.
SAS\$ROOT:[INSTALL.ADMIN.SAS]	Contains the log files for post-processing tasks that run SAS 9.1.3 Foundation.

History File

In addition to the installation log files, an install history file is created. The history file contains the history of the software that was installed during the installation process. The history file is updated whenever new software is installed. The history file is:

```
SAS$ROOT: [ INSTALL . ADMIN ] HISTORY_INSTALL . DAT .
```

Backup Files

SAS Setup saves versions of several files that may have been modified at your site, such as the news file. If you want to retrieve modifications to files that have been saved by SAS Setup, they can be found in:

```
SAS$ROOT: [ INSTALL . ADMIN . BACKUPS ]
```

Step 9 – After Installing

After you have installed your software, be sure to continue to Chapters 5 and 6 for post-installation steps and information about maintaining your SAS 9.1.3 Foundation installation.

Chapter 4 – Upgrading to SAS 9.1.3 Foundation

You may upgrade to SAS 9.1.3 Foundation via one of two methods: via staged update, by which SAS 9.1.3 Foundation is installed in a different directory on the same machine or even a different machine from your existing SAS Foundation installation, or via an update in place, where SAS 9.1.3 Foundation is written over your existing SAS Foundation installation. Both of these methods are described in the sections below.

Staged Update

A staged update is the installation of SAS 9.1.3 Foundation in a location other than the existing SAS 9.1 Foundation installation. The new location can be a separate directory on the same machine that the original installation resides on or on a different machine entirely.

In order to perform a staged update, follow the procedures described in Chapter 2 to install SAS 9.1.3 Foundation in a different directory or different machine than your existing SAS Foundation installation.

Updating in Place

Updating in place writes SAS 9.1.3 Foundation over your existing SAS 9.1 or SAS 9.1.2 Foundation installation.

Install SAS 9.1.3 Foundation according to the procedures described in Chapter 2. Based on your SAS Installation Data and the existence of a !SASROOT directory with a prior SAS Foundation image in it, the installation process will decide if an update is the appropriate install path. If an update is indicated, you will be prompted for confirmation that you wish to proceed with an update. During the update, files that may have contained user modifications will be backed up by the installation process before the image is updated with SAS 9.1.3 Foundation.

In addition, on OpenVMS Alpha, most files in your SAS Foundation installation have a version limit of 2. Consequently, by default, an "update in place" operation will not actually overwrite the files: the Release 9.1.3 version of a file will be installed with a higher version number, and the previous version of the same file, from SAS 9.1 or SAS 9.1.2, will be left in place with a lower version number. While this makes no difference to how your upgraded installation will function, it does mean that it will require roughly double the disk space that it otherwise would.

To prevent this, you can change the version limits on (most of) the files in your existing SAS Foundation installation to 1, before running your update in place. To do this, SET DEFAULT to the SAS root directory of the existing installation, then issue this command:

```
$ SET FILE [...] *.* /VERSION_LIMIT=1-  
/EXCLUDE=( SASV9.CFG, SETINIT.SAS, [.TOOLS...] *.* , -  
[.NLS...] *.* , [MISC.BASE]*.COM, [.MISC.CONNECT...] *.* )
```

Once you finish the procedures described in Chapter 2, your installation is complete.

After Upgrading

After you have upgraded your software, be sure to continue to Chapters 4 and 5 for post-installation steps and information about maintaining your SAS 9.1.3 Foundation installation.

Chapter 5 – Setting Up SAS 9.1.3 Foundation

The post-installation phase includes tasks that must be performed after installation is complete. Perform these tasks after you have reviewed the installation log files to your satisfaction.

Making SAS 9.1.3 Foundation Available

Once you have installed SAS 9.1.3 Foundation, you need to make it available to your users. Follow the guidelines in this section to set up SAS 9.1.3 Foundation for use at your site.

Startup Command File

SAS Setup creates a startup command file in `SAS$ROOT:[TOOLS]` that sets up the environment—that is, defines the necessary logical name assignments, and the foreign command definition—to run SAS 9.1.3 Foundation. The file `SAS91.COM` defines the logical names in the user's process logical name table.

Note: `SAS91.COM` includes comments describing the purpose of each logical name assignment.

The SAS Foreign Command

SAS 9.1.3 Foundation is invoked by a foreign command (a symbol definition accepting command line arguments). The definition of the foreign command for invoking SAS 9.1.3 Foundation is:

```
SAS91 ::= $SAS$LIBRARY:SAS91.EXE
```

The foreign command is defined by default in the startup command file `SAS$ROOT:[TOOLS]SAS91.COM`.

Setting Up SAS Invocation

In order to run SAS 9.1.3 Foundation, each user process must first set up the environment by executing `SAS91.COM`. As system manager, you can cause this to be done in every user process, and thus make SAS 9.1.3 Foundation available to each user via a single command, by inserting the following command into `SYS$MANAGER:SYLOGIN.COM`:

```
$ @<disk913>:[<directory913>.TOOLS]SAS91.COM
```

where `<disk913>` and `<directory913>` refer to the location of the root directory of SAS 9.1.3 Foundation.

Alternatively, if you make the values of `<disk91>` and `<directory91>` in the above command known to the users of your system, individual users can insert the same command into their own `LOGIN.COM` files.

Running SAS 9.1.3 Foundation

When you have completed making SAS 9.1.3 Foundation available for use, you can invoke it from the OpenVMS command line as follows:

```
$ SAS91 <options>
```

where *<options>* are valid SAS command line options. Refer to your online documentation to find a list of valid SAS command line options.

Logging SAS Errors

If SAS does not start, the SAS log might contain error messages that explain the failure. However, error messages that SAS issues before the SAS log is initialized are written to the SAS console log. Under OpenVMS, the `SYS$OUTPUT` logical name specifies the location of the console log. This location depends on the user mode. If you are invoking SAS in interactive mode or using a command procedure, SAS displays the error messages at your terminal. If you are invoking SAS in batch mode, SAS writes the error messages to a batch log file.

If SAS terminates with errors the SAS log might contain error messages that explain the failure. Any error message that SAS issues before the SAS log is initialized are written to the MSG window if it is available or to the SAS console log, which is a Windows file. Under Windows NT, the SAS console log is located in the `c:\winnt\Profiles\username\Application Data` folder. In all other Windows operating systems, the SAS console log is located in the `c:\Document and Settings\userid\Application Data` folder. You can obtain the filename for the SAS console log from the Application Event Log. To open the application Event Log, submit `eventvwr` from the Run dialog box and click Application.

Defining a Secondary SAS System

It is possible to have more than one version of SAS available on your system at the same time. You may choose to do this if you are running the current SAS release as production and a newer SAS release in test mode during the transition.

If one version has been set up as the production version, you can run the test version by executing its startup command file, and then its foreign command. For example, if SAS 9.1.3 Foundation is the test version, invoking it requires the two commands

```
$ @<disk913>:[<directory913>.TOOLS]SAS91.COM
```

```
$ SAS91
```

Running the production version after running the test version in the same process also requires two commands: its startup command file, followed by its foreign command.

If you will frequently need to do this sort of switching back and forth between SAS versions, you can set things up so that each version can be started with a single command. Define a command which will accomplish both of the steps shown above for starting the test version, and another command which will do the same for the production version. You can do this by using the VMS `"PIPE"` command.

For example, if SAS 8.2 is your production version, define a command like the following:

```
$ RUN_SAS82 == "PIPE @<disk82>:[<directory82>.TOOLS]SAS82 ; SAS82"
```

where <disk82> and <directory82> are replaced by the disk and directory location of your SAS 8.2 installation.

With this definition in effect, the command

```
$ RUN_SAS82
```

will both set up the environment for running SAS 8.2, and actually invoke it. Similarly, a single command to start SAS 9.1.3 Foundation, in such a multi-version environment, could be defined as follows:

```
$ RUN_SAS913 == "PIPE @<disk913>:[<directory913>.TOOLS]SAS91 ; SAS91"
```

These commands can be defined for a single user by putting the above definitions in that user's LOGIN.COM file, or for all users of the system by putting the definitions in SYS\$MANAGER:SYLOGIN.COM.

Accessing a Web Browser

SAS 9.1.3 Foundation requires access to a Mozilla Web browser. Please refer to the *System Requirements* for the supported versions of Mozilla, as well as information for downloading the correct version.

SAS 9.1.3 Foundation uses the value of the logical name SAS\$BROWSER to find the Web browser program. By default, this logical name is defined in the startup command file SAS91.COM as a placeholder as follows:

```
$ DEFINE /NOLOG/PROCESS SAS$BROWSER -
    "Put file specification for browser program here"
```

You should determine where a supported Web browser is installed on your system and replace the quoted string:

```
"Put file specification for browser program here"
```

with the file specification for the Web browser program installed on your OpenVMS system.

For example, if you have a Mozilla Web browser installed in "MOZILLA\$DIR:MOZILLA-BIN.", edit the line above to read:

```
$ DEFINE /NOLOG/PROCESS SAS$BROWSER "MOZILLA$DIR:MOZILLA-BIN."
```

Customizing Your News File

SAS 9.1.3 Foundation is shipped with a news file whose contents are displayed on every SAS log. This news file is intended for sites to modify and provide site-specific information. To customize the news file, edit `SAS$ROOT:[HELP]NEWS.DOC` and add any information you wish.

You can also disable the displaying of the news file on the SAS log by specifying the `NONEWS` option.

Running SAS/ACCESS Software Configuration

SAS/ACCESS Interface to Oracle software requires configuration before you can use the software. This configuration can be performed at the same time that you install the SAS/ACCESS software, as described in Chapter 2 under "SAS/ACCESS Software Configuration", or it can be performed later, as described below.

To run this configuration step, you must know the Oracle version that you are running and will use with your SAS/ACCESS software. Also, the configuration step must be run in a process whose environment has been set up to run this version of Oracle itself. For example, the logical name `ORA_ROOT` must be defined, and must point to the location where this version of Oracle is installed.

Attention: Refer to the section "Specific Product Requirements" in the *System Requirements* to determine if the DBMS version or release is supported by the SAS/ACCESS software you want to configure.

Furthermore, determine if the combination of your operating system version or release, plus the DBMS version or release is supported by the SAS/ACCESS software you want to configure.

To configure your SAS/ACCESS Interface to Oracle software, follow the steps below:

1. Run SAS Setup from `SASROOT, @disk:[directory]SASSETUP.COM`. Make sure you have the appropriate privilege to update files in `SASROOT`.
2. Select `Run Setup Utilities` from the SAS Setup Primary Menu.
3. Select `Perform Product-Specific Configuration`.
4. Select `SAS/ACCESS Configuration`.
5. Select `SAS/ACCESS ORACLE` from the selection screen.

6. SAS Setup will prompt you for the Oracle version you wish to use, by displaying a menu like the following:

```
Available Version Specific Images for
SAS/ACCESS Interface to ORACLE:
  1. ORACLE V8.1.7
  2. ORACLE V9.0.1

  0. Exit this menu.

Enter the number of the ORACLE version (1-2):
```

Respond by selecting the Oracle version you wish to use with your SAS/ACCESS software. The post-processing will take place immediately and report any errors encountered.

To complete the final step for SAS/ACCESS software configuration, refer to Chapter 1, “Post-Installation Configuration for SAS/ACCESS Software” in the *Configuration Guide for SAS 9.1.3 Foundation for OpenVMS Alpha*.

Further Configuration Steps

Some SAS products installed with SAS 9.1.3 Foundation have their own configuration procedures. Please refer to the *Configuration Guide for SAS 9.1.3 Foundation for OpenVMS Alpha* for product-specific post-installation tasks.

Chapter 6 – Maintaining Your SAS 9.1.3 Foundation Installation

This chapter describes tasks you can perform to maintain your SAS 9.1.3 Foundation installation. SAS Setup is automatically loaded along with your SAS 9.1.3 Foundation installation. Use SAS Setup to maintain your installation by choosing the `Run Setup Utilities` option from the SAS Setup Primary Menu. Each utility option available has help associated with it that explains its behavior.

Once SAS 9.1.3 Foundation is installed at your site, you should not directly modify any files in the SASROOT directory. Because the SASROOT files will be overwritten during an update of the installation, any user modifications to files in SASROOT should be duplicated in a location other than SASROOT or the `SAS$ROOT:[SASCFG]` directory. If you update your SAS 9.1.3 installation at a later date, it is your responsibility to take any previously made user modifications and re-integrate them into SAS 9.1.

Renewing SAS Software

SAS 9.1.3 Foundation is licensed on a periodic basis. You will receive new license information whenever you renew your existing SAS 9.1.3 Foundation license or add additional products to your license. The license information you receive is in the form of SAS Installation Data, which includes your SETINIT. You must apply your SAS Installation Data to SAS 9.1.3 Foundation before your licensed software will run.

SAS Installation Data

SAS Installation Data consists of customized installation information and customized product authorization information provided by SAS. SAS will send a Software Order E-mail to the SAS Installation Representative at your site. This Software Order E-mail contains your SAS Installation Data in a text attachment. Instructions in the Software Order E-mail explain where and how to save the text attachment for later use. If you cannot locate the correct SAS Installation Data, you can visit the Web site <http://support.sas.com/adminservices-SID> to have your Software Order E-mail re-sent to the SAS Installation Representative at your site.

Installing Additional Software

Follow the directions in Chapter 2, “Installing SAS 9.1.3 Foundation from the SAS Setup Disk” for instructions on how to install SAS software. After the new software has been installed, follow the instructions in the following section, “Renewing Your Installed SAS Software” to ensure your new products are licensed.

Renewing Your Installed SAS Software

If you just want to renew your license and apply your new SAS Installation Data to your existing SAS installation, follow the steps below:

1. Run SAS Setup from SASROOT, @disk:[directory]SASSETUP.COM. Make sure you have the appropriate privilege to update files in SASROOT. Installing Additional Products
2. Select Run Setup Utilities from the SAS Setup Primary Menu.
3. Select Renew SAS Software.
4. Enter the path of the SAS Installation Data (the saved e-mail attachment) when prompted.
5. Your SAS Installation Data is applied immediately. SAS Setup will report if the task was completed successfully or not. If errors occur, a message is displayed indicating the log files you should check. If the SAS Installation Data applies successfully, you can enter Q to quit SAS Setup and run SAS 9.1.3 Foundation normally.

If you have questions about your SAS Installation Data or encounter problems renewing your license, please refer to the *Service & Support* tab for information on contacting our Customer Service Department and SAS Technical Support.

Restoring the Default Configuration File

A default system configuration file, SAS\$ROOT:[000000]SASV9.CFG is created during the installation of SAS 9.1.3 Foundation. You can modify this configuration file to fit your needs. Refer to the *SAS Companion for OpenVMS Alpha* for information on how to customize the SAS configuration file.

If you have modified your configuration file and want to restore the default version, follow the steps below:

1. Run SAS Setup from SASROOT, @disk:[directory]SASSETUP.COM. Make sure you have the appropriate privilege to update files in SASROOT.
2. Select Run Setup Utilities from the SAS Setup Primary Menu.
3. Select Perform SAS Software Configuration.
4. Select Create SAS Config Files.

Restoring the Default Setup Command Procedure

To re-create the default version of your setup command procedure, SAS\$ROOT:[TOOLS]SAS91.COM, follow the steps below:

1. Run SAS Setup from SASROOT, @disk:[directory]SASSETUP.COM.
2. Select Run Setup Utilities from the SAS Setup Primary Menu.
3. Select Perform SAS Software Configuration.
4. Select Recreate the Setup Command Procedure.

Listing Installed SAS Software

To list all SAS software installed in the current SAS 9.1.3 installation, follow the steps below:

1. Run SAS Setup from SASROOT, @disk:[directory]SASSETUP.COM. Make sure you have the appropriate privilege to update files in SASROOT.
2. Select Run Setup Utilities from the SAS Setup Primary Menu.
3. Select List Previously Installed Software.

Integrating with a SAS Open Metadata Server

To optionally integrate your SAS 9.1.3 Foundation installation with a SAS Open Metadata Server, follow the steps below.

1. Run SAS Setup from SASROOT, @disk:[directory]SASSETUP.COM. Make sure you have the appropriate privilege to update files in SASROOT.
2. Select Run Setup Utilities from the SAS Setup Primary Menu.
3. Select Perform SAS Software Configuration.
4. Select Integrate with SAS Open Metadata Server.

5. Answer a series of prompts for information about integrating with a SAS Open Metadata Server.

- a. In order to integrate with an existing SAS Open Metadata Server, you must specify the fully qualified machine name of the machine where the SAS Open Metadata Server exists. If you are not sure what the fully qualified machine name is, you can open a separate process or window to find it. You can also enter an exclamation (!) mark to start a sub-process and search for the fully qualified machine name.

```
Enter the fully qualified machine name of the SAS Open Metadata Server on the network.  
-->
```

- b. You must enter the port number you will use to communicate with the SAS Open Metadata Server.

```
Enter the Port number for communicating with the SAS Open Metadata Server.  
-->
```

- c. You must enter the name of the SAS Open Metadata Server you will be integrating with.

```
Enter the SAS Open Metadata Server Repository Name. This identifies the  
Repository to use for storing information about this SAS installation.  
-->
```

- d. You must create a default User ID and Password to use when connecting to the SAS Open Metadata Server.

```
Enter the default Metadata User ID to connect to the SAS Open Metadata Server  
from this SAS installation.  
-->
```

```
Enter the Metadata Server Password for your default User ID.  
  
-->
```


Moving SAS 9.1.3 Foundation to Another Location

If you need to move your installed SAS 9.1.3 Foundation to another disk location on your system, follow the steps below:

1. Make a backup of your system.
2. Identify the target directory where you want to move SAS 9.1.3 Foundation and make sure there is adequate free disk space.
3. Copy the entire contents of your installed SAS 9.1.3 Foundation to the new target directory.
4. Use SAS Setup to adjust those places within the new copy of SAS where it refers to its own location. To do this:
 - Run SAS Setup from the new SASROOT, @disk:[directory]SASSETUP.COM. Make sure you have the appropriate privilege to update files in SASROOT.
 - Select Run Setup Utilities from the SAS Setup Primary Menu.
 - Select Perform SAS Software Configuration.
 - Select Adjust SAS to Run in New Location.
 - SAS Setup will ask you to confirm, or change, the paths to both the new and old locations. SAS Setup will report which files were changed, and whether any errors were encountered.
5. Invoke SAS 9.1.3 Foundation and make sure it works properly from the new target directory.
6. When satisfied that SAS 9.1.3 Foundation runs properly, you can remove the prior version.

If you encounter problems moving SAS 9.1.3 Foundation to another disk location, you can always re-install SAS 9.1.3 Foundation from CDs into the new target directory. With this option, you will have to remake any modifications you made to your existing SAS 9.1.3 Foundation installation.

Restoring Backed-up Files

SAS Setup automatically backs up several files that tend to be modified. You can see what files are backed up by looking in SAS\$ROOT:[INSTALL.ADMIN.BACKUPS] If you need to restore one of these files, simply find where the file exists and copy it to the proper location. For example, if you wish to restore a prior copy of your SETINIT file, enter the following command:

```
$ COPY SAS$ROOT:[INSTALL.ADMIN.BACKUPS]SETINIT_031302_000.SAS -
_ $ SAS$ROOT:[000000]SETINIT.SAS
```

When upgrading your SAS Foundation installation, SAS Setup backs up several files that tend to be modified and directories that contain files that tend to be modified. The backed up files and directories will reside in `SAS$ROOT:[INSTALL.ADMIN.UPGRADE_<DATE STAMP>].###` when the install completes.

Uninstalling Installed Software

You can uninstall SAS 9.1.3 Foundation by deleting all the files within the SASROOT directory. In addition, you will need to delete the `SASPREFS.DAT` file located in the home directory of the user that performed the install. Deleting the SASROOT directory will also delete your installed copy of the SAS Private JRE, unless you were using a JRE from another SAS 9.1.3 Foundation install. Deleting the `SASPREFS.DAT` file also removes the reference to the installed JRE, and to the SASROOT itself.

You should not delete a SASROOT directory of a SAS 9.1.3 Foundation if there is another SAS 9.1.3 Foundation installation on the same machine that depends on the JRE in the original SASROOT. Whether or not there is a dependency can be determined by checking the contents of the `SASPREFS.DAT` file of the installation in question to obtain the directory path of the JRE that is being used.

You cannot uninstall SAS software individually because SAS software integrates with other SAS software when it is installed. If you want to disable the use of particular software, you should request a different SETINIT file from SAS and apply it to your installed SAS 9.1.3 Foundation.

Glossary

- **Automatic Post-Processing**
An installation phase where specific configuration tasks are performed by SAS Setup.
- **CD Set**
The set of CDs that make up your software order.
- **Configuration File**
A file containing options that alter the default behavior of SAS 9.1.3 Foundation.
- **DCL sub-process**
A DCL sub-process is a separate process that inherits characteristics from its parent process, such as user name, file protection, privileges, etc.
- **History File**
Control file used by SAS Setup containing a history of what components have been installed.
- **Hotfix**
A replacement file that fixes a specific problem in SAS 9.1.3. Hotfix files can be downloaded from the Technical Support Web site.
- **Install Center Web site**
A Web site located on SAS's external site that always has the latest release documentation available for download. Located at <http://support.sas.com/documentation/installcenter/913/kit/index.html>.
- **Installation Kit**
The Installation Kit contains the installation components of your software order. It contains the *System Requirements*, *Alert Notes*, *Installation Instructions*, *Configuration Guide*, and installation CDs.
- **Order Number**
A number associated with your software order and used as input for downloading your current SAS Installation Data. Your Order Number is printed on the *SAS Order Information* in your Installation Kit, as well as included in the Software Order E-mail sent to the SAS Install Representative at your site.
- **Proxy Server**
A single server used by a company to communicate with other companies over the Internet.
- **SAS 9.1.3 Foundation**
The combination of Base SAS 9.1.3 and the server-side products you have ordered that are installed at the same time as Base SAS 9.1.3.
- **SAS account**
The account on OpenVMS Alpha that should be used for software installation.

- **SAS Installation Data**
Data customized specifically for your site used to install and run SAS 9.1.3 Foundation. You obtain your SAS Installation Data as an attachment to your Software Order E-mail.
- **SAS Installation Key**
The key assigned to your site that enables secure access to the Internet to download your current SAS Installation Data. Your SAS Installation Key is printed on the *SAS Order Information* in your Installation Kit, as well as included in the Software Order E-mail sent to the SAS Install Representative at your site.
- **SAS Private JRE**
A fully functional Java Runtime Environment, excluding the cryptography extension jars, that has been validated to work with SAS 9.1.3 products and is provided by the SAS 9.1.3 Foundation install.
- **SASPREFS.DAT**
A text file, created in the SYS\$LOGIN directory of the user id who installed the SAS 9.1.3 Foundation, containing information about the install (e.g., the location of SAS\$ROOT or the JRE).
- **SASROOT**
The directory location where SAS 9.1.3 Foundation is installed. The SASROOT directory is defined by the SAS\$ROOT logical.
- **SAS Setup**
The application used to install and maintain SAS 9.1.3 Foundation. SAS Setup is supplied on the *SAS Setup Disk*, as well as being installed along with SAS 9.1.3 Foundation.
- **SETINIT**
The SETINIT is supplied by the SAS Contracts Division and is used to authorize SAS 9.1.3 Foundation at your site. The SETINIT is delivered as part of the SAS Installation Data.
- **Shared Library Path**
SAS 9.1.3 Foundation uses your shared library path to access executables for other third-party software.
- **Software Updates**
Replacement file containing fixes and enhancements to SAS 9.1.3 Foundation. Software updates are included in your Installation Kit when appropriate.
- **Target Directory**
The directory location where you intend to install SAS 9.1.3 Foundation. This is also referred to as SASROOT.
- **TOC File**
Control file used by SAS Setup as an index of installable components.
- **TS Level**
The Technical Support level assigned to a given release of SAS 9.1.3 Foundation.



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