# Installation Instructions for the SAS® System under Microsoft® Windows®, Release 6.12 (TS060 and above)

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# Getting Started

This document provides the instructions for installing Release 6.12 of the SAS System under Windows 32s, Windows NT, and Windows 95. Read these instructions before you attempt to install any Release 6.12 SAS software component in the Windows environment.

## How This Book is Organized

This section provides an overview of the information in this document. The following is a description of each chapter and appendix:

- Chapter 1, "Installing the SAS System", provides information on:
  - sample installation configurations,
  - starting the SAS System installation process,
  - removing or modifying existing SAS files,
  - custom installation, and
  - CD or client installation.
- Chapter 2, "Applying Maintenance to Your SAS System", provides instructions for installing maintenance software for the current release of the SAS System.
- Chapter 3, "The Directory Structure of the SAS System", lists all of the directories that are created when you install the SAS System.
- Chapter 4, "Invoking the SAS System", explains how to start the SAS System once you complete the installation process.
- Chapter 5, "Using the Utility Application", explains the facilities available for updating and modifying parts of the SAS System. For example, information is provided for decompressing SAS/GRAPH map data sets.
- Chapter 6, "Technical Support Services", describes the SAS Institute Technical Support services that are available to you.
- Appendix A, "Post-Installation Setup for SAS/CONNECT Software", explains the steps necessary to use SAS/CONNECT software with Release 6.12 of the SAS System.
- Appendix B, "Post-Installation Setup for SAS/SHARE Software", explains how to use SAS/SHARE software with Release 6.12 of the SAS System.
- Appendix C, "Upgrading to Windows 32s", explains the steps you need to take to upgrade your system to run Windows 32s.

- Appendix D, "Installing SAS/ACCESS Interface to ODBC Software", explains the steps that must be taken before you can use SAS/ACCESS Interface to ODBC software.

- Appendix E, "Setting Up the SAS ODBC Driver", explains the steps that must be taken before you can use the SAS ODBC Driver.

- Appendix F, "Setting Up Microsoft Video for Windows", explains how to start the Microsoft Video for Windows setup program included on the SAS System installation media.

- Appendix G, "Installing SAS/ACCESS Interface to SYBASE and SQL Server Software", explains the steps that must be taken before you can use SAS/ACCESS Interface to SYBASE and SQL Server software.

- Appendix H, "Installing SAS/ACCESS Interface to ORACLE Software", explains the steps that must be taken before you can use SAS/ACCESS Interface to ORACLE software.

- Appendix I, "Post-Installation Setup for SAS/ASSIST Software", explains the steps you need to take before you can use SAS/ASSIST software.

- Appendix J, "Installing the SASNULL Device Driver", explains how to install the SASNULL device driver that is necessary for producing hardcopy output from SAS/GRAPH software using native SAS/GRAPH device drivers.

- Appendix K, "Invoking SAS/TUTOR Software", provides information on how to invoke the SAS/TUTOR courses.

- Appendix L, "Testing the Installation", provides information on how to execute programs to test the success of your installation.

- Appendix M, "Updating Your SAS System SETINIT", explains how to update your licensing information when you renew or extend a SAS software component license.

- Appendix N, "Post-Installation Setup for the SQL Query Window", explains the steps you need to follow to successfully use the sample table named `EMPLOYEE` listed in the SQL Query Window online documentation.

- Appendix O, "Using Silent Setup", explains how you can record installations.

- Appendix P, "Generating Diskette Images", explains how you can create original diskette images that can later be used to install the SAS System.

A Glossary is also provided.

# Terminology and Symbols Used in this Document

As you use these installation instructions, you will encounter terminology with which you may not be familiar. The following terms are specific to your SAS System installation and are provided here to facilitate the installation process. Please look for other unfamiliar terms in the glossary at the end of this document.

SASROOT Directory

is the directory where you install the SAS System. This is also referred to as *destination*. The `CORE` directory and several predefined subdirectories are created under the `SASROOT` directory. You may choose any directory as the `SASROOT` directory for the SAS System. For example, valid `SASROOT` directories include:

- `C:\SAS`
- `D:\SAS_WIN`
- `E:\SAS\APPS`

For the examples in this manual, the `SASROOT` directory always appears as `SASROOT.`

The following icons are used throughout this document to identify particular types of information:

The ATTENTION symbol indicates a section that is of particular interest to the SAS Installation Representative or SAS Support Consultant.


The STOP symbol marks a special note that should be read before proceeding with the installation.

❑ The BOX symbol indicates a list of items.


The CD symbol indicates information that applies to the CD-ROM version of the SAS System only.

✔ The CHECKMARK symbol indicates a set of items that should be verified before proceeding with the installation.

# Pre-installation Checklist

Before you begin installing the SAS System, make sure you review the following checklist and perform the tasks requested. Once you have completed the checklist, turn to the section appropriate for your installation. If you are not sure which section you should read, see the section "How This Book is Organized" above.

✔ Review all the items in your product package.

✔ Make sure your hardware meets the specifications indicated in the *System Requirements* contained in your installation package.

✔ Verify the release of Windows you are running. Release 6.12 of the SAS System requires Windows 3.1 or Windows for Workgroups 3.11 with Microsoft Win32s Extensions, Windows NT 3.5.1 or later, or Windows 95.

✔ Read the `COPYRITE.TXT` file. If you are installing from CD-ROM, this file is located on the CD-ROM in the `\sas` directory. If you are installing from diskette, this file is located on the SAS installation diskette at the root directory.

✔ Read the `FEDGOVT.TXT` file (U.S. Federal Government employees only). If you are installing from CD-ROM, this file is located on the CD-ROM in the `\sas` directory. If you are installing from diskette, this file is located on the SAS installation diskette at the root directory.

Unless otherwise noted, your product package from SAS Institute contains all the items listed in the Transmittal Letter. The product package is shipped to the SAS Installation Representative at your site. If you think any items are missing from your package, contact your SAS Institute Representative, who in turn may need to contact SAS Institute.

Your SAS System is shipped either on CD-ROM or on diskettes. If you ordered your system on CD-ROM, your entire system, including components, is contained on the CD. If you ordered your system on diskettes, you should find the following four diskette types in your package:

❑ *SAS Installation Diskette*

contains programs needed to install SAS software.

❑ *Core of the SAS System Diskettes*

contain required options that are used by all components within the SAS System. The CORE diskettes are installed with the SAS `Setup` command.

- *Add-on Component Diskettes*

  contain one or more component diskettes for each SAS software component licensed at your site. If your site has not licensed any add-on components - that is, components other than Base SAS software - additional diskettes are not part of the package.

- *SAS Notes Diskettes*

  contain SAS Notes, Documentation Notes, and an application that lets you select SAS Notes and run SAS Sample Library programs.

## Proper Handling of Your Media

Before you begin your installation, review the following tips for proper handling of your SAS System diskettes or CD-ROM.

CD-ROM:

- Clean the CD and the CD drives regularly with head cleaning kits.
- Return your CD to its protective packaging when not in use.

Diskettes:

- Acclimate the diskette media to room temperature 24 hours before writing or reading.
- Avoid exposing diskettes to rapid changes in environmental conditions.
- Do not touch or wipe the recording surface.
- Avoid placing the diskettes near objects generating a magnetic field, such as motors, magnets, etc.
- Return your diskettes to their protective packaging when not in use.

## Getting Help

The installation program provides online help for you to use at any point during the installation. The help is provided in a native Windows environment. To access the online help, select the `Help` button or F1 at any time while the SAS Setup program is running. The `Help` button is always shown at the lower right corner of your screen in the SAS Setup program.

## Exiting Setup

At any time while SAS Setup is running, you can select `Cancel` or press the F3 key to terminate the installation. The SAS System will not be completely installed if you exit prior to completion. You can run the SAS `Setup` program at a later time to complete the installation.

If you are installing the SAS System over an existing SAS System and you exit SAS Setup prematurely, you may jeopardize the integrity of the existing SAS System.

## Additional Documentation

The primary reference document for this release of the SAS System for Windows is the *SAS Companion for the Microsoft Windows Environment, Version 6, Second Edition*. For additional information, the following manuals are available to assist you with Version 6 of the SAS System:

- *Microsoft Windows Environment: Changes and Enhancements to the SAS System, Release 6.11.*
- *SAS Language and Procedures: Usage, Version 6, First Edition*
- *SAS Language and Procedures: Usage 2, Version 6, First Edition*
- *SAS Procedures Guide, Version 6, Third Edition*
- *SAS Language: Reference, Version 6, Third Edition*
- SAS Technical Report P-222, *Changes and Enhancements to Base SAS Software, Release 6.07*
- SAS Technical Report P-242, *SAS Software: Changes and Enhancements, Release 6.08*
- SAS Technical Report P-252, *SAS Software: Changes and Enhancements, Release 6.09*
- *SAS Consultant's Guide: Supporting the SAS System, First Edition*
- *SAS Software: Changes and Enhancements, Release 6.12.*
- *SAS/ACCESS Software Changes and Enhancements: SQL Procedure Pass-Through Facility, Version 6.*

# Chapter 1, Installing the SAS® System

When you receive the SAS System for Windows, you are either installing a new version or release of the SAS System, or you are applying maintenance to your existing Release 6.12 SAS System. (If you are applying maintenance, you can skip this chapter and follow the instructions in Chapter 2, "Applying Maintenance to Your SAS System".)

This chapter discusses sample installation configurations and the four types of installations you can perform:

- ❑ Typical
- ❑ Compact
- ❑ Custom
- ❑ CD or Client

## Sample Installation Configurations

- ❑ Select `Typical` if you want to install all of the components on the SAS System CD, but do not need the Help files, Sample files, or Test programs.

- ❑ Select `Compact` if you are only interested in Data Step functionality. This will save hard drive space, but no procedures will be available.

- ❑ Select a `Custom` install and select all of the components if you want to install all of the components from the SAS System CD, including Help files, Sample files, and Test programs. Select `Custom` and select only the components you want installed if you want to install only some of the components from the SAS System CD to your local hard drive, or to a network location for personal use.

- ❑ Select `Custom` if you want to install selected components and define the options for each component installed from the SAS System CD to your local hard drive or to a network location for personal use. Select the components so that a check appears in the box beside the component name. To install only parts of a component, select `Options` after highlighting or selecting a component name. From the `Options` window you can then deselect the parts/options of a component that you do not want installed.

- Select `CD or Client` and then choose a `Full` install if you want to access the SAS System directly from the CD-ROM or from a shared network location provided a valid site license has been applied. Only system files and registry information are installed locally to your disk drive. If you do not have a valid site license applied, you will need to perform a `Selective Client` install selecting the `CORE` component. After the component is installed, you will be prompted to supply licensing information. For more information, see Appendix M, "Updating Your SAS System SETINIT".

- Select `CD or Client` and then choose a `Selective` install if you want to run the SAS System from a CD or network but would like to increase the speed of the CORE of the SAS System or some other components. Select the components so that a check appears in the box beside the component name that you want installed locally. The components you select here will run more efficiently because they will be accessed directly from the hard drive you install them to.

- Select `CD or Client` and then choose a `Selective` install if you want to run the SAS System from a CD or shared network location and would like to increase the speed of the CORE of the SAS System or some other components, but do not want all of a particular component installed. Select the components so that a check mark appears in the box beside the component name. To select only parts of a component, select `Options` after highlighting or selecting a component. From the `Options` window you can then deselect the parts/options of a component that you do not want installed.

## Installation Configuration for Network Administrators

To make the SAS System available so that users can either install or run the SAS System, it is recommended that you use one of the methods listed below. The first and second are preferable because they reduce the chances for variation between the original and secondary image.

1. Mount the CD on the network.

*Note:* Assuming network stability, this method has no variance from the original image.

2. xcopy the entire CD to the network using the following command:

```
xcopy d:\sas\*.* g:\sas /v/e/s
```

*Note:* This method will vary from the original image only if xcopy fails.

3. Use Setup to install the Reinstallation Support and all other applicable components.

*Note:* This method executes a very complex series of copy, update, registration, etc. operations that are intended to work, but inherently increases the potential for a difference between the original image and the network image. This option is meant to cover the European users who have an agent CD, but only a few of the components are licensed. For example, if CORE and Base SAS software are licensed, and you only want these components on the network with the SETINIT applied, install CORE, Base SAS, and Reinstallation Support applying the correct SETINIT at the end. Users can then install the SAS System from this installed version of the SAS System.

## External Installation Options

*Note:* The Win32s and Indeo Video driver software are not installed from the SAS System Setup program.

- ❑ If you need to install Win32s, Release 1.30.166, see Appendix C, "Upgrading to Windows 32s".

- ❑ If you want to install the Intel Indeo Video driver, you must exit Setup. From within File Manager or Explorer, move to the CD drive and then to the `\SAS\INDEO` folder. Double-click the `Setup.exe` file to start the Indeo installation. The installation will allow you to overwrite older releases of the Indeo driver. Follow the on-screen instructions. After it is installed, restart Windows.

- ❑ If you want to install the SAS ODBC Driver software outside of the SAS System Setup, in File Manager or Explorer, move to the CD drive. If you want to install the 16-bit SAS ODBC driver, move to the `SAS\ODBC\SETUPW16` folder; if you want to install the 32-bit SAS ODBC driver, move to the `SAS\ODBC\SETUPW32` folder. Double-click the `Setup.exe` file. This will start the SAS ODBC Driver installation. It will allow you to overwrite older releases of SAS ODBC Driver. Follow the on-screen instructions. After it is installed, restart Windows.

# Starting the SAS System Installation Process (for all install types)


Before you begin your SAS System installation, review the information in the section "Pre-installation Checklist".

The SAS Setup program enables you to install components of the SAS System and configure your SAS operating environment.

To start the SAS System installation process, complete the following steps:

1. Start Windows in Enhanced mode or have Windows 95 running. Close all other Windows applications.

2. Insert the installation media into the source drive. If you are running Windows 95 and have the AutoPlay feature enabled, Setup will start and you can skip the remainder of this section. If AutoPlay is not enabled, select `Start` and then `Run` and then proceed to Step 4.

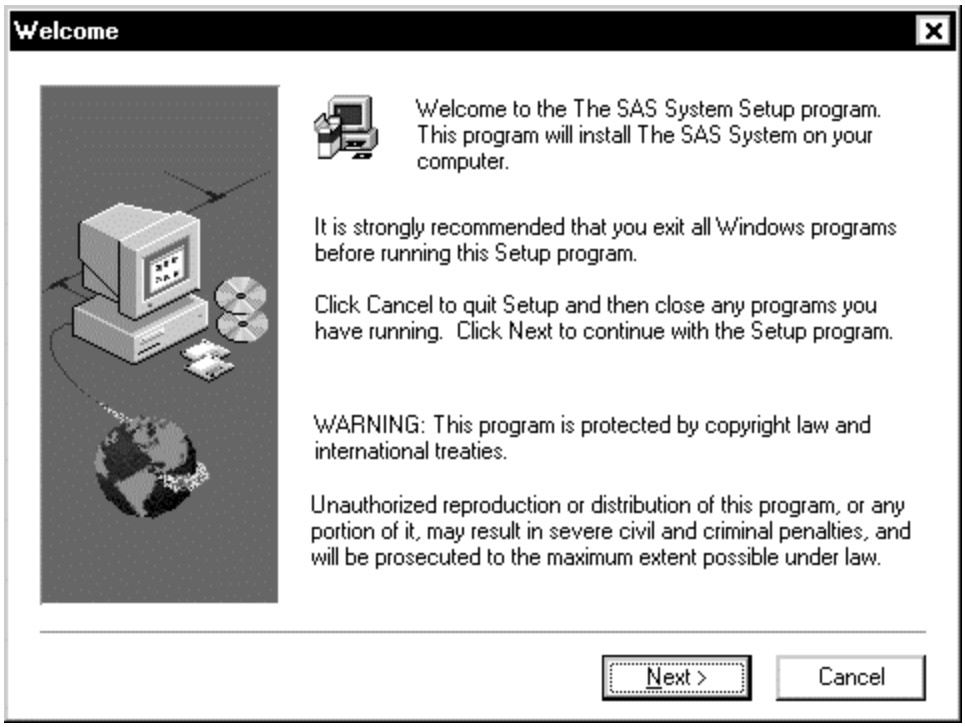
3. Select `File` and then `Run` from the Program or File Manager.

4. Type `<source_drive>:\SAS\Setup` to start the Setup program. If you are installing from diskettes, type `<source_drive>:\Setup`.

5. Type `<source_drive>:\SAS\Setup` if you are installing the SAS System from CD-ROM. Type `a:\Setup` if you are installing from diskettes.

If you are running under Windows 3.1 or Win 32s, the SAS Setup program examines your system to verify that you are running Microsoft Win32s, Release 1.30.166, as well as other system parameters. If you are not running Microsoft Win32s, Release 1.30.166 or later, you get a "Incorrect Windows Version" message to upgrade your system. If you have Windows 3.1 installed, Setup will terminate with a warning to install Win 32s from the installation media. Refer to Appendix C, "Upgrading to Windows 32s", for more information.

When the SAS Setup program is first started, a window indicating that Setup is initializing will be displayed for a few seconds as this initialization occurs.




The SAS System can be installed locally to your hard drive, to a personal network directory, or so that SAS components are referenced from the CD-ROM or shared network location.

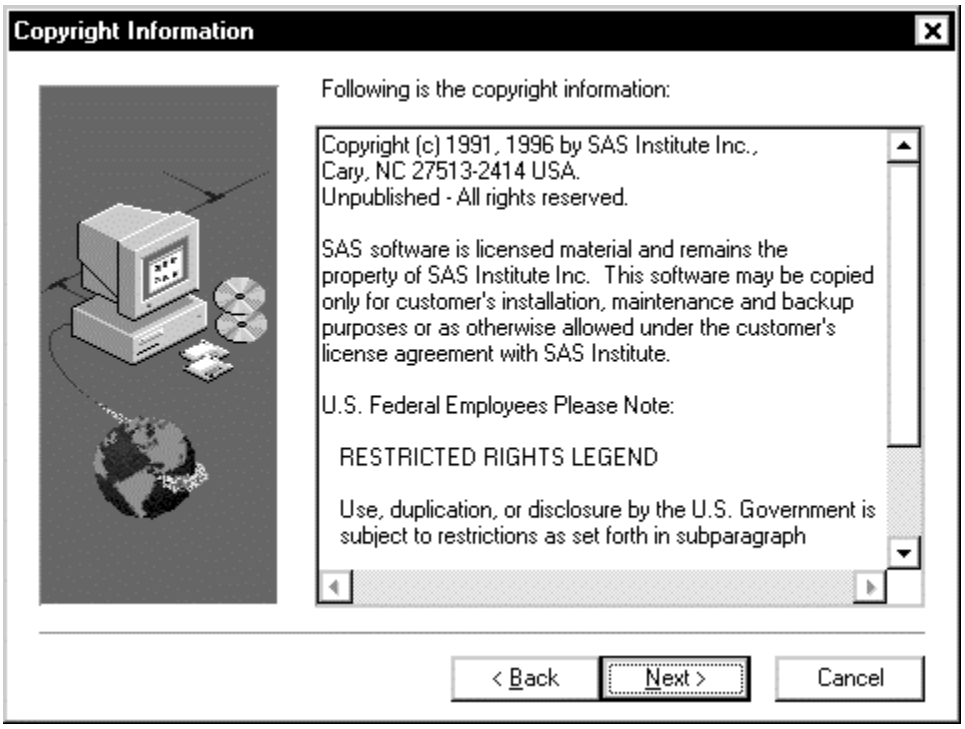
Setup can be terminated at any point during the install process by selecting `Cancel` or F3. You can also remove all components including system files and registry information by selecting the uninstall icon in the SAS System folder for Windows NT 3.51 and Windows 32s, or using the Add/Remove programs utility in the Windows 95 or Windows NT 4.0 control panel.

A default destination is set to a hard drive location that you can change by selecting `Change Folder`.

*Note:* There needs to be enough space on the drive you choose.

After you choose an installation type and a destination location, the Setup program determines if you have enough disk space to install the SAS System. If you do not have enough disk space, you can specify a different destination. Setup will also determine if a copy of the SAS System exists at the destination location. You can remove the copy of the SAS System or modify it during installation.

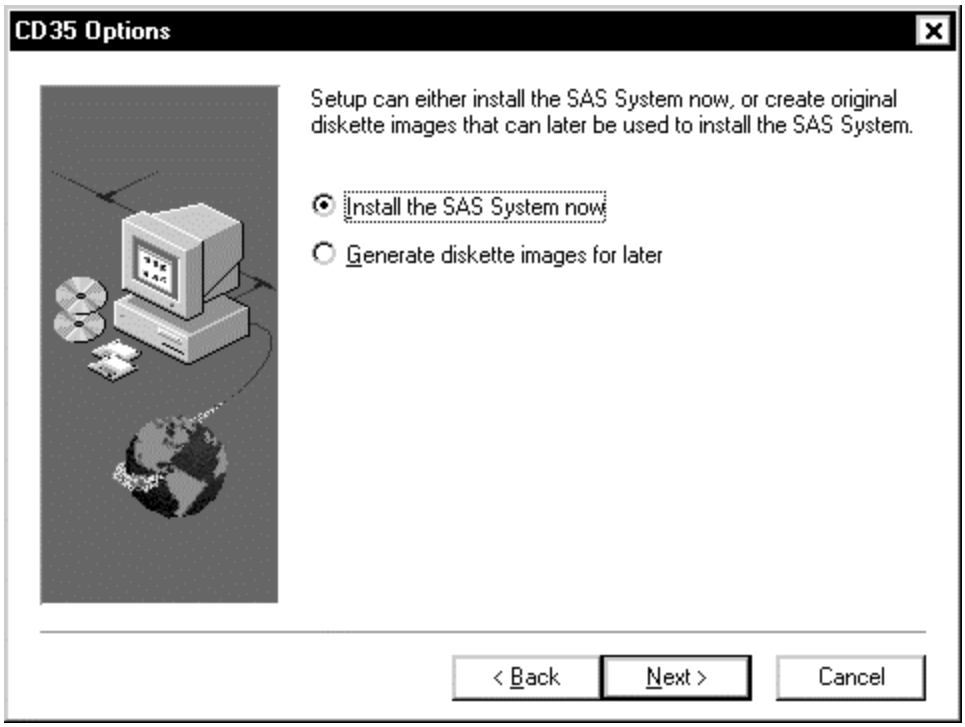
The `Copyright Information` window is displayed as shown below:




The `Copyright Information` window contains important information regarding SAS System components. After reading the copyright information, select `Next` to continue, `Back` to return to the Welcome window, or `Cancel` to exit Setup. If you choose to continue the installation, the component information will begin loading.

## Installing From a CD-35 Image
## Note: This method is only available if the SAS System is Release 6.12 (TS020), not Release 6.12 (TS025).

If you are running from a CD-35 image, you will be asked to either install the SAS System or generate diskette images. If you choose to generate diskette images, see Appendix P, "Generating Diskette Images" for more information. If you choose to install the SAS System, you will be asked to select the desired Setup type.




If you are not running from a CD-35 image, you will next be asked to select the desired Setup type. The following types are supported by the SAS Setup program.

Typical

installs the most typical options for all the components that are licensed for your site. This does not include Help files, Sample programs, and Sample data.

Compact

installs only the files necessary to start the SAS System. This installs the most typical options for CORE SAS software and the basic SAS System features and procedures contained in Base SAS software.

Custom

allows you to select components of the SAS System to be installed. Within each component are options that include required files and possibly Sample programs and Sample data. You can save disk space by not installing all of the component options, as only the required files are necessary for the basic operation of each component.

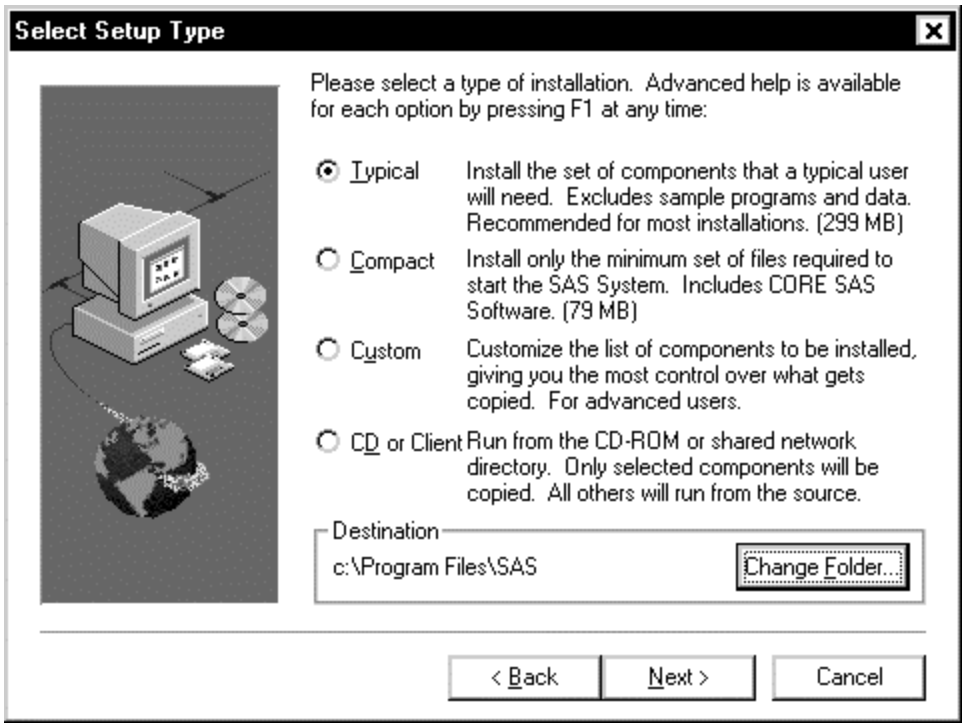
CD or Client

all or some of the SAS System components can be accessed from the installation CD-ROM or a shared network location. There are two types of client installations - `Full` and `Selective`. For a quick install, choose a CD-ROM `Full` install and only a few files will be installed locally. The SAS System components will be accessed from the CD-ROM or network.

During a `Full CD or Client` install, only system files and registry information are installed locally to your disk drive, whereas in a `Selective CD or Client` install, selected components are also installed locally to your hard drive.

In either case, the SAS System can be run as a private or shared user application. The CD-ROM installation is typically for the site that accepts poorer performance due to limited disk drive availability. Performance can be improved using a `Selective CD or Client` install because selected components can be installed to your local drive while accessing all remaining (uninstalled) components from the CD-ROM or shared network location.

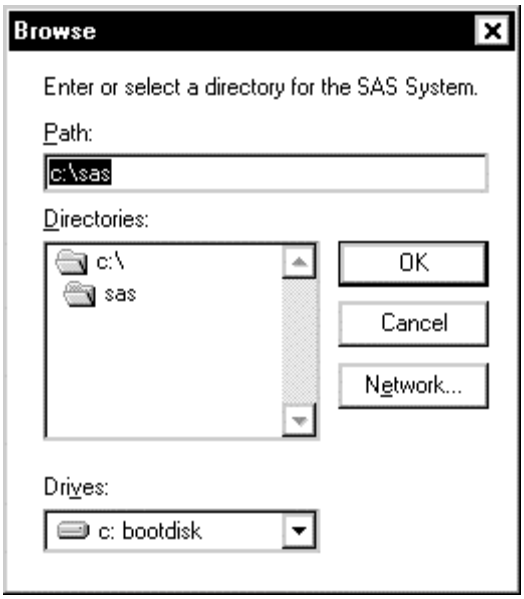
These choices are available from the `Select Setup Type` window as shown below:



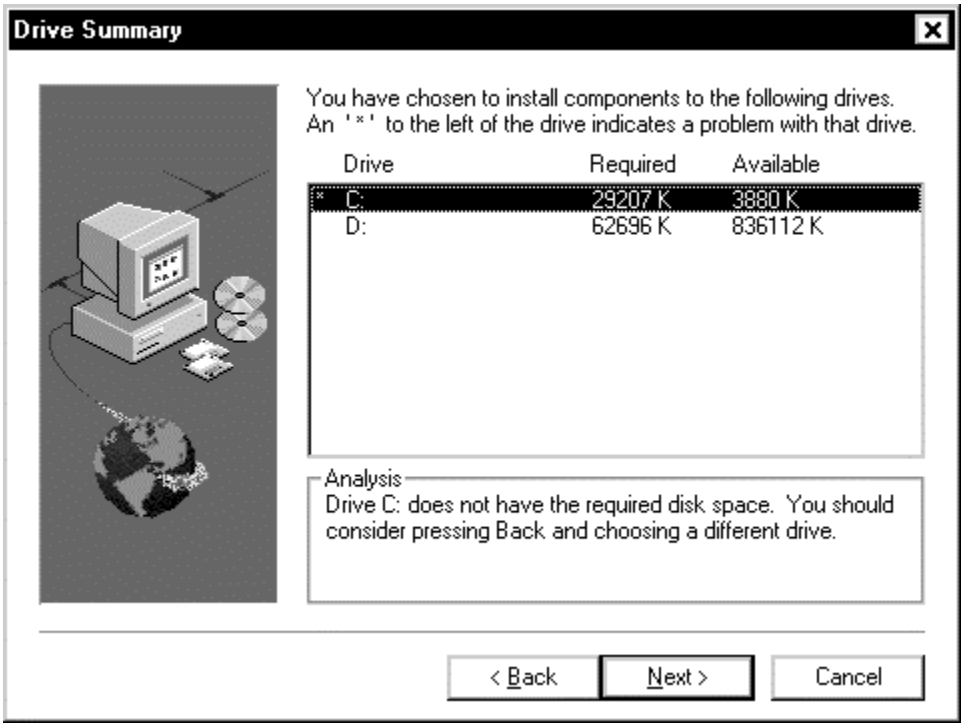

The following options are also available from the `Select Setup Type` window:

| Option | Description |
|---|---|
| `Back` | returns you to the previous window. |
| `Change Folder…` | displays the default location for the installation of components in the SAS System. You can also browse other drives or directories to select the desired installation directory. The directory you select becomes the default destination location for the remainder of the installation. This directory is also used as the working directory for SAS datasets and catalogs that you create while using the SAS System. |
| `Cancel` | exits Setup. |

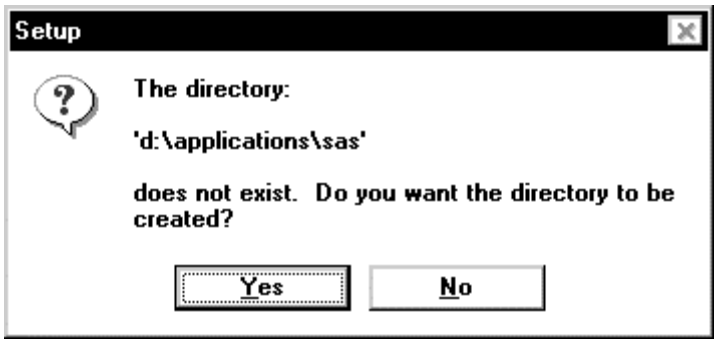
You can change the destination by entering or selecting a disk drive and directory name. Setup checks to make sure you have enough disk space.




If there is not enough disk space, the `Drive Summary` window displays an asterisk next to the drive(s) containing insufficient disk space. You can select `Back` to return to the previous screen, then select `Change Folder` to select a drive with enough available space.



If you have selected an installation directory that does not exist, you are given the opportunity to have the new directory created for you by SAS Setup as shown below:

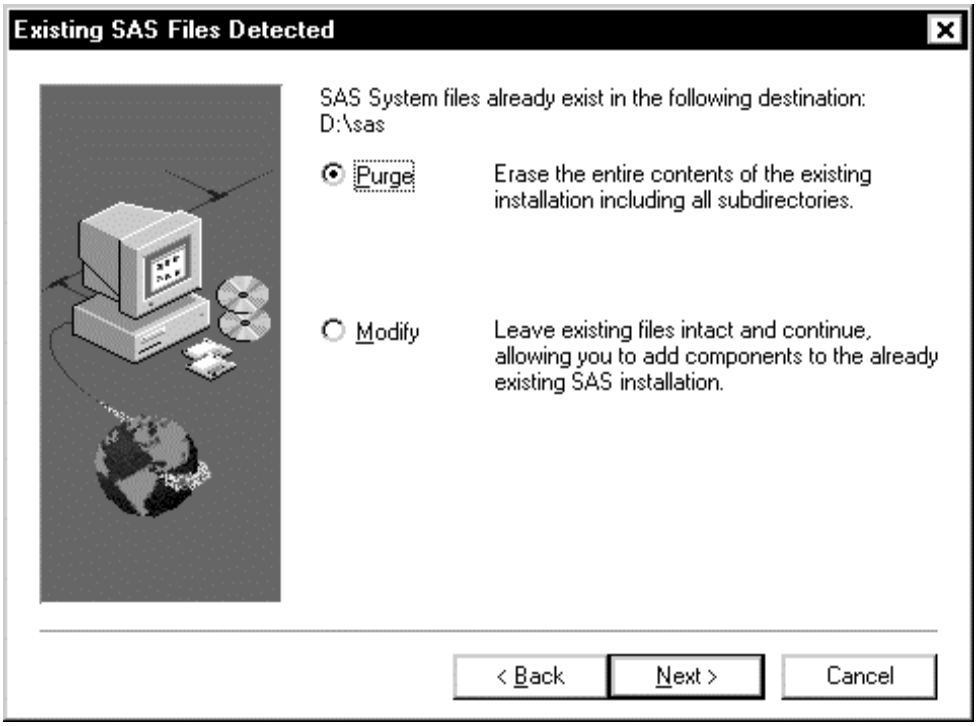



Select `Yes` to have the new directory created for you. Once the directory has been created, you are returned to the `Select Setup Type` window. If you select `No` or if SAS Setup is unable to create the directory you specified, you are returned to the previous window. The SAS Setup program cannot continue until you have specified an existing installation directory.

If you select a `Custom` installation, refer to "Performing a Custom Installation". If you select a `CD or Client` installation, refer to "Performing a CD or Client Installation" later in this chapter. The remainder of this section pertains to `Typical` and `Compact` installations.

# Removing or Modifying Existing SAS Files

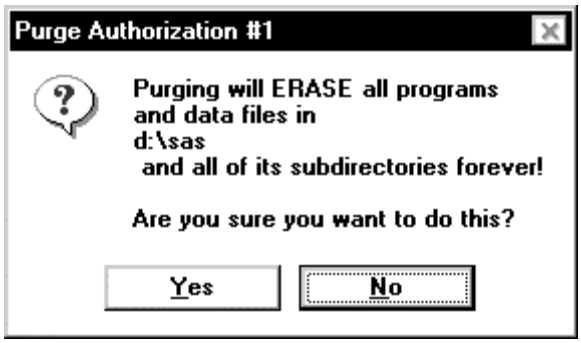
SAS Setup will detect any version of the SAS System present in the selected installation directory. You will have the opportunity to purge the existing copy, modify it, or select another directory as shown in the `Existing SAS Files Detected` window below:




Your options are as follows:

| | |
|---|---|
| `Purge` | erases ALL components, files, and subdirectories under the destination directory. This option also erases any user files stored in this location. |
| `Modify` | adds selections to the existing SAS directory. No components will be deleted. |

Caution! If you select `Purge`, note that ALL files under the selected directory are removed. SAS Setup notes this fact twice to avoid any confusion.




Caution! Selecting `Yes` purges all files and directories below the specified installation destination.

Once the purge has been selected and successfully completed, the actual file copying process of the SAS System files will begin into the selected installation destination.

If you select `Purge`, you may receive an error message indicating that Setup could not delete the files from this directory. Check that a process, including an MS-DOS prompt, is not running from this directory. If you cannot find another process using this directory but the directory is empty, then it is safe to ignore the message and continue.

Select `Abort` if you want to abort the purge. Select `Yes` if you want to retry the purge, and select `No` if you want to continue and ignore the files that the system could not purge.

If you are installing under Windows 32s or Windows NT, you will be asked in which Program Manager Group you want the SAS System icons installed. By default, a program folder named `The SAS System` will be created for you.

If you are installing on Windows 95, a shortcut is added to the Start buttons Programs menu.

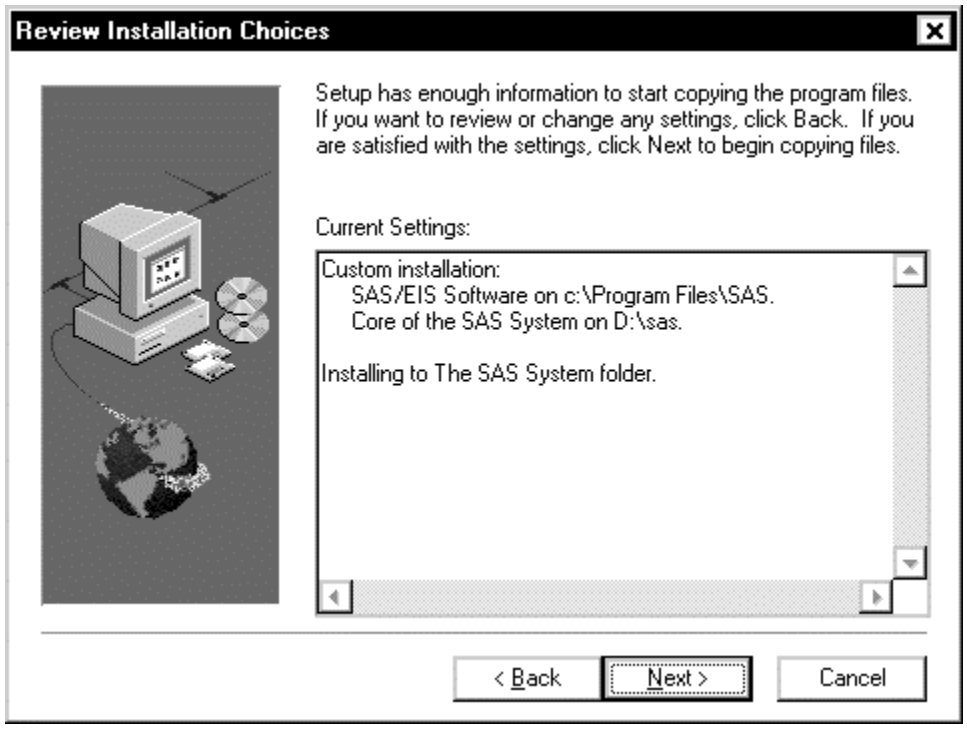
The SAS Setup installation process checks the operating system, as well as the components to be installed. Depending on the results of these checks, SAS Setup may prompt you for information about the following if they are required for your installation:

- ❑ Install ODBC Drivers.

*Note:* For more information, see the following sections, "Additional Installation Options" and Appendix E, "Setting Up the SAS ODBC Driver".

The external setup programs will execute after Setup has installed the SAS System.

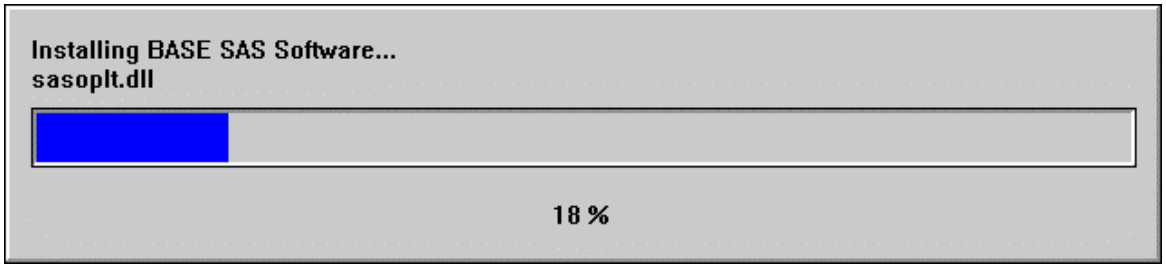
At this point, Setup has enough information to begin installing SAS components. You need to review the installation choices as shown in the `Current Settings` box in the screen below:



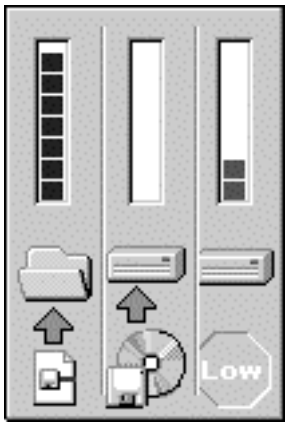

Select `Next` to begin installing the SAS System, `Back` to return to previous screens, or `Cancel` to exit Setup.

The following indicators are present while files are being copied to your system:

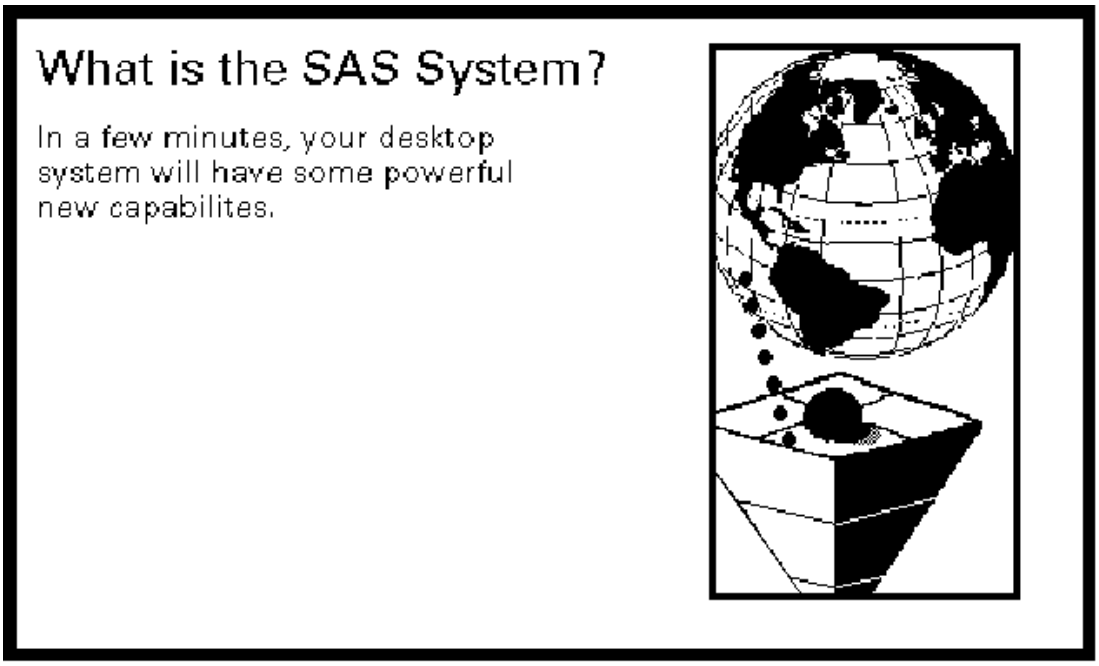
- The *Installation Status Bar* reports on the progress of the overall installation. It indicates the component currently being installed, the name of the file currently being copied, and the percentage of the entire installation completed.




- The *File Status Gauge* reports on the status of an individual file as it is copied:



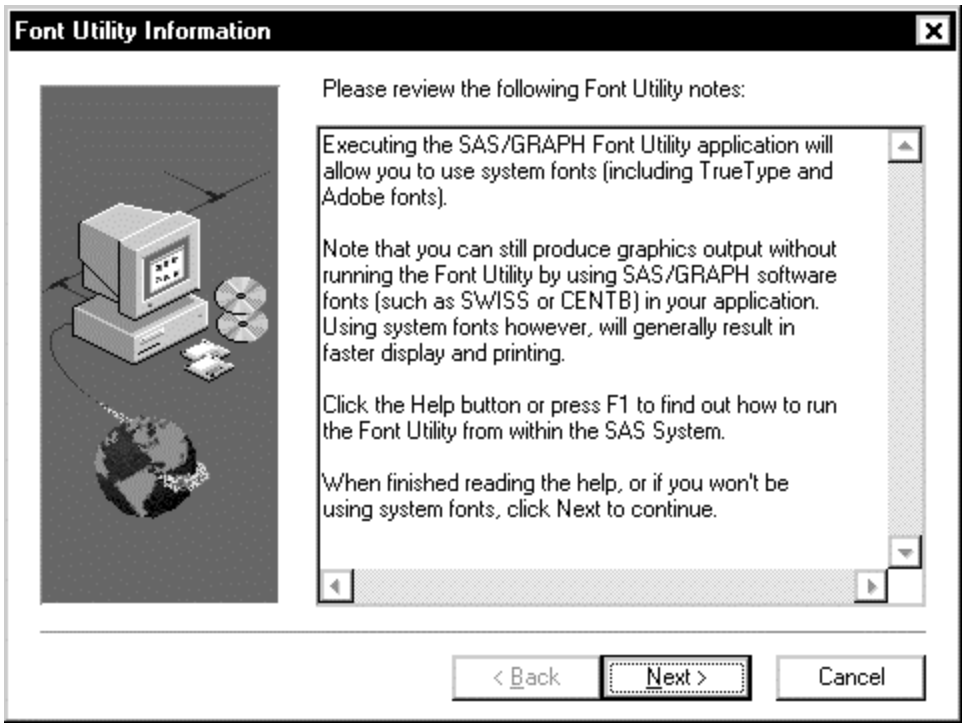
- ❑ As components are installed, a series of billboards are displayed. These will be used to inform you about component features and general information as the installation continues.



# The SAS/GRAPH Font Utility

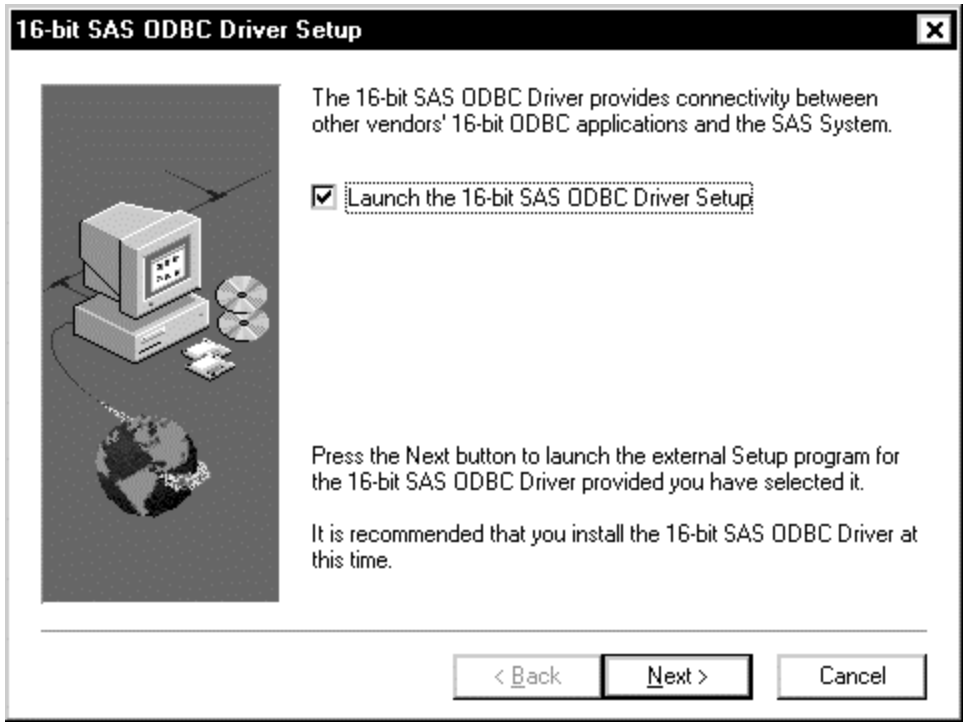
SAS/GRAPH software can output data to printing devices in addition to your screen. The font utility is designed to allow you to set up your own devices catalog and copy fonts you have installed on your system in to your devices catalog.

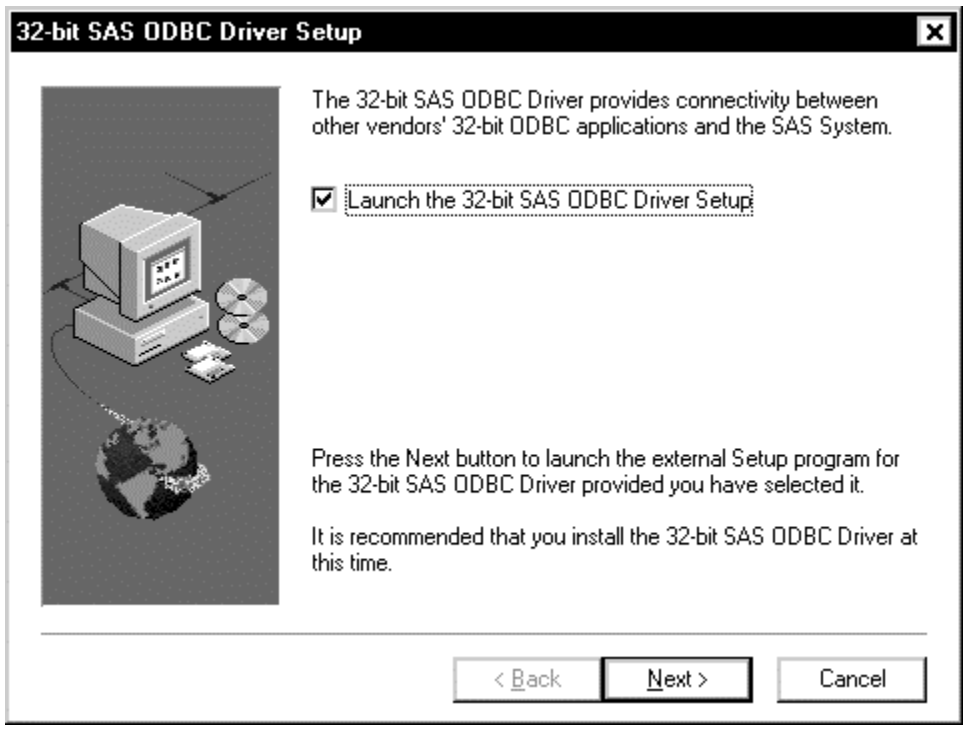
To run the SAS/GRAPH font utility, you must invoke the SAS System and then select `Utility Application` from the SAS System `Help` pull-down menu. Select `SAS/GRAPH Font Management Utility` and then select `OK`. If the hardcopy device information that is displayed is correct, select `OK`. If you need to change the device, select one choice for device type on the screen and then either enter your desired device name, or enter a `?` to display a selection list of values for the device name. After selecting the device type and providing the device name, select `OK` to continue or `GOBACK` to quit.



# Additional Installation Options

If the SAS Setup program determines that additional installation options are available, the following windows are displayed:



- 16-bit and 32-bit SAS ODBC Driver

  The SAS ODBC Driver allows you to access, update, and manipulate SAS data from your favorite ODBC-compliant applications, such as Microsoft Access, Microsoft Excel, Visual Basic, and PowerBuilder. The SAS ODBC Driver provides read access to databases such as IBM DB2 and ORACLE via SAS/ACCESS software running on remote SAS servers. Furthermore, SAS views can be defined to join database tables from different vendors, creating a virtual data warehouse for your ODBC-enabled applications.

  The SAS ODBC Driver supports three communication protocols to access your data, DDE, Network DDE, and TCP/IP. The user's client machine does not require the SAS System to be installed on the client machine when accessing a remote SAS server via ODBC. Accessing local SAS data requires Base SAS software to be installed on the client machine.

  DDE allows users with the SAS System installed on their local PC to access their local SAS data via ODBC.

  Network DDE allows users to access a remote SAS server that supports Network DDE (typically Windows NT).

  TCP/IP support allows users to access remote SAS servers on a variety of host platforms.

  A remote server requires Base SAS software, SAS/SHARE software, and SAS/SHARE*NET software enabled.

  Release 6.12 of the SAS ODBC Driver contains several new features to provide transparent access to your SAS data from your favorite ODBC-enabled applications.

  - Full compliance with ODBC date, time, and timestamp datatypes.
  - Support for the ODBC numeric, string, date, and time scalar functions, providing access to SAS functions through a standard ODBC interface.
  - The 32-bit SAS ODBC Driver supports all the new Windows 95 applications.
  - New, easy-to-use setup dialogs.
  - Improved diagnostics featuring ODBC-compliant "multi-layered" error reporting, which provides server- and driver-generated error messages.

  You should install either the 16- or 32-bit version of the SAS ODBC Driver depending on the version of Windows you are running and whether your ODBC applications are 16- or 32-bit.

On Windows 3.1, with or without Win32s, you can only install the 16-bit driver that is usable from both 16- and 32-bit applications.

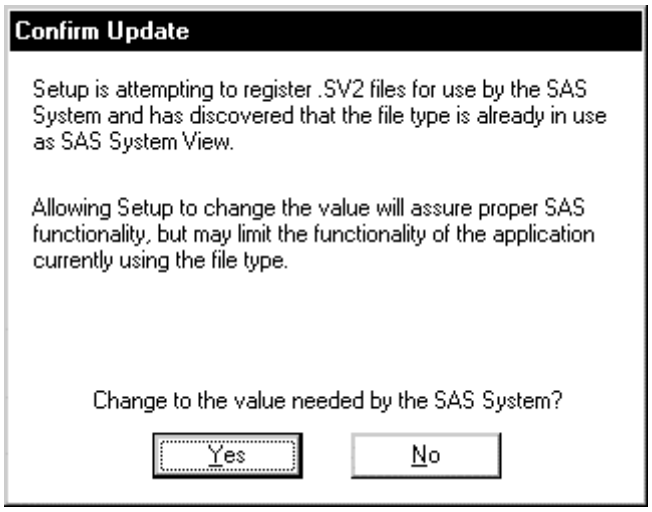
On Windows NT and Windows 95, you can install both the 16- and 32-bit drivers depending on your application needs. 16-bit applications can use both 16- and 32-bit drivers and hence can see data sources defined by each type of driver. 32-bit applications can only use 32-bit drivers and therefore can only see data sources defined to the 32-bit drivers. This occurs because Windows NT and Windows 95 allow thunking (16- to 32-bit translation) from 16- to 32-bit applications, but not from 32- to 16-bit applications. The ODBC Driver Manager handles all thunking issues.

After all of the SAS System files have been copied, each of these installation options will launch another setup program. Once these external setup programs are finished, you will be returned to SAS System Setup.

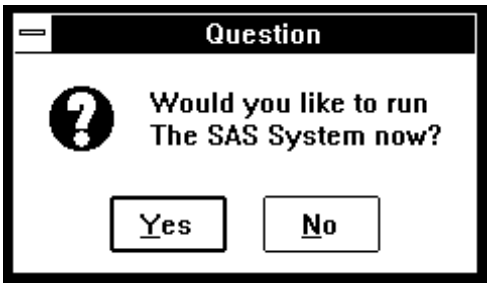
If you are installing SAS/CONNECT software, Setup will prompt you to install the SAS Job Spawner. Complete the steps outlined in the following section, "Installing the SAS Job Spawner".

## SAS Registry Information for Windows 95

If Setup attempts to register a file type that is already registered by another application, you will see a dialog entitled `Confirm Update`. You can choose to change the registry information for this file type. This means that when you click a file type registered by the SAS System, it will invoke the SAS System. For example, the file type `.sc2` could be registered by Microsoft Schedule + 7.0. This would conflict with SAS-registered file types and you would be given the opportunity to choose which application you want to register the file type.



The SAS System installation is complete. The following window is displayed:

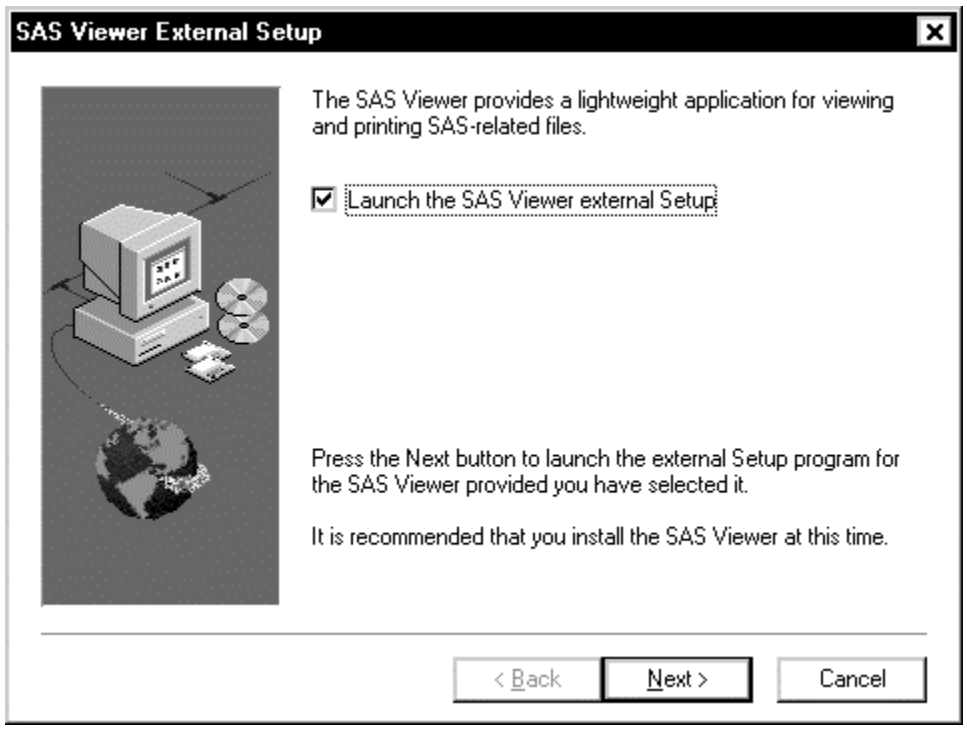



You can run the SAS System now by selecting `Yes` or select `No` to complete the SAS System Setup.


The SAS System installation is now complete. Select `OK` to exit the SAS Setup program and return to Windows.

# Installing the SAS Viewer

If you are installing Base SAS software on Windows NT or Windows 95, Setup will prompt you to install the SAS Viewer. The SAS Viewer is intended for the Windows 95 Explorer environment as a Quick Viewer for SAS data sets and catalogs. The application lets you view the contents of SAS data set and catalog files without using the SAS System or requiring the SAS System to be installed on your machine. You are free to distribute this program to allow other people to view your SAS data. For more information, view the `Readme.wri` file using Microsoft Word either directly from the installation media in the `SASVIEW/DISK1` folder, or after installation from the destination directory where you installed the SAS Viewer. The default is `c:\Program Files\The SAS Viewer\Readme.wri`.



## Installing the SAS Job Spawner

Setup will prompt you to install the SAS Job Spawner only if you are installing SAS/CONNECT software and meet the following criteria:

1. You must be running Setup under Windows NT.

2. You must be installing to the local hard drive or a removable hard drive, or performing a CD-ROM `Client` installation.

3. You must not be using any part of the SAS System from a network drive.

The SAS Job Spawner program resides on a remote host, listening for SAS/CONNECT client requests for connection to the remote host. After the SAS Job Spawner receives a request, it invokes the remote SAS session. For this release and subsequent releases of SAS/CONNECT software, all data that flow during signon from the local SAS session to the spawner program are encrypted. A spawner program is needed on the node that serves as the remote host. For more information, refer to *Changes and Enhancements for SAS/CONNECT and SAS/SHARE Software, Release 6.12*. If you choose to install the SAS Job Spawner manually at a later time, refer to "Configuring the SAS Job Spawner" in Appendix A, "Post Installation Setup for SAS/CONNECT Software".

## Performing a Custom Installation

With a `Custom` installation, you explicitly select the components you want SAS Setup to install to the installation destination you specified on your local drive or shared network location. `Typical` and `Compact` installations (as described earlier) do not allow you to select specific components to install from the installation media to your local drive, or to run the SAS System from CD-ROM.

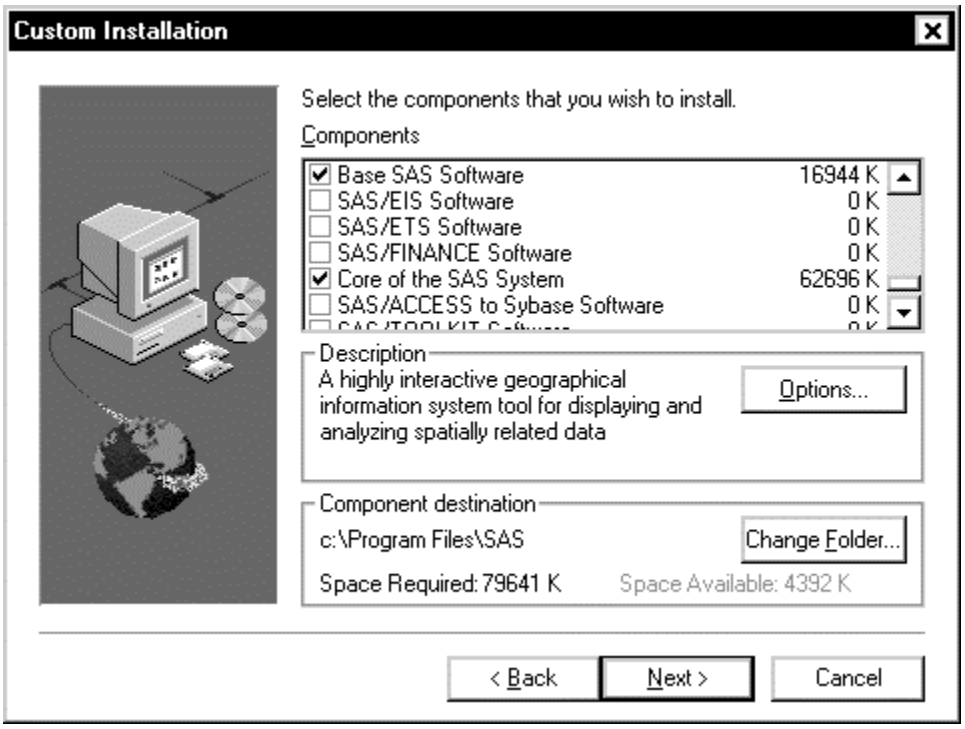
During the install, system files are copied to your Windows system directory and registry information is updated.

- ❏ SAS Component Files (BASE, CORE, GRAPH, and so on)
- ❏ Shared Windows DLLs/Components
- ❏ SAS Fonts
- ❏ SAS Registry Info (file types, actions, OLE Automation)
- ❏ SAS OLE Controls (SASEDIT, SASCOMBO)
- ❏ Shortcut/Icons
- ❏ Uninstall Icon or Add/Remove Programs Utility

As the registry information is updated, you are notified of any conflicts in defining file extensions and you are given the opportunity to override or keep the existing file definition.

Setup can be terminated at any point during the install process by selecting `Cancel` or the F3 button. You can also uninstall all components including system files and registry information by using the uninstall icon in the SAS System folder for Windows NT and Windows 32s, or the Add/Remove Programs utility in Windows 95.

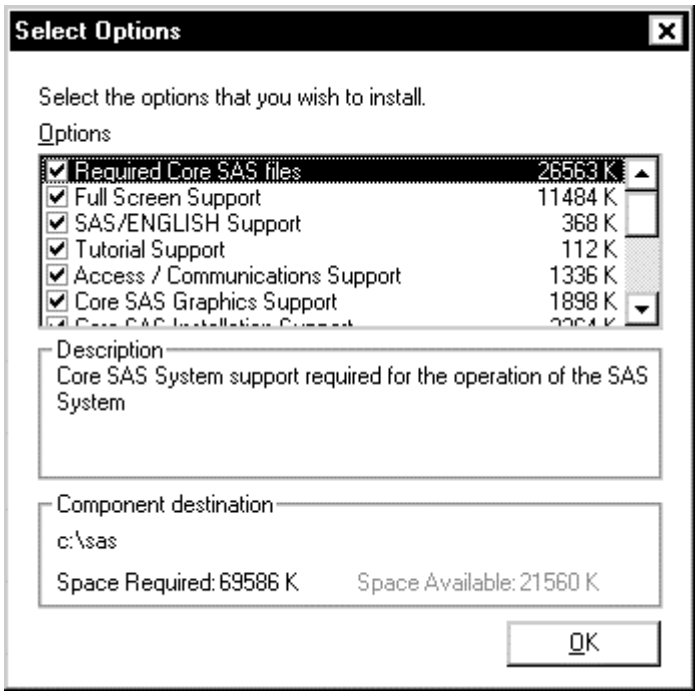
If you do not have enough disk space to install the selected components, you will have the opportunity to select a different destination or modify your component selection list.




Select the components so that a checkmark appears in the check box beside the component name. When a component has been selected, the amount of disk space required for installing it is displayed to the right of the component name. The `Description` field automatically changes to give you a brief description of the highlighted component.

As components are selected, the total amount of disk space required by all selected components is displayed in the `Component Destination` box. There is also a `Space Available` field that tells you how much disk space is available for the SAS System to be installed.

Select or deselect the components by checking or unchecking the box beside the component name.




To select options of a component, highlight the component and select the `Options` button. All options for a selected component are selected by default. To add or remove an option, select the check box beside the option name. The `Description` field automatically changes to display a brief description of the option you have highlighted.

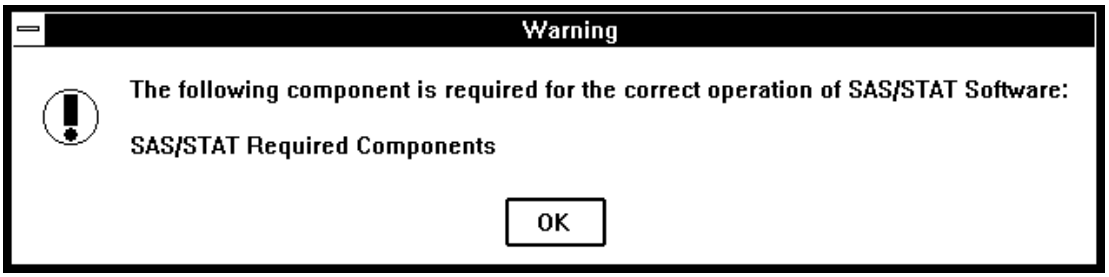
To find out more about each option, select the option name to highlight it. Information about the option is displayed in the `Description` field.

The `Space Required` field, located in the `Component destination` box, continuously refreshes to display the total amount of disk space required to install the selected components and options. You can save disk space by not installing all of the component options, as only the required files are necessary for the basic operation of the component. The amount of disk space required for each option is displayed to the right of the option name.

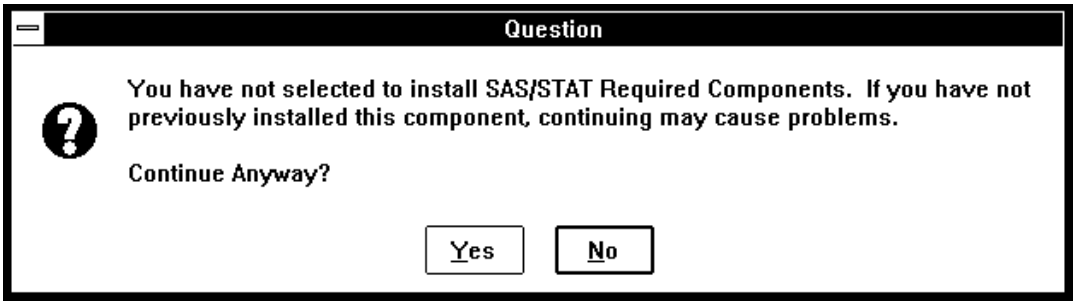
Continue selecting/deselecting components and options as necessary.

Many SAS System components have required options. Omitting the required option when selecting components for installation can result in component functionality problems. Setup will warn you if you deselect required components or options.

If required components have not been selected, the following window is displayed:




Select `OK` to indicate whether or not SAS Setup should continue with the current component selection. The following window is displayed:

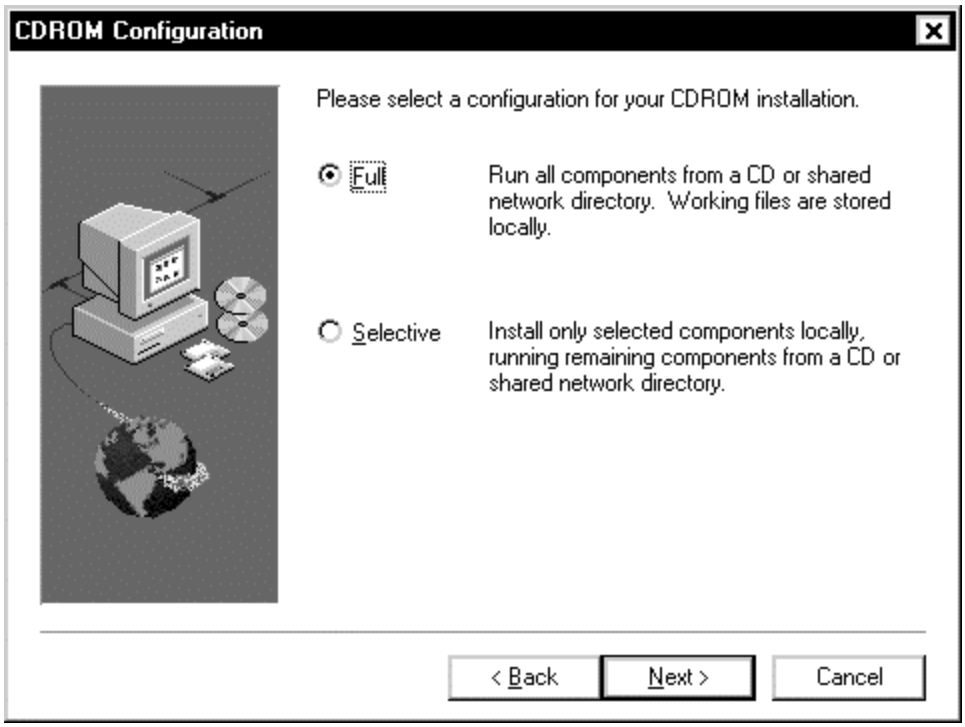



Select `No` to return to the previous window where you can select the required component or option.

Select `Yes` to continue installing the components you selected. Required components can always be installed at a later time.

## Performing a CD or Client Installation

There are two types of `CD or Client` installations, `Full` and `Selective`. In a `Full CD or Client` install, only system files and registry information are installed locally to your disk drive. In a `Selective CD or Client` install, selected components are installed locally to your hard drive.




In either client, the SAS System can be run as a private or shared user application. The CD-ROM installation is typically for the site that accepts poorer performance due to limited disk drive availability. Performance can be improved using a `Selective Client` install where selected components can be installed to your local drive while accessing all remaining (uninstalled) components from the CD-ROM or shared network location.

With a `Full Client` install, system-specific features are set up and the appropriate working directories for the SAS System are created on your local drive at an installation directory you specified. No SAS System components are copied to your local drive in this case. All SAS System components will be run from the CD or from a shared network location, provided the CD or the shared network location has a valid site license applied. If your CD does *not* have a valid site license applied, you will be prompted to supply licensing information. Additional system files that are required by the licensing process will be copied to your local drive. For more information, refer to Appendix M, "Updating Your SAS System SETINIT".

With a `Selective Client` install, you select which components you want installed to your local drive or shared network location. Remaining components will be run from the CD or a shared network location. Any necessary working directories or files will be stored locally on your disk drive.

If you choose a `Selective` install, see "Performing a Custom Installation" for more information.

## Troubleshooting

The SAS Setup program checks your system for various features and will display an advisory window if a problem is detected. The advisory window will not prevent the installation from continuing, but will note that a potential problem has been encountered that can prevent the SAS System from functioning correctly.

Microsoft Windows Issues:

For Microsoft Windows, the following problems may be detected and reported:

- Setup has determined that the correct version of Windows 32s is not installed on your system. Refer to Appendix C, "Upgrading to Windows 32s" for more information.

- Setup has determined that `SHARE.EXE` has not been installed on your system.

  SHARE is required for the proper operation of 32-bit Windows applications such as the SAS System for Windows. To run SHARE, execute the following command from a DOS window:

```
c:\dos\share.exe /1:500 /f:5100
```

Requirement that CORE SAS software be installed:

During a custom installation, CORE SAS software must be selected or already installed.

Setup modifies files in `CORE`, so do not specify a location that is the installation media or a network copy of from where you are installing the SAS System.

If you have CORE located in a separate directory, you will need to specify explicitly where the `config.sas` file is located when invoking the SAS System from the MS-DOS command line as shown in the following example:

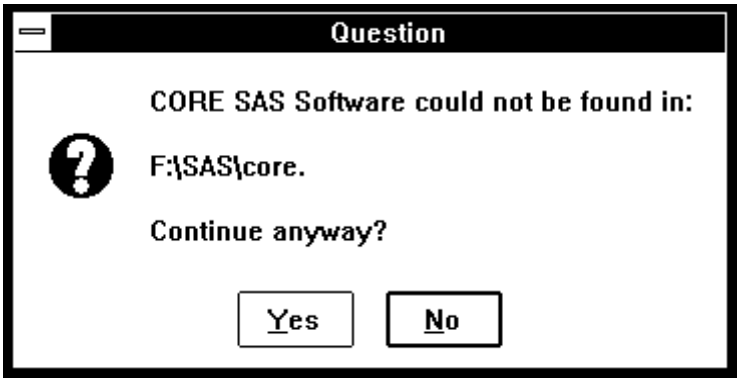
```
win d:\sasdir\sas.exe -config c:\sas\config.sas
```

The `SASFOLDER` environment variable in the `config.sas` file should also be set to where the `SASUSER` and `SASWORK` directories are located.

If you have not selected CORE SAS software, the following window is displayed:


SAS Setup has detected that CORE SAS software has not been selected for installation. CORE SAS software is required by all other SAS System components. Select `OK` to be given the opportunity to indicate to which directory CORE SAS software has been previously installed. The following window is displayed:


Provide SAS Setup with the location of the CORE SAS software. Enter the installation directory of CORE and select `OK` to continue. If CORE has not been previously installed, or you are uncertain as to where it was installed, select `Cancel` to return to the `Select Setup Type` window.



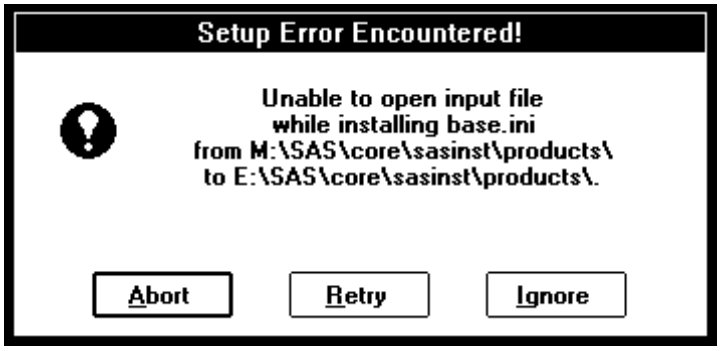

The above window indicates that SAS Setup was unable to find CORE SAS software at the location you designated. Select `No` to return to the previous window where you can designate the installation location of CORE SAS software.

Select `Yes` to continue, and the SAS software components you previously selected for installation will be installed.

File installation errors:

If a problem is encountered during the installation of the SAS System, an error window will be displayed. This window will indicate the name of any file currently being copied and a brief explanation of the problem. Press the `HELP` button for more detailed information about each particular error.

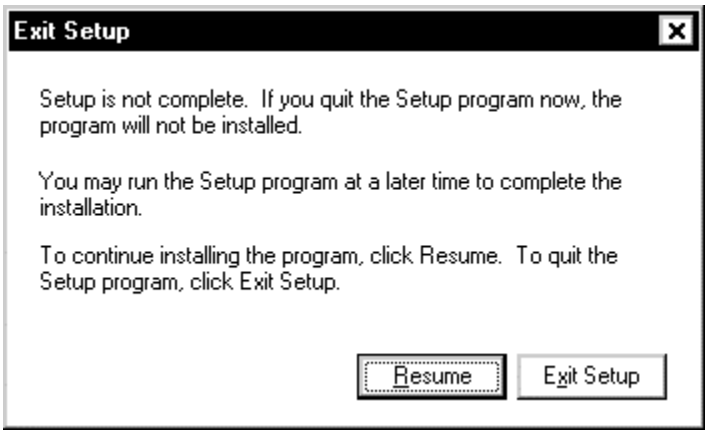
In this example, an input file cannot be installed, possibly resulting from the CD-ROM being dismounted or a network access error.




## Exiting SAS Setup

At any time while SAS Setup is running, you can select `Cancel` (or press F3 if Cancel is unavailable) to terminate the installation. The SAS System will not be completely installed if you exit prior to completion. You can run the SAS `Setup` program at a later time to complete the installation.

If you are installing SAS over an existing SAS System and you exit SAS Setup prematurely, you can jeopardize the integrity of the existing SAS System.



# Chapter 2, Applying Maintenance to Your SAS® System

This chapter provides instructions for installing maintenance to your SAS System under Windows from CD-ROM. There is no method available for installing maintenance from diskettes.

## Installing Maintenance from CD-ROM

If you received maintenance for the SAS System on CD-ROM, complete the instructions in this chapter to apply maintenance.

## Starting the SAS System Maintenance Setup Process

*Windows 3.1*

1. Start Windows in Standard or Enhanced mode.
2. Insert the installation media into the CD-ROM drive.
3. Select `File` → `Run` from the Windows Program Manager or File Manager.
4. Type the following command:

   ```
   <source_drive>:\SETUP
   ```

   For example, if the source media is in drive E:, type

   ```
   E:\SETUP
   ```

*Windows 95 or Windows NT*

1. Insert the installation media into the CD-ROM drive.
2. Select `Run...` from the `Start` menu on the taskbar.
3. Type the following command:

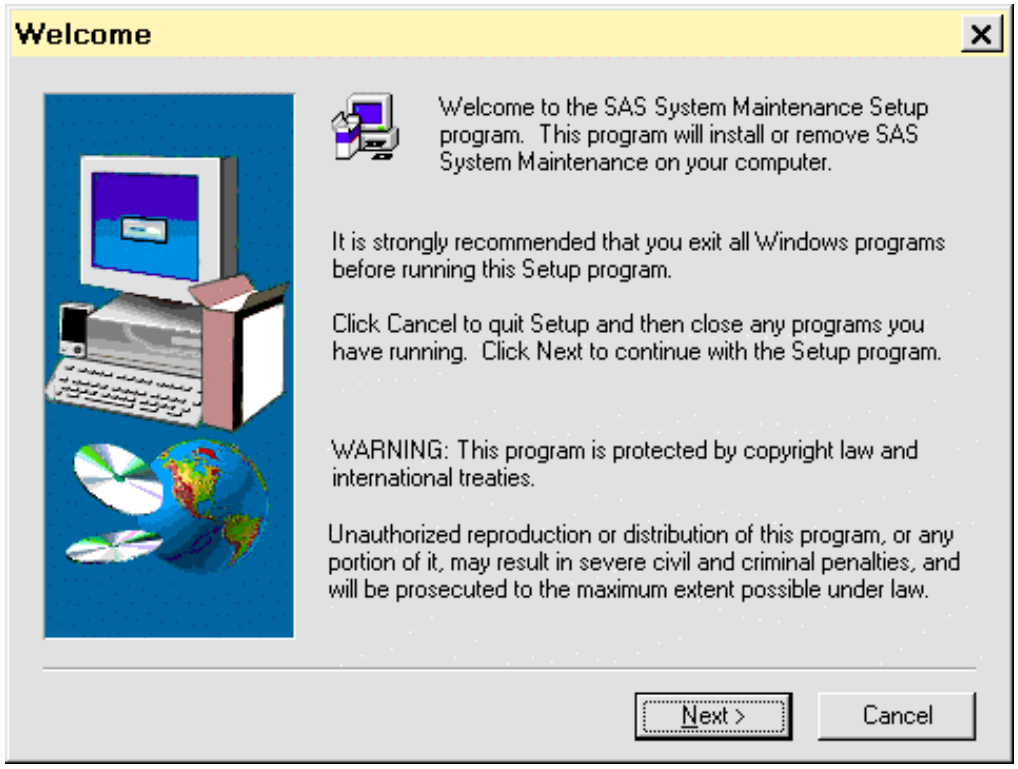
   ```
   <source_drive>:\SETUP
   ```

   For example, if the source media is in drive E:, type

   ```
   E:\SETUP
   ```

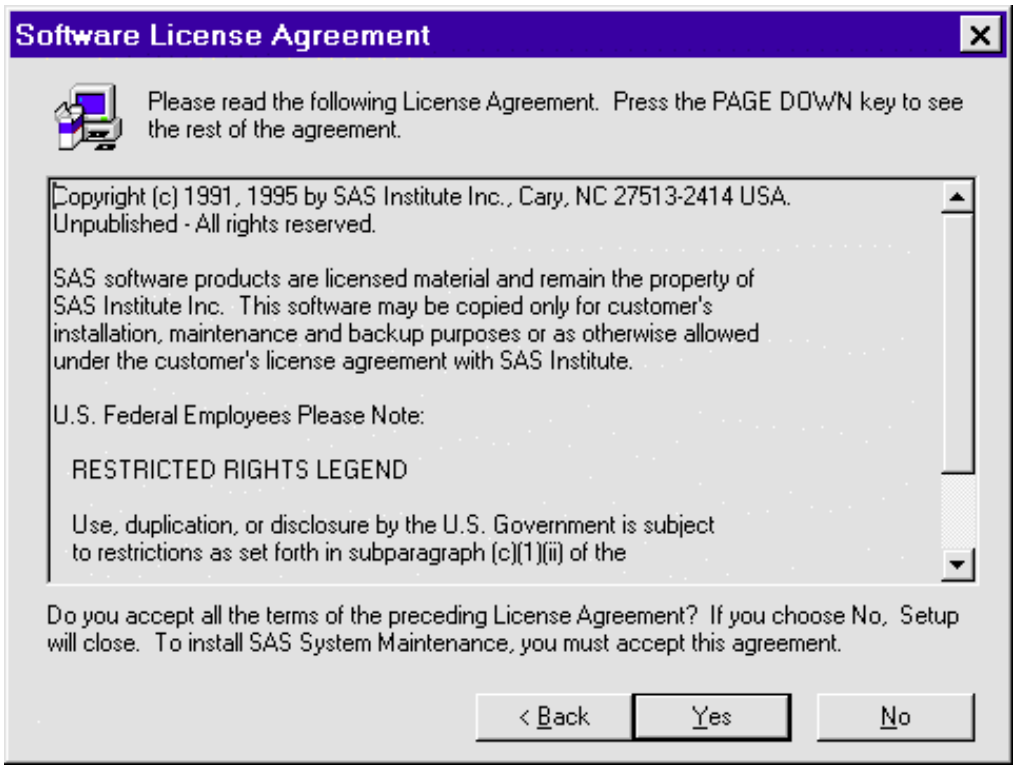
# Installing SAS System Maintenance

After the initialization of the Setup program, the Welcome window is displayed as shown below.



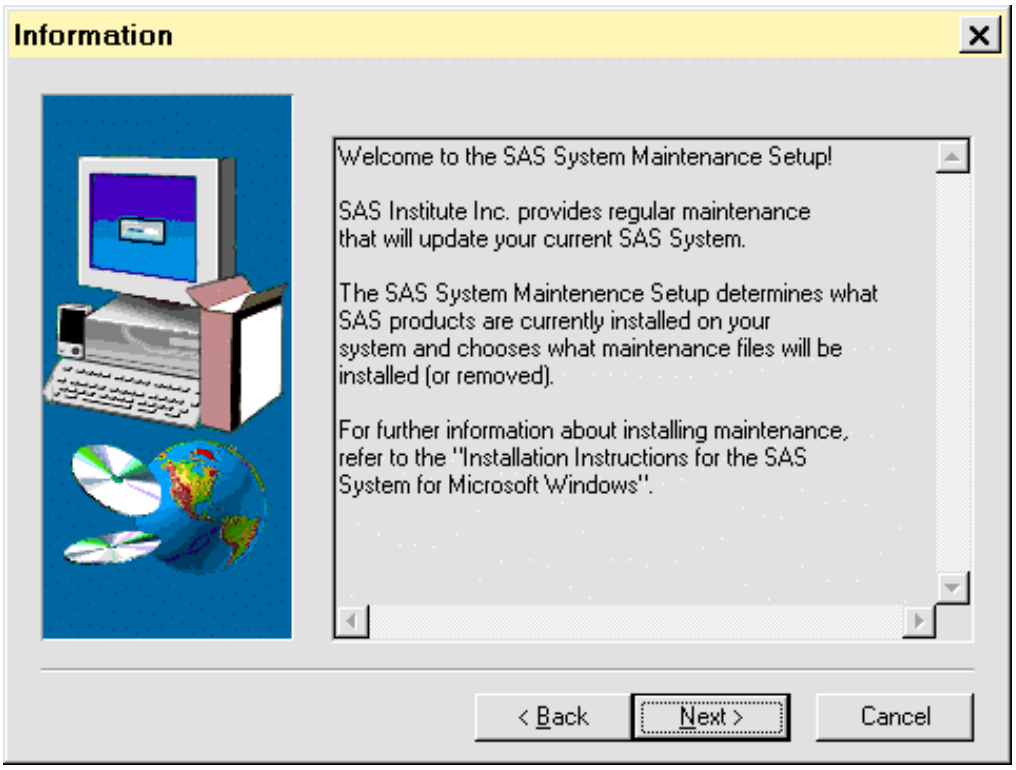

*Suggested Action*: Click `Next`.

The next window displayed is the Software License Agreement window. In order to install the maintenance, you must accept the terms set forth in the license window.



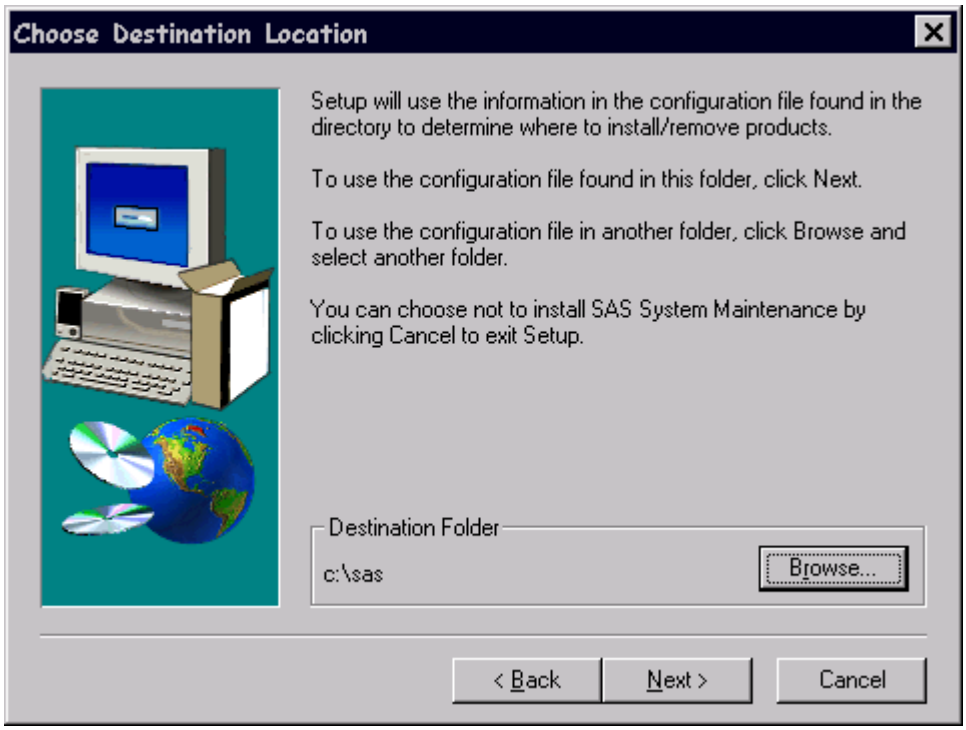

*Suggested Action*: Read the copyright information. Click `Yes` to accept the terms.

The next window is the Information window, which provides a brief description of the maintenance Setup program.



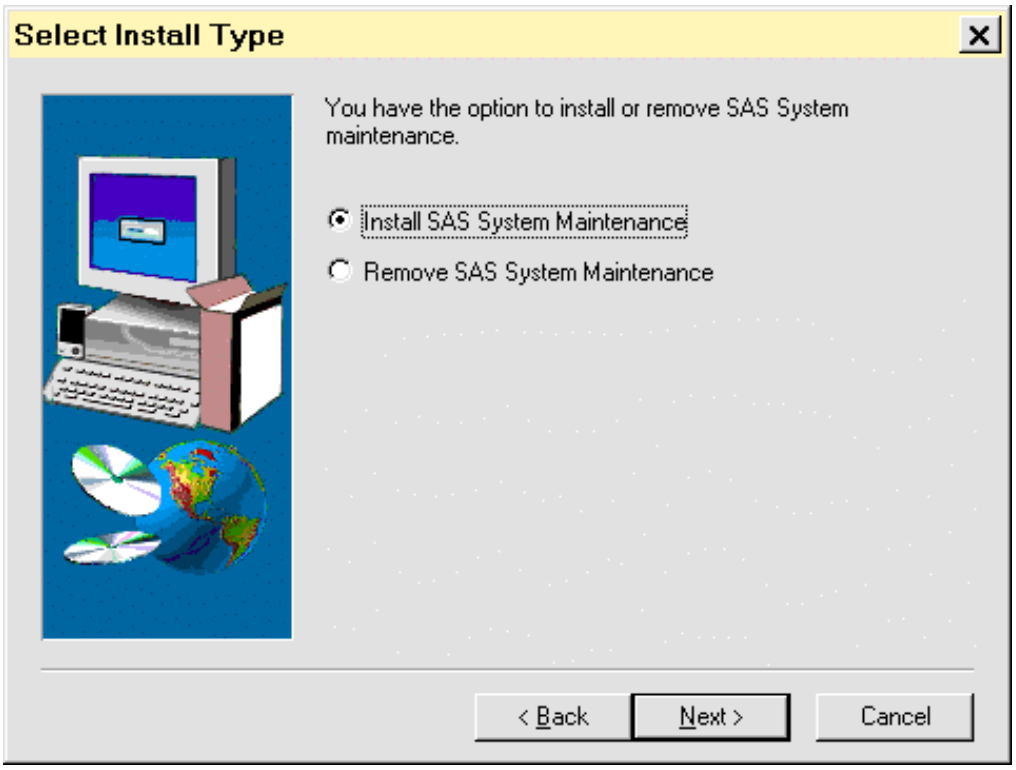

*Suggested Action*: Click `Next`.

Next the Choose Destination Location window is displayed. The maintenance Setup program determines what files to install and where to install them using the information provided in the SAS configuration file.



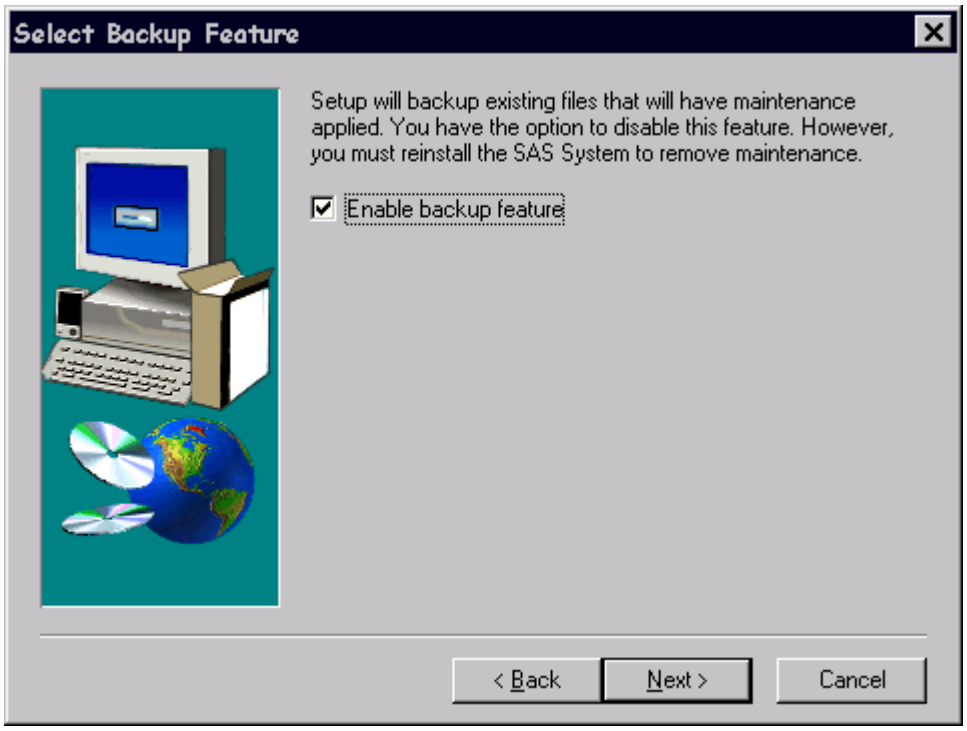

*Suggested Action*: Specify the directory where the SAS configuration file is located and then click `Next`.

From the Select Install Type window, you have the option to install the maintenance on the CD-ROM or remove maintenance after it has been installed.



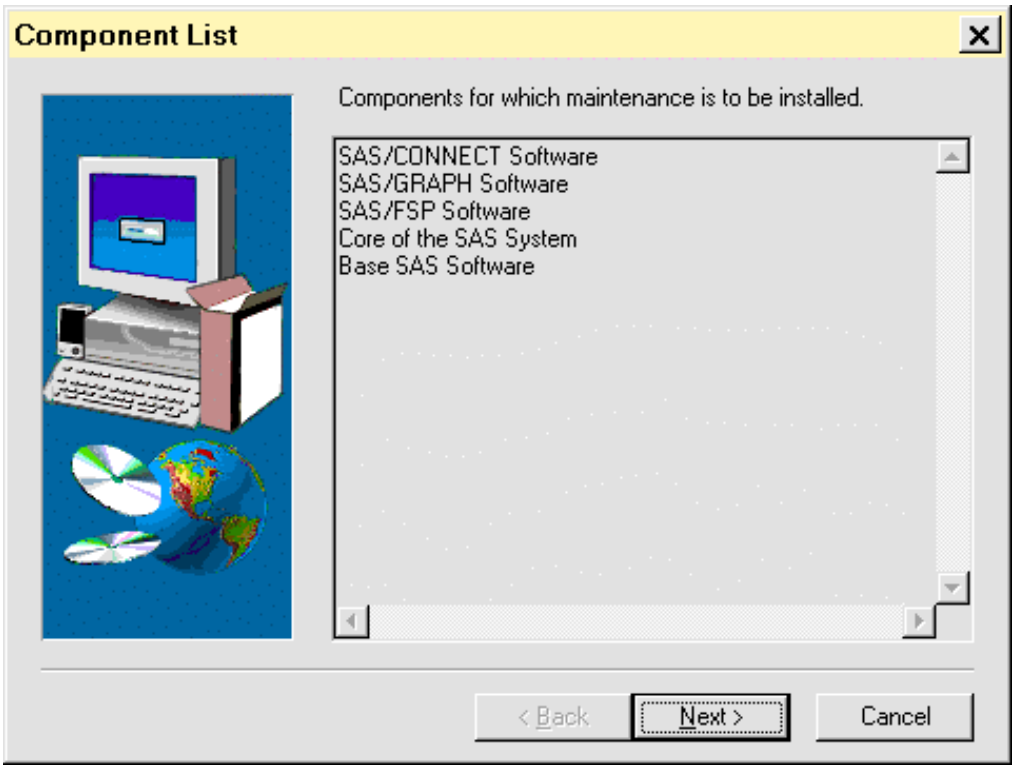

*Suggested Actions*: Select `Install SAS System Maintenance` then click `Next`.

Setup will make a backup of existing files for which maintenance is installed. You have the option of disabling this feature from the Select Backup Feature window shown below. If you deselect the `Enable backup feature` check box, you will not be able to remove maintenance. In order to return to the pre-maintenance SAS System, you would need to reinstall the SAS System from the production media.



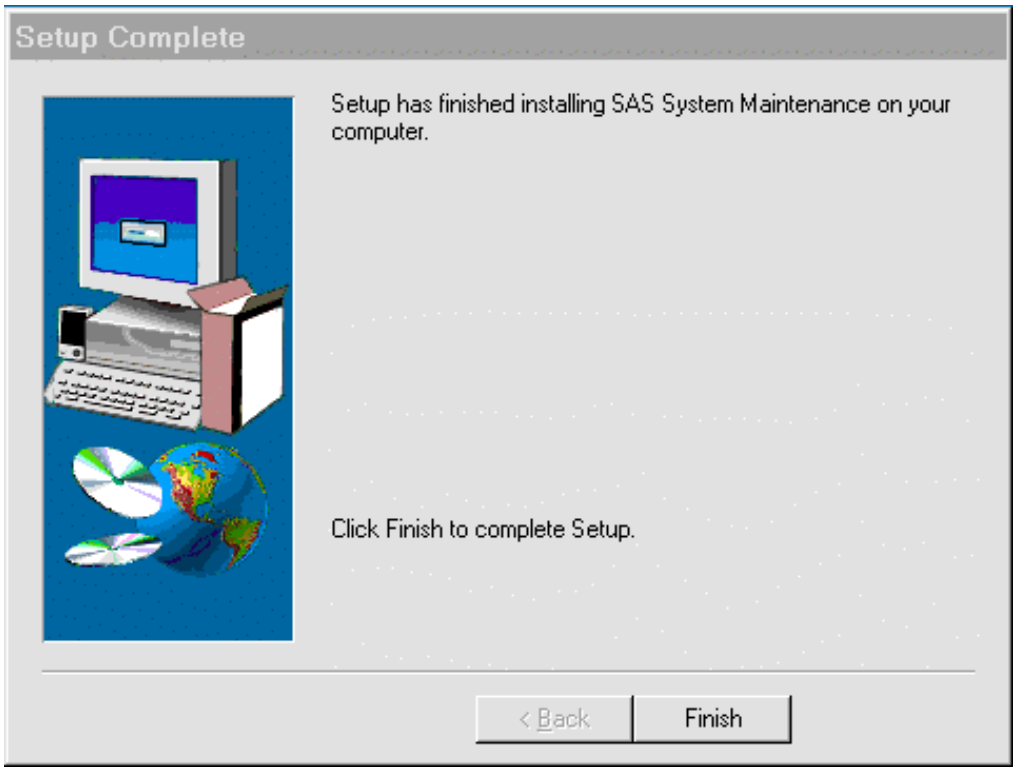

*Suggested Actions*: Enable the backup feature, then click `Next`.

After the setup program has determined what products should be installed, it displays the list of products in the Components List window shown below.




*Suggested Action*: Review the products in the list. If the product list is correct, click `Next`. Otherwise, click `Cancel` then verify that the information in the configuration file is correct.

If the maintenance files have been installed successfully, the Setup Complete window is displayed as shown below.

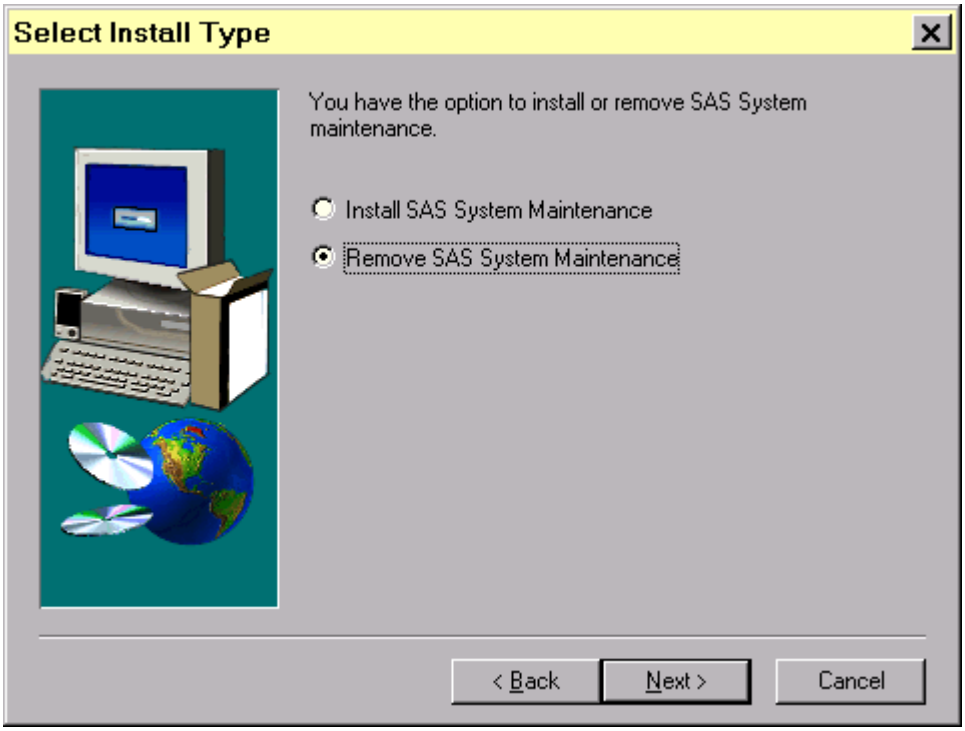



*Suggested Action*: Click `Finish`.

## Removing SAS System Maintenance

After maintenance has been applied to the SAS System, you may uninstall the maintenance using the maintenance Setup program. Follow the steps as given in the section "Installing SAS System Maintenance", selecting `Remove SAS System Maintenance` in the Select Install Type window as shown below.

*Note:* Setup should not be used to remove maintenance if the backup feature was disabled during installation.




## Notes about the Maintenance Setup

*File Backups*

During the installation of maintenance, Setup creates a backup of existing files. The backups are stored in the folder `!SASROOT\Backup`. For example, a backup of `sasfreq.dll` would be created in `!SASROOT\Backup\base\sasexe` with the name `sasfreq.dll`. Only one backup version is created. If disk space is at a minimum, there is an option to disable the backup feature.

*Installation Types*

There are five types of installations to perform when installing the SAS System: Typical or Compact, Custom, Client/Full, and Client/Selective. The following information describes the behavior of Setup for each of the installation types.

*Typical or Compact Install*

With a Typical or Compact install, components are installed on the local machine. All pre-selected components are installed to the same directory.

Setup determines what components are installed and where by referencing the configuration file. It then installs the appropriate maintenance components.

*Custom Install*

With a Custom install, all products are installed on the local machine. You choose what components (and options within components) to install and where.

Setup determines what components are installed and where by referencing the configuration file. It then installs the appropriate maintenance components.

Setup does not determine what options of a component have been installed. For example, if only Base SAS Required Files and Base SAS Reporting Files were selected to be installed from the Base component, all maintenance for Base is installed rather than just those files that apply to the Base SAS Required Files and Base SAS Reporting Files.

*Client/Full Install*

With a Client/Full install, all components are accessed on a network or from the CD-ROM. The following are created on the local machine: configuration file, an uninstall file, `SASUSER` directory, `SASWORK` directory, and `SASCFG` directory.

Setup determines what components are available by referencing the configuration file on the local machine. If write access is not permitted to the network image of the SAS System, Setup displays that maintenance cannot be applied. If write access is allowed, Setup installs the appropriate maintenance components.

*Client/Selective Install*

With a Client/Selective install, components are installed either locally and on a network or CD-ROM. You choose what components (and options within components) to install and where.

Setup determines what components are installed and where by referencing the configuration file on the local machine. With the structure of the configuration file, if a component is found on the local machine and on the network, the local copy is the only one that is updated. If write access to the network is not permitted for all components, Setup updates the local components. You must verify that the network has been updated as well.

Setup does not determine what options of a component have been installed. For example, if only Base SAS Required Files and Base SAS Reporting Files were selected to be installed from the Base component, all maintenance for Base is installed rather than just those files that apply to the Base SAS Required Files and Base SAS Reporting Files.

## Reinstallation Support

The SAS System can be "re-installed" from a network copy. If maintenance is applied to the network copy, all re-installations should perform a Custom or Client/Selective install choosing maintenance as one of the components. If not all the maintenance components are to be installed, select the appropriate options within the maintenance component. For example, if Base SAS, SAS/GRAPH, and CORE are to be installed, you must select the Base, Graph, and Core options within the maintenance component. Otherwise, all maintenance components will be installed.

All other installation types may be incomplete as new files may be added to the SAS System during maintenance.

# Chapter 3, The Directory Structure of the SAS® System

The following subdirectories of the SAS directory are created when the SAS System is installed.

`SASROOT`:

the root of the SAS System. It contains the CORE directory.

`SASROOT\component\SASEXE`:

contains the executable SAS software files.

`SASROOT\component\SASHELP`:

contains the SAS help files and catalogs.

`SASROOT\component\SASMACRO`:

contains the SAS macro files.

`SASROOT\component\SASMSG`:

contains the SAS message files.

`SASROOT\component\SAMPLE`:

contains the sample library programs.

`SASROOT\component\SASTEST`:

includes the test stream programs.

`SASROOT\CORE\SASINST`:

includes the installation process software.

`SASROOT\CORE\SASDLL`:

contains the host executable SAS files.

`SASROOT\BASE\SASSAMP`:

contains native format sample programs.

SASROOT\CORE\WINHELP:

contains Windows format help files.

SASROOT\CORE\SASMISC

contains sample AVI, WAV, TIF files and the SASNULL Driver.

SASROOT\CONNECT\SASLINK:

contains portions of SAS/CONNECT software.

SASROOT\USAGE\SASHELP:

contains SAS Notes files.

SASROOT\CORE\SASOCX:

contains SAS OLE controls files.

SASROOT\SASCFG:

contains the configuration files for the SAS Desktop application.

# Chapter 4, Invoking the SAS® System

You will execute the SAS System differently depending on the version of Microsoft Windows and the type of shell that you are running.

The Explorer shell is distinguished by a Start button in the bottom left corner of the screen. This interface is generally found on Windows 95 and Windows NT 4.0.

A non-Explorer shell is an older shell and does not contain the Start button. This interface is generally found on Windows 32s and Windows NT 3.51.

- Under Explorer shells, select the SAS icon from the Start button/Programs menu that was created when you installed the SAS System. Under non-Explorer shells, select the SAS icon in the Program Manager group that was created when you installed the SAS System.

- Under Explorer shells, select the `Run` command from the Start button menu. Under non-Explorer shells, select the `Run` command from the File pull-down menu on the Program Manager or File Manager menu bar.

  Supply the full path to both SAS.EXE and the CONFIG.SAS file for the SAS System installation you want to execute as shown in the following example:

  ```
  C:\SAS\SAS.EXE -config C:\SAS\CONFIG.SAS
  ```

  *Note:* The **`-config`** option is required.

- If you are running Windows 32s (or the Windows 95 command prompt only), you can start both Windows and the SAS System with a single command. This is useful for machines that load Windows strictly for the purpose of running the SAS System.

  Execute SAS as shown in the previous example, but pass the command to 'WIN' as follows:

  ```
  WIN C:\SAS\SAS.EXE -config C:\SAS\CONFIG.SAS
  ```

  *Note:* The **`-config`** option is required.

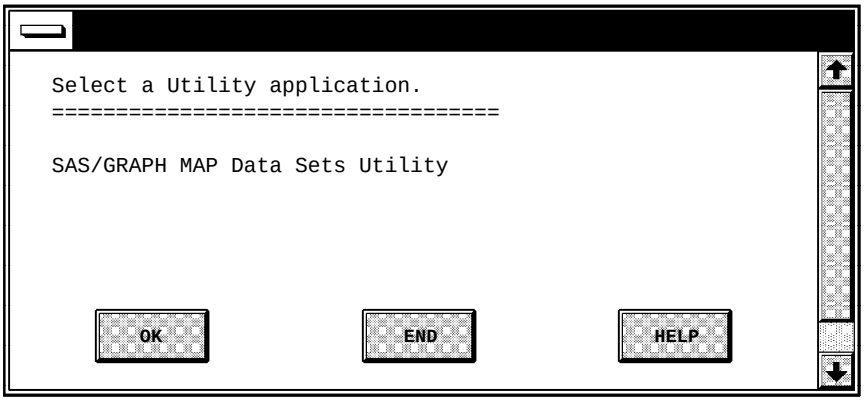
For more information on running the SAS System under Windows, refer to *SAS Companion for the Windows Environment, Version 6, First Edition* and *Microsoft Windows Environment: Changes and Enhancements to the SAS System, Release 6.11.*

# Chapter 5, Using the Utility Application

The Utility Application provides a framework for invoking several utility features of the SAS System. The list of utility features is dynamic, and what you receive depends on the components of the SAS System that you license. When you install the CORE of the SAS System, the Utility Application is automatically installed for you. For more information about the Utility Application, refer to *SAS Consultants Guide: Supporting the SAS System.*

You can access the Utility Application through the `Help` pull-down on the SAS AWS action bar. When you select the Utility Application, the SAS System determines which utility features are installed, displays a list of the features, and lets you make a selection. If no utility features are currently installed, a message to this effect is displayed in the `Utility Application` window.

An example of a utility feature of the SAS System is the ability to compress and decompress SAS/GRAPH map data sets. The map data sets must be decompressed before you can use them with SAS/GRAPH software. Selecting this feature allows you to decompress any compressed map data set. You can also use this feature to compress a map data set that you have previously decompressed but are not currently using. Compressing unused map data sets saves disk space.



# Chapter 6, Technical Support Services

Direct technical support is provided by SAS Institute to the designated SAS Installation Representative and SAS Support Consultant(s) at your site. These individuals should be the initial contacts for any user who needs technical assistance. Many programming problems result from a misunderstanding of how the software works, or a failure to use correct syntax. An experienced SAS Support Consultant can spot these errors quickly. These individuals can also search the SAS Notes database to see if a solution for your problem is provided. If the SAS Installation Representative or SAS Support Consultant cannot solve your problem, they can contact the Institute for further assistance.

SAS Institute provides technical support via the World Wide Web, by phone, mail, electronic mail, or dial-up computer access.

For technical support via the World Wide Web, use the following URL:

http://www.sas.com/ts/

For technical support by phone, call (919) 677-8008 between the hours of 9 a.m. and 8 p.m., Eastern Standard Time, weekdays. For technical support by mail, address all correspondence to:

SAS Institute, Inc.
Technical Support Division
SAS Campus Drive
Cary, NC 27513-2414

Electronic mail access is available to SAS Installation Representatives and SAS Support Consultants through the Electronic Mail Interface to Technical Support (EMITS). This facility allows you to track a technical support problem or add information to a previously reported problem. The following lists additional electronic support that the Technical Support Division provides:

TSNEWS-L Mail and File List

allows you to receive the latest information from SAS Institute's Technical Support Division.

Anonymous FTP

allows you to send or receive information from SAS Institute Technical Support using FTP.

Electronic Fax Service

allows you send and receive faxes more quickly.

# Appendix A, Post-Installation Setup for SAS/CONNECT® Software

The first section in this appendix, "Storing and Locating SAS/CONNECT Script Files", describes the use of the sample script files shipped with SAS/CONNECT software. The remaining sections in this appendix list supported software for access methods available on Windows 32s, Windows 95, and Windows NT respectively, and outline configuration procedures for those access methods requiring additional configuration.

*The access methods supported for the SAS System on Windows 32s* are EHLLAPI, DECNET, NETBIOS, TELNET, TCP/IP, APPC, and CPIC. These methods are described in the order listed. See the section for the access methods that you are using at your site for requirement information.

*The access methods supported for the SAS System on Windows 95* are EHLLAPI, DELNET, NETBIOS, SPX, TELNET, TCP/IP, and APPC. These methods are described in the order listed. See the section for the access methods that you are using at your site for requirement information.

*The access methods supported for the SAS System on Windows NT* are EHLLAPI, DECNET, NETBIOS, SPX, TELNET, TCP/IP, and APPC. These methods are described in the order listed. See the section for the access methods that you are using at your site for requirement information.

Refer to *SAS/CONNECT Software: Usage and Reference, Version 6, Second Edition* and *SAS Software: Changes and Enhancements, Release 6.12* for information on the access methods supported by other systems.

## Storing and Locating SAS/CONNECT Script Files

Several sample script files are shipped with SAS/CONNECT software. SAS/CONNECT software uses these script files to establish a connection to a remote SAS session.

The `SASSCRIPT` configuration option points to the location of the SAS/CONNECT script files. The `SASSCRIPT` option is used by SAS/ASSIST software and can be used by user-written SCL applications.

Under Windows, the script files are installed into the `!SASROOT\CONNECT\SASLINK` directory by default. The following line is added to the `CONFIG.SAS` file when SAS/CONNECT software is installed:

```
-SASSCRIPT !sasroot\connect\saslink
```

If you want to move the script files to another directory, you must edit the `CONFIG.SAS` file and update the `SASSCRIPT` option with the new directory location. This option can also be specified from the `OPTIONS` statement in DMS.

# System Configuration for Access Methods Supported Under Windows 32s

The access methods supported for the SAS System on Windows 32s are EHLLAPI, DECNET, NETBIOS, TELNET, TCP/IP, APPC, and CPIC. These methods are described in the order listed.

## EHLLAPI

For the EHLLAPI access method, a supported emulation package must be installed on the Windows node. The following emulation products are supported:

- Attachmate's EXTRA for Windows Version 4.3+
- IBM'S Personal Communications/3270 Version 4.0+
- Wall Data's Rumba Version 3.1+
- Any emulation program that supports the EHLLAPI or WinHLLAPI standard.

Sample `CONFIG.SYS` files, as well as other information are included on the install media in `!SASROOT\CONNECT\SASMISC`. Refer to the `README.WNS` file for details. The EHLLAPI access method requires that the supported emulation package be listed in the Autoexec Path statement as shown in the following example:

```
path=C:\ehllapi_package;%Path%
```

## DECNET

The DECnet access method for the SAS System for Windows, Release 6.12 allows you to use a Windows PC with Pathworks as a SAS/CONNECT or a SAS/SHARE client.

- You must have Pathworks for DOS and Windows V5.1 or higher. The DECnet and WINSOCK components must be installed. Installing the DECnet component does not imply that the WINSOCK component is also installed. Check your Pathworks installation instructions for more information on installing WINSOCK.

## NETBIOS

For the NETBIOS access method, SAS/CONNECT software uses the Windows interface to the IBM-compatible NETBIOS that is loaded into DOS. Therefore, you should be able to use software from any vendor providing an IBM-compatible NETBIOS product. The following two packages have been verified by the Institute:

- IBM's LAN Support Program
- Novell's NetWare Requestor for DOS

Sample `CONFIG.SYS` files as well as other information, are included on the install media in `!SASROOT\CONNECT\SASMISC`. Refer to the `README.WNS` file for details.

## TELNET and TCP

Using the TELNET or TCP access method, you can connect to any supported platform on the TCP/IP network that is running a release of the SAS System that has the corresponding access method support, and has SAS/CONNECT software installed. With the TCP access method, one of the supported TCP/IP products must be installed on any node, local or remote, that you want to use with SAS/CONNECT software. For the TELNET access method, a supported TCP/IP package must be installed on the local node. The remote node requires a TELNET DAEMON to be configured on its TCP/IP software but does not require a supported TCP/IP product to make the node accessible through TELNET. The following TCP/IP products are supported:

- Novell's LAN Workplace for DOS Version 4.2 +
- Microsoft's LAN Manager Version 2.1 +
- any vendor package that provides a Winsock V1.1+API.

*Note:* SAS/CONNECT software does not support Version 1.0 of the WINSOCK.DLL module. However, it does support Version 1.1 and above. The TCP/IP and TELNET access methods require that the Winsock V1.1 compliant vendor software be listed in the Autoexec Path statement as shown in the following example:

```
path=c:\tcp.package;%Path%
```

## APPC

Information is provided as a reference for establishing an environment to use SNA LU6.2 communications with the peer-to-peer capabilities provided in APPC (Advanced Program-to-Program Communications) within your SAS applications. This information is included on the install media in the `!SASROOT\CONNECT\SASLINK` directory. Refer to the `README.WNS` file in this directory for details.

*Note:* Client-side functionality is available with SAS/CONNECT and SAS/SHARE software, as well as, server functionality with SAS/SHARE software.

One of the following software packages is required to run the APPC access method with the SAS System:

- ❑ Microsoft's SNA Server, Version 2.11 SP1 (Service Pack 1) or subsequent versions

- ❑ Any program that supports WOSA (Windows Open Services Architecture) APPC (WinAPPC) standard.

## CPI-C

Information is provided as a reference for establishing an environment to use SNA LU6.2 communications with the peer-to-peer capabilities provided in CPI-C (Common Programming Interface for Communications) within your SAS applications. This information is included on the install media in the `!SASROOT\CONNECT\SASMISC` directory. Refer to the `README.WNS` file in this directory for details.

*Note:* Client-side functionality is available with SAS/CONNECT and SAS/SHARE software, as well as, server functionality with SAS/SHARE software.

One of the following software packages is required to run the CPI-C access method with the SAS System:

- ❑ Microsoft's SNA Server, Version 2.11 SP1 (Service Pack 1) or subsequent versions

  This software package supports the WOSA (Windows Open Services Architecture) specification (WinCPIC).

- ❑ Wall Data's Rumba APPC Engine, version 2.0 with ZB0APC10 PTF applied.

  This software package supports the CPI-C 2.0 specification with WinCPIC extensions.

- ❑ Any program that supports WOSA CPI-C (WinCPIC) or CPI-C 2.0 standards.

# System Configuration for Access Methods Supported Under Windows 95

The access methods supported for the SAS System on Windows 95 are EHLLAPI, DECNET, NETBIOS, SPX, TELNET, TCP/IP, and APPC. These methods are described in the order listed.

## EHLLAPI

For the EHLLAPI access method, a supported emulation package must be installed on the Windows node. The following emulation products are supported:

- Attachmate's EXTRA Personal Client, Version 6.1+
- Wall Data's Rumba 95/NT, Version 5.0+
- IBM's PCOM (Personal Communications) Version 4.1+
- McGill Systems TCP3270, Version 3.0+
- Any Windows 95 32-bit emulation program that supports the EHLLAPI or WinHLLAPI standards.

Additional information is included on the install media in `!SASROOT\CONNECT\SASMISC`. Refer to the README.W95 file for details.

The EHLLAPI access method requires that the supported emulation package be listed in the Autoexec Path statement as shown in the following example:

```
path=C:\ehllapi_package;%Path%
```

The following software is required to use the DECnet access method:

- Digital Equipment Corporation’s Pathworks 32 with Microsoft’s Winsock Version 2.0.

## NETBIOS

For the NETBIOS access method, SAS/CONNECT software supports the IBM-compatible NETBIOS that is included with Windows 95.

Additional information is included on the install media in `!SASROOT\CONNECT\SASMISC`. Refer to the README.W95 file for details.

## SPX

For the SPX access method, SAS/CONNECT software supports the IPX/SPX protocol that is included with Windows 95.

## TELNET and TCP/IP

Using the TELNET or TCP/IP access method, a Windows user can connect to any supported platform that is on the TCP/IP network, is running a release of the SAS System that has the corresponding access method support, and has SAS/CONNECT software licensed. With the TCP/IP access method, one of the supported TCP/IP products must be installed on any node, local or remote, that you want to use with SAS/CONNECT software. For the TELNET access method, a supported TCP/IP package must be installed on the local node. The remote node does not have to run a supported TCP/IP product, but must run some TCP/IP product to make the node accessible via TELNET.

For the TCP/IP access method, SAS/CONNECT software supports Microsoft's TCP/IP System Driver, which is provided with Windows 95.

## APPC

Information is provided as a reference for establishing an environment to use SNA LU6.2 communications with the peer-to-peer capabilities provided in APPC (Advanced Program-to-Program Communications) within your SAS applications. This information is included on the install media in the `!SASROOT\CONNECT\SASMISC` and `!SASROOT\SHARE\SASMISC` directories. Refer to the README file in these directories for details.

One of the following software packages is required to use the APPC access method with the SAS System under Windows 95:

- Microsoft SNA Server, Version 2.11 SP1 (Service Pack 1) or subsequent versions
- IBM’s Personal Communications Version 4.11 or subsequent versions
- Any program that supports WOSA (Windows Open Services Architecture) APPC (Win APPC) standard.

# System Configuration for Access Methods Supported Under Windows NT

The access methods supported for the SAS System on Windows NT are EHLLAPI, DECNET, NETBIOS, SPX, TELNET, TCP/IP, and APPC. These methods are described in the order listed.

## EHLLAPI

The EHLLAPI access method requires one of the following emulation packages:

- Wall Data's Rumba 95/NT, Version 5.0
- Attachmate's EXTRA Personal Client, Version 6.0
- Any Windows NT 32-bit emulation program that supports the EHLLAPI or WinHLLAPI standards.

Additional information is included on the install media in `!SASROOT\CONNECT\SASMISC`. Refer to the README.WNT file for details.

The EHLLAPI access method requires that the supported emulation package be listed in the Autoexec Path statement as shown in the following example:

```
path=C:\ehllapi_package;%Path%
```

## DECNET

One of the following software packages is required to use the DECnet access method:

*If you have Windows 3.51 installed, you must use:*

- Digital's Pathworks for Windows NT, Version 5.1.

*If you have Windows 4.0 installed, you must use:*

- Digital Equipment Corporation's Pathworks 32 with Microsoft's Winsock 2.0.

### Configuration Details for Remote Side CONNECT Capabilities

You should verify that the appropriate instructions are in the SASCONN.BAT file on each Windows NT machine that you intend to use as a remote node for a SAS/CONNECT conversation using the DECNET access method. A sample SASCONN.BAT file has been shipped and installed in the SASROOT directory. This file is run by the Pathwork's Spawner (not the SAS Spawner).

### Network Drive Restrictions

Remote SAS/CONNECT sessions cannot access any network drives. This is due to security concerns under Windows NT. The Microsoft Development Library contains more information. See the Windows NT Knowledge Base articles #Q124184, Q132679, and Q122702. This may be addressed in a future release of the SAS System and/or Pathworks. If you require access to a network file, that file can be accessed by copying it to a local drive.

### Security Considerations

Signing into a Windows NT system or out of a Windows NT system requires that user information be supplied. This information is called the Access Control Information (ACI) and is specified as part of the REMOTE= value for the DECnet access method. If default user information has been configured, you only need to specify the remote nodename; otherwise you must include username and password information in the ACI. The complete form of the ACI is:

```
%let rmtnode=node"user pass"::;
options remote=rmtnode;
```

where `user` can be a valid username for the remote system, or a question mark can be used and you will be prompted for the username at signon time; and where `pass` can either be a valid password for the username, or a question mark can be used, and you will be prompted for the password at signon time.

*Note:* If a password is not required for an account, it can be omitted from the ACI.

Refer to your Pathworks documentation for information on setting up default accounts.

## NETBIOS

For the NETBIOS access method, SAS/CONNECT software supports the IBM-compatible NETBIOS that is included with Windows NT.

Additional information is included on the install media in `!SASROOT\CONNECT\SASMISC`. Refer to the README.WNT file for details.

## SPX

For the SPX access method, SAS/CONNECT software supports the IPX/SPX protocol that is included with Windows NT.

### TELNET and TCP/IP

Using the TELNET or TCP/IP access method, a Windows user can connect to any supported platform that is on the TCP/IP network, is running a release of the SAS System that has the corresponding access method support, and has SAS/CONNECT software licensed. With the TCP/IP access method, one of the supported TCP/IP products must be installed on any node, local or remote, that you want to use with SAS/CONNECT software. For the TELNET access method, a supported TCP/IP package must be installed on the local node. The remote node does not have to run a supported TCP/IP product, but must run some TCP/IP product to make the node accessible via TELNET.

For the TCP access method, SAS/CONNECT software supports Microsoft's TCP/IP System Driver, which is provided with Windows NT.

### APPC

Information is provided as a reference for establishing an environment to use SNA LU6.2 communications with the peer-to-peer capabilities provided in APPC (Advanced Program-to-Program Communications) within your SAS applications. This information is included on the install media in the `!SASROOT\CONNECT\SASMISC` and `!SASROOT\SHARE\SASMISC` directories. Refer to the README file in these directories for details.

One of the following software packages is required to use the APPC access method with the SAS System under Windows 95:

- Microsoft SNA Server, Version 2.11 SP1 (Service Pack 1) or subsequent versions
- Any program that supports WOSA (Windows Open Services Architecture) APPC (Win APPC) standard.

## Configuring the SAS Job Spawner

The SAS Job Spawner is stored in the `!SASROOT\CONNECT\SASEXE` directory and can be executed manually at any time. Setup installs the SAS Job Spawner by executing `SPAWNER.EXE` with the following options:

-install

causes the spawner to install itself as an NT service.

-comamid protocol_name

protocol_name can be TCP, NETBIOS, or SPX. You must specify at least one. If more than one is specified, then you must include more than one `-comamid` option on the command line. There is no default value for this option.

-netname name

name can be a 1 to 8 character string and is the network name that is used by NETBIOS and SPX (unless spxname is specified).

-spxname name

name can be a 1 to 8 character string and is the network name that is used by SPX.

*Note:* You can use the same name for both Net Name and SPX Name, however, it is recommended that you check with your System Administrator to ensure that you are the only one on your network using that name. The Net Name and SPX Name must be unique on your network.

Refer to "The PC Spawner Program" in "Online Documentation," in *SAS/CONNECT Software: Changes and Enhancements for Release 6.11* for complete information on using the PC spawner.

## Changing a Secured Spawner to a Non-Secured Spawner

When the spawner is installed as a service, it is installed to run secured by default. If you wish to run an unsecured spawner as a Windows NT service, you can execute a file in order to change the spawner mode to unsecured. The following lines should be put into a file and either run with the `REGEDIT` command or imported into the registry editor through the pull-down menu:

```
/* sample contents of file */
REGEDIT4
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\SAS Job Spawner\Parameters]
"security"=hex:00,00,00,00
```

# Appendix B, Post-Installation Setup for SAS/SHARE® Software

This appendix discusses the access methods that are available with Release 6.12 of SAS/SHARE software.

## Selecting a Communications Access Method

To implement SAS/SHARE software, complete the following steps:

1. Determine access method to use.

   Communication between a SAS/SHARE server and user is handled by a communications access method, which is a part of the SAS System that uses underlying communications software to exchange messages and data. There are currently five different access methods available for use with this release of SAS/SHARE software under Windows. They are described in the table below.

   You may choose to use one, two, or three of them, depending on your needs and your communications/networking hardware and software configuration. To use an access method, you must have the supporting software on each workstation on which a SAS/SHARE server or user will execute. The following table shows the supported communications software for each access method.

| Access Method | Communications Software Required |
|---|---|
| NETBIOS | IBM's LAN Support Program, NetWare Requestor from Novell. |
| DECnet | Pathworks for DOS and Windows V5.1 or higher |
| TCP/IP | IBM TCP/IP Version 1.2 for Windows, Novell's LAN WorkPlace for Windows, (Any TCP/IP product that provides a Winsock Version 1.1 API) |
| APPC | Microsoft SNA Server, Version 2.1+ or later, or any program that supports Microsoft's APPC WOSA standard |
| CPIC | Microsoft SNA Server, Version 2.1+, Wall Data's Rumba APPC Engine, Version 2.0 with ZB0APC10 applied, any program that supports WOSA CPI-C or CPI-C 2.0 standards. |

2. Set SAS system options to specify selected access method(s).

   The SAS system options `COMAMID=`, `COMAUX1=`, and `COMAUX2=` specify the communications access methods to be used. These options can be specified in the SAS command, or in a SAS configuration file. The `COMAMID=` option can also be specified in an `OPTIONS` statement. Only the `COMAMID=` option is required to use SAS/SHARE software. You should only specify values for the `COMAUX1=` and `COMAUX2=` options when it is necessary for SAS users at your site to use more than one access method to communicate with SAS server(s).

   The table below shows the value to specify for these options to identify each access method:

| Access Method | **`COMAMID=/COMAUX1= /COMAUX2= Value`** |
|---|---|
| NETBIOS | `NETBIOS` |
| DECnet | `DECNET` |
| TCP/IP | `TCP` |
| APPC | `APPC` |
| CPIC | `CPIC` |

For a server, these three options have essentially the same meaning; each access method specified by these options will be initialized when the server is started, making the server accessible to users via any of those access methods.

For example, for a server that is to be accessible only to users who use the NETBIOS access method, specify the following:

```
COMAMID=NETBIOS
COMAUX1=
COMAUX2=
```

For a server that is to be accessible to users who use either the NETBIOS access method or the APPC access method, specify the following:

```
COMAMID=NETBIOS
COMAUX1=APPC
COMAUX2=
```

or

```
COMAMID=APPC
COMAUX1=NETBIOS
COMAUX2=
```

For a user session, the access method specified by the `COMAMID=` option is the first one used to attempt to connect to a server. If the server is not found, the access method specified by the `COMAUX1=` option is used. If the server still is not found, the access method specified by the `COMAUX2=` option is used.

For example, to cause a user session to use only the NETBIOS access method, specify the following:

```
COMAMID=NETBIOS
COMAUX1=
COMAUX2=
```

*Note:* It is not necessary to specify `COMAUX1=` or `COMAUX2=` if you do not want to specify a secondary or tertiary access method.

To cause a user session to first try to locate a server using the APPC access method, and then to use the TCP/IP access method if the server is not found, specify the following:

```
COMAMID=APPC
COMAUX1=TCP
COMAUX2=
```

To cause a user session to try the NETBIOS, APPC, and TCP/IP access methods in that order, specify the following:

```
COMAMID=NETBIOS
COMAUX1=APPC
COMAUX2=TCP
```

# System Configuration for the NETBIOS Access Method

*Note:* This information is required to use the NETBIOS access method.

For the NETBIOS access method, SAS/SHARE software uses the Windows interface to the IBM compatible NETBIOS that is loaded into DOS. Therefore, you should be able to use software from any vendor providing an IBM-compatible NETBIOS product. The following two packages have been verified by the Institute:

- IBM's LAN Support Program
- Novell's NetWare Requestor for DOS.

# System Configuration for the APPC and CPIC Access Methods

See "System Configuration for the APPC Access Method," and "System Configuration for the CPIC Access Method," in Appendix A, "Post-Installation Setup for SAS/CONNECT Software," for information.

# System Configuration for the TCP/IP Access Method

## Software Requirements

The following TCP/IP products are supported:

- any package that provides a WINSOCK V1.1 API.

  The TCP/IP and TELNET access methods require that the Winsock V1.1 compliant vendor software be listed in the Autoexec Path statement as shown in the following example:

  ```
  path=c:\tcp.package;%Path%
  ```

### Define server names in the TCP/IP services file

Complete the following steps:

1. Locate the SERVICES file.

   If you are using IBM TCP/IP, the SERVICES file is located in the ETC directory in which the product is installed. For example, if the TCP/IP product is installed in D:\TCPIP, the SERVICES file is in D:\TCPIP\ETC.

   If you are using Novell's LAN WorkPlace, the SERVICES file is located in the TCP directory in which the product is installed. Therefore if the TCP/IP product is installed in E:\LANWP then the SERVICES file is in E:\LANWP\TCP.

   If you are using another TCP/IP package, refer to your documentation for the location of the SERVICES file.

2. Specify the server names and port assignments.

   Each SAS server that runs on a network must be defined as a service in the SERVICES file. Each entry in this file associates a service name with the port number and protocol used by that service. An entry for a SAS server has the form:

   ```
   <server name>  <port number>/<protocol> # <comments>
   ```

   The server name must be 1-8 characters in length. The first character must be a letter or underscore; the remaining seven characters can include letters, digits, underscores, the dollar ($) sign, or the at (@) sign. The port number must be above 1024, as any port number equal to or less than 1024 is reserved. The protocol must always be TCP.

   An entry for a server whose name is MKTSERV might look like this:

   ```
   mktserv        5000/tcp    # SAS server for Marketing and Sales
   ```

   The server name is specified with the SERVER= option in the PROC SERVER statement in the server's SAS session and in the PROC OPERATE and LIBNAME statements in user and server administrator programs.

## System Configuration for the DECNET Access Method

See "System Configuration for the DECNET Access Method," in Appendix A, "Post-Installation Setup for SAS/CONNECT Software."

# Appendix C, Upgrading to Windows 32s

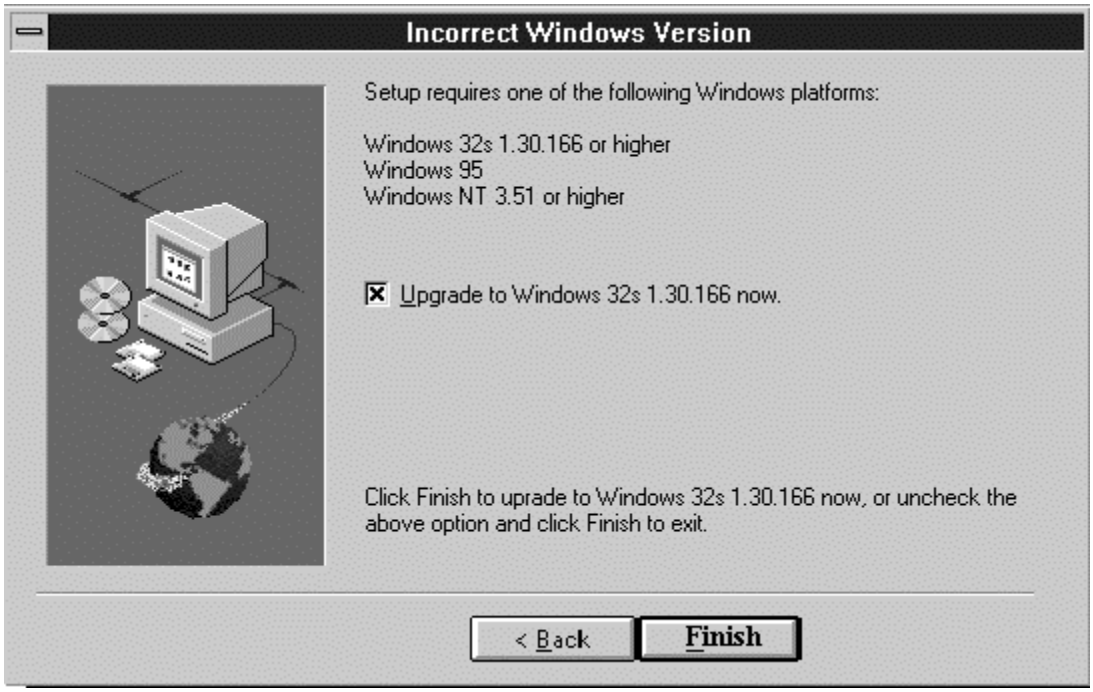
If you are running Windows 3.1* or Windows for Workgroups 3.11, Release 6.12 of the SAS System requires Microsoft Windows 32s, version 1.30.166. Your SAS System installation media contains the Microsoft Win32s Setup program. This program can be invoked from the SAS System Setup program or directly from the installation media.

## Upgrading to Windows 32s Using SAS System Setup

You must at least have Windows 32s installed in order for Setup to upgrade your system to the latest version. If you only have Windows 3.1 installed, then you will have to execute the upgrade directly from the installation media.

If you are running Setup under Windows 32s and Setup determines that you do not have the correct version installed, then you will be given the opportunity to upgrade to the correct version.

If Setup determines that Win32s is not installed, and Windows 3.1 or 3.11 is installed, Setup will terminate with a warning to install Win32s from the installation media.



The option to upgrade your system is already selected. Select `Finish` to begin the Microsoft Win32s Setup program. If you do not want to upgrade your system, select `Upgrade to Windows 32s...` so that the check box is empty, and then select `Finish`.

Follow the Microsoft Win32s Setup dialogs to continue upgrading Windows. The Microsoft Win32s Setup program installs the Win32s components to your hard disk and configures Microsoft Windows 3.1 for Win32s applications. During this installation, you also have the option of installing the Win32s game Freecell. It is suggested that you install Freecell so it can be used to verify the correct installation of Win32s.

When the Win32s upgrade is complete, Microsoft Win32s Setup will exit and restart Windows to complete the installation. You need to invoke the SAS System Setup program again to begin installing the SAS System.

## Upgrading to Windows 32s Directly From Installation Media

To start the Microsoft Win32s Setup installation process without running the SAS System Setup program, complete the following steps:

1. Start Windows in Enhanced mode.

2. Insert the SAS System installation CD-ROM into the source drive.

3. Select `File...` from the Program or File Manager.

4. Select `Run...` from the `File` menu.

5. Type the following command to invoke the Microsoft Win32s Setup program:

   ```
   <source_drive>:\SAS\WIN32S\DISK1\SETUP
   ```

   where `source_drive` is the CD-ROM drive containing the SAS installation media. For example, if the media is inserted in drive D:, enter the following command:

   ```
   D:\SAS\WIN32S\DISK1\SETUP
   ```

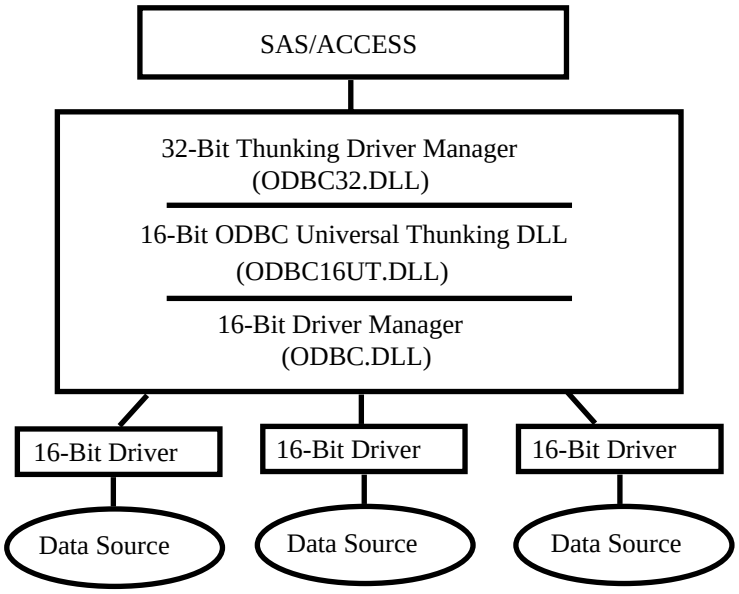
Follow the Microsoft Win32s Setup dialogs to continue upgrading Windows. The Microsoft Win32s Setup program installs the Win32s components to your hard disk and configures Microsoft Windows 3.1 for Win32s applications. During this installation, you also have the option of installing the Win32s game Freecell. It is suggested that you install Freecell so it can be used to verify the correct installation of Win32s.

When the Win32s upgrade is complete, Microsoft Win32s Setup will exit and restart Windows to complete the installation. You need to invoke the SAS System Setup program again to begin installing the SAS System.

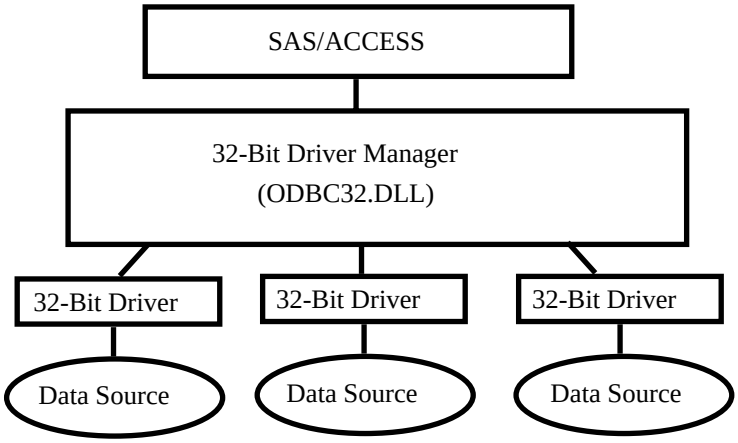
# Appendix D, Installing SAS/ACCESS® Interface to ODBC Software

Before you can use the SAS ODBC Pass-Through engine, you must install an ODBC driver for the database management system (DBMS) you want to access. An ODBC driver processes ODBC function calls from, and returns results to SAS/ACCESS software. You can get drivers from Microsoft, your database vendors, or other third party software.

SAS/ACCESS Interface to ODBC software is a 32-bit application. However, to run SAS/ACCESS on Win32s, you need 16-bit drivers. SAS/ACCESS calls the 32-bit Thunking Driver Manager (ODBC32.DLL), which calls a Universal Thunking DLL (ODBC16UT.DLL). The thunking DLL then converts 32-bit calls from SAS/ACCESS to 16-bit calls in the Driver Manager (ODBC.DLL). The Driver Manager in turn calls the 16-bit drivers. The following figure shows the architecture:



To run SAS/ACCESS on Windows NT or Windows 95, you need 32-bit drivers. The application calls the 32-bit Driver Manager (ODBC32.DLL), which in turn calls the 32-bit drivers. The following figure shows the architecture:




The ODBC Driver Manager and Administrator are Microsoft products that are included with all ODBC drivers. When you install an ODBC driver, the ODBC Driver Manager and Administrator are also installed. The ODBC Administrator should appear as an icon in the control panel. However, it can also appear as an icon in a program group instead.

After you install the ODBC driver, you can use the ODBC Administrator to define and manage the data sources. A data source associates a particular ODBC driver with the data you want to access through that driver. It can consist of information about the data you want to access and its associated operating system, DBMS, and network platform (if any) used to access the DBMS. For information about how to configure your data sources, refer to the documentation provided with your ODBC drivers.

For more information about SAS/ACCESS Interface to ODBC software, refer to *SAS/ACCESS Software Changes and Enhancements: SQL Procedure Pass-Through Facility, Version 6*. For more information about ODBC, refer to *Microsoft ODBC 2.0 Programmer's Reference and SDK Guide*.

# Appendix E, Setting Up the SAS ODBC Driver

The SAS ODBC Driver allows you to access, update, and manipulate SAS data from your favorite ODBC-compliant applications, such as Microsoft Access, Microsoft Excel, Visual Basic, and PowerBuilder. The SAS ODBC Driver provides read and write access to databases such as IBM DB2 and ORACLE via SAS/ACCESS software running on remote SAS servers. Furthermore, SAS views can be defined to join database tables from different vendors, creating a virtual data warehouse for your ODBC-enabled applications.

The SAS ODBC Driver supports three communication protocols to access your data, DDE, Network DDE, and TCP/IP. The user's client machine does not require the SAS System to be installed on the client machine when accessing a remote SAS server via ODBC. Accessing local SAS data requires Base SAS software to be installed on the client machine.

DDE allows users with the SAS System installed on their local PC to access their local SAS data via ODBC.

Network DDE allows users to access a remote SAS server that supports Network DDE (typically Windows NT).

TCP/IP support allows users to access remote SAS servers on a variety of host platforms.

A remote server requires Base SAS software, SAS/SHARE software, and SAS/SHARE*NET software enabled.

The 6.12 release of the SAS ODBC Driver contains several new features to provide transparent access to your SAS data from your favorite ODBC-enabled applications.

- ❑ Full compliance with ODBC date, time, and timestamp datatypes.
- ❑ Support for the ODBC numeric, string, date, and time scalar functions, providing access to SAS functions through a standard ODBC interface.
- ❑ The 32-bit SAS ODBC Driver supports all the new Windows 95 applications.
- ❑ New, easy-to-use setup dialogs.
- ❑ Improved diagnostics featuring ODBC-compliant "multi-layered" error reporting, which provides server- and driver-generated error messages.
- ❑ Allowed System Data Sources Name (DSN) to be used for 32-bit SAS ODBC driver.

You should install either the 16- or 32-bit version of the SAS ODBC Driver depending upon the version of Windows you are running and whether your ODBC applications are 16- or 32-bit.

On Windows 3.1, with or without Win32s, you can only install the 16-bit driver that is usable from both 16- and 32-bit applications. Win32s on Windows 3.1 is not required for 16-bit ODBC applications or the 16-bit SAS ODBC Driver. Win32s is required for the SAS System, however for ODBC access to local SAS datasets. Win32s is automatically installed as part of the SAS System Setup.

On Windows NT and Windows 95, you can install both the 16- and 32-bit drivers depending upon your application needs. 16-bit applications can use both 16- and 32-bit drivers and hence can see data sources defined by each type of driver. 32-bit applications can only use 32-bit drivers and therefore can only see data sources defined to the 32-bit drivers and cannot use data sources defined to 16-bit drivers. This occurs because Windows NT allows thunking (16- to 32-bit translation) from 16- to 32-bit applications, but not from 32- to 16-bit applications. The ODBC Driver Manager handles all thunking issues.

*Note:* Performance degrades somewhat when a 32-bit application uses a 16-bit driver or vice versa. Where possible, you should define data sources to the 16- or 32-bit driver, for use by a 16- or 32-bit application, respectively.

## Installing the SAS ODBC Driver

The SAS ODBC Driver setup program is included on your SAS System installation media.

To start the SAS ODBC Driver installation process, complete the following steps:

1. Start Windows in Enhanced mode.

2. Insert the SAS installation media into the source drive.

3. Select `Start...`and then `Run...` If you are using the Windows Program Manager, select `File...` and then `Run...`

4. If the SAS installation media is CD-ROM, type the following command to invoke the program for installation of the 16-bit driver under Windows:

```
<source_drive>:\sas\odbc\setupw16\setup
```

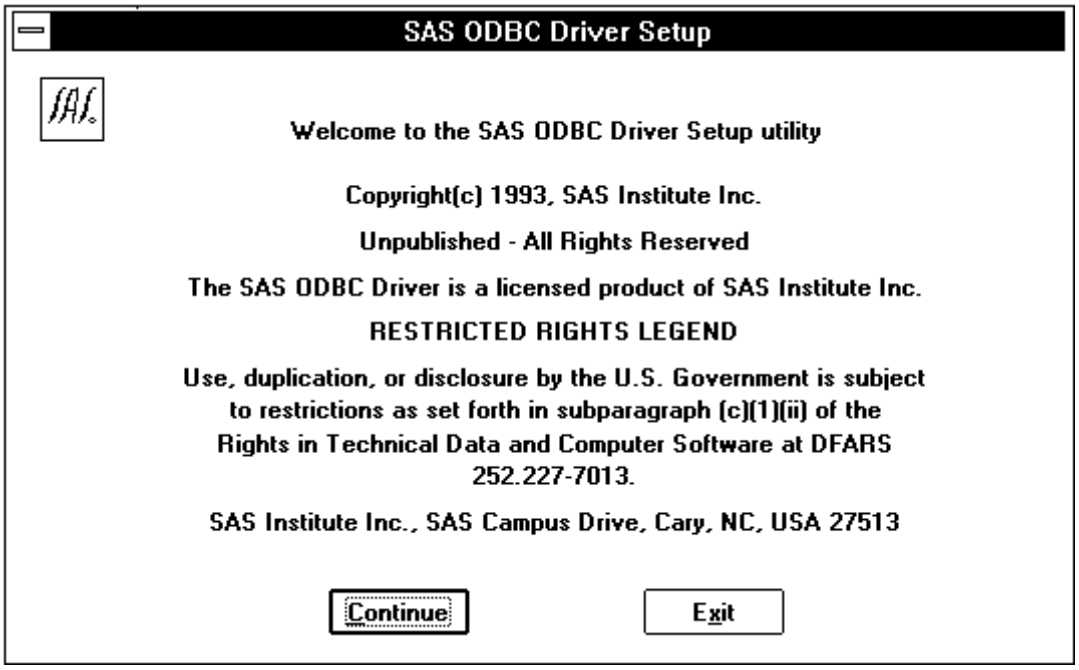
Type the following command to install the 32-bit driver under Windows:

```
<source_drive>:\SAS\ODBC\SETUPW32\SETUP
```

In both cases, `source_drive` is the drive containing the SAS installation media. For example, if the installation media is in drive D:, type the following command:

```
D:\SAS\ODBC\SETUPW16\SETUP
```

Whether you typed the above command or you installed the SAS ODBC Driver from the SAS Setup program by selecting `OK` from the SAS ODBC Driver Installation Option window, the following welcome window is displayed:



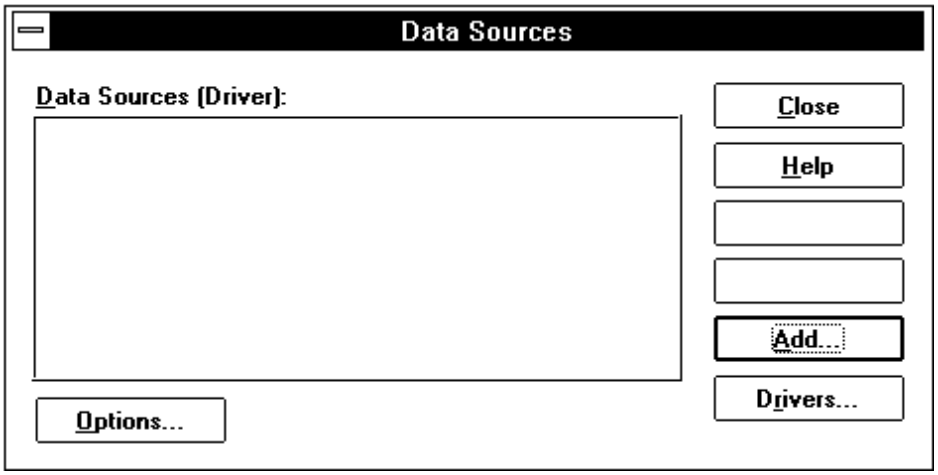

To continue the installation after reading the welcoming window, select the `Continue` button.

If you select the `Exit` button to terminate the installation of the ODBC drivers, you will be reminded that the process did not complete and will need to be rerun to complete the install of the SAS ODBC Driver.

# Continuing the SAS ODBC Driver Setup Program

When the SAS ODBC Driver has successfully installed, the following window is displayed:


Select the `OK` button to display the `Data Sources` window as shown below:




From the `Data Sources` window, you can add, delete, or configure data sources as well as install new ODBC drivers on your machine.

After installing an ODBC driver, you can define one or more data sources for it. The data source name should provide a unique description of the data. The data sources that are defined for all the currently installed drivers are listed in the Data Source (Driver) list. For more information about configuring the SAS ODBC Driver, refer to the *SAS ODBC Driver Technical Report: User's Guide and Programmer's Reference* (#55272).

Select the `Close` button from the `Data Sources` window to complete the SAS ODBC Driver Setup program. The following window is displayed:


If you installed the SAS ODBC drivers from the SAS Setup program, select `OK` to return to the SAS Setup program. If you explicitly called the SAS ODBC Setup program, select `OK` to return to the Windows environment.

## Technical Support

For support issues and problems please contact SAS Technical Support at 919-677-8008 and ask for a PC consultant. Let the consultant know you are running the 6.12 version of the SAS ODBC Driver.

# Appendix F, Setting Up Microsoft Video for Windows

The Microsoft Video for Windows Setup program is included on your SAS System installation media.

To start the Microsoft Video for Windows Setup program, complete the following steps:

1. Start Windows in Enhanced mode.

2. Insert the SAS installation media into the source drive.

3. Select `Start...` and then `Run...` If you are using the Windows Program Manager, select `File...` and then `Run...`.

4. If the SAS installation media is CD-ROM, type the following command to invoke the Microsoft Video for Windows Setup program:

   ```
   <source_drive>:\SAS\INDEO\SETUP
   ```

   where `source_drive` is the drive containing the SAS installation media. For example, if the installation media is inserted in drive D:, type the following command:

   ```
   D:\SAS\INDEO\SETUP
   ```

The following welcome window is displayed:

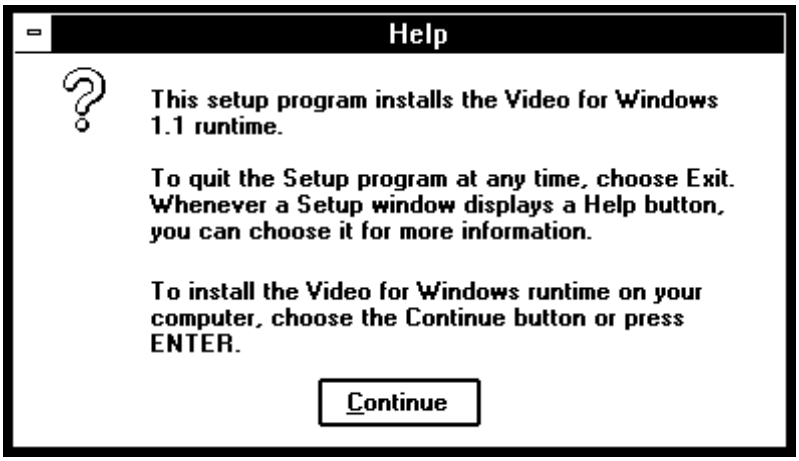

From this window you have the following options:

- `Continue`

  Select `Continue` to proceed with the Video for Windows runtime installation.

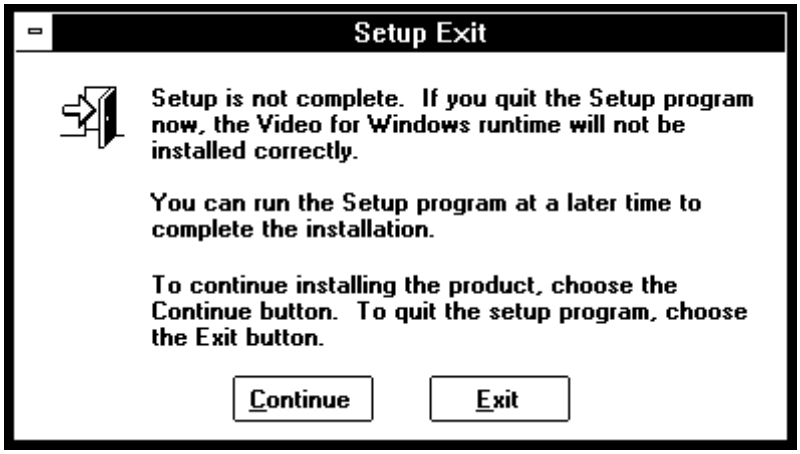
- `Help`

  displays the following window



- `Exit`

  terminates Video setup. You will be warned that the Video for Windows runtime will not be installed correctly as shown in the window below:




  Select `Continue` to proceed with the Video for Windows runtime installation. You will be returned to the `Microsoft Video for Windows Setup` welcome window. Select `Exit` to terminate the Video for Windows runtime installation.

## Continuing Microsoft Video for Windows Setup

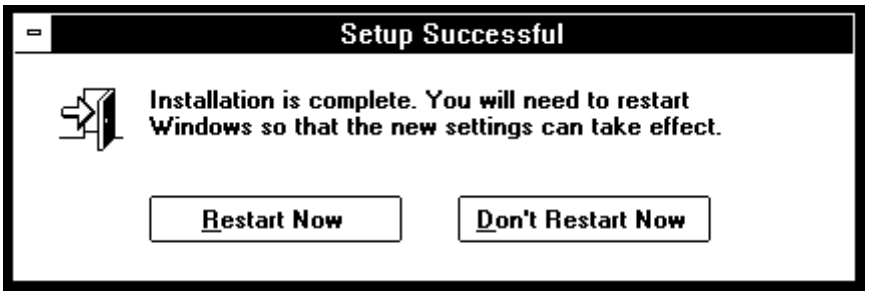
Select `Continue` from the `Microsoft Video for Windows Setup` welcome window to begin copying the necessary files. While the files are being copied, a monitor window is displayed to indicate the percentage completed of the setup process. Select `Cancel` from the monitor window to terminate the copying process. The following window is displayed:


The integrity of the Microsoft Video for Windows Setup installation is jeopardized if you cancel before it has completed copying necessary files. You may have to re-run the program at a later time.

Select `No` to abort the exit request and continue the installation. Select `Yes` to exit the Microsoft Video for Windows Setup installation program. The following window is displayed:

*Note:* If there is a problem during installation, and Microsoft Video for Windows Setup should fail, the following window is displayed:


When Microsoft Video for Windows Setup program has successfully installed the files, the following window is displayed:




Select `Restart Now` to restart your Windows application so the new settings can take effect.

# Appendix G, Installing SAS/ACCESS® Interface to SYBASE and SQL Server Software

Before you can use the SAS/ACCESS Interface to SYBASE and SQL Server, you must install the DB-Library and appropriate Net-Library client software on the PC where the interface will be used. Check with your Database Administrator (DBA) to determine if the software is already installed at your site.

One of the following releases of DBMS client software is required to run SAS/ACCESS software:

For Win32s:

- Microsoft SQL Server Client 4.20.50 or later
- SYBASE Open Client Release 4.20.50 or 10.0.3 and later

For Windows NT:

- Microsoft SQL Server Client 4.20.50 or later
- SYBASE Open Client Release 10.0.2 or later
- SYBASE Open Client Release 11.1 or later

For Windows 95:

- Microsoft SQL Server Client 6.0 or later
- SYBASE Open Client Release 10.0.3 or later
- SYBASE Open Client Release 11.1 or later

For more information about the SAS/ACCESS Interface to SYBASE and SQL Server, refer to *SAS/ACCESS Interface to SYBASE and SQL Server: Usage and Reference, Version 6, First Edition*.

## Configuring SAS/ACCESS Interface to SYBASE/SQL SERVER

The correct Sybase/SQL Server environment variable used by the interface must be specified in the CONFIG.SAS file. To set an environment variable, use the -SET system option in the CONFIG.SAS file.

- For accessing MS Sql Server: `-set sybbrgnm sassyb`
- For accessing Sybase 10.03: `-set sybbrgnm sassyb10`
- For accessing Sybase 11: `-set sybbrgnm sassyb11`

NLS translation has been added for both Sybase 10 and 11 Open Clients. The dblib interface provided by Sybase allows a client application to specify the character set it is operating with. The Sybase server can then translate client requests between the

client and server charsets. You can have SAS specify a client character set by adding the line:

```
-set SYBCHARSET xxxxx
```

to the `config.sas` file, where xxxx is the character set that the client PC is using.

# Appendix H, Installing SAS/ACCESS® Interface to ORACLE Software

Before you can use the SAS/ACCESS Interface to ORACLE, the following products are required:

- ❑ Base SAS software
- ❑ SAS/ACCESS Interface to ORACLE software
- ❑ ORACLE SQL*NET for Windows NT or ORACLE SQL*Net for Windows 95.

## Client-Server Architecture

SAS/ACCESS Interface to ORACLE runs on the client machine (Windows). It accepts user input and sends requests to ORACLE SQL*Net (client) to be transported across the network to the server.

ORACLE7 database software and a SQL*Net listener (Server) are running on the server machine. The SQL*Net listener accepts the connection from the client on the network. It then delivers the SAS/ACCESS requests to the ORACLE7 database.

An ORACLE SQL*Net V1.x client can talk to servers that support SQL*Net V1.x and an ORACLE SQL*Net V2.x client can talk to servers that support SQL*Net V2.x. You can also have a client and/or server which supports both SQL*Net V1.x and SQL*Net V2.x. However, you cannot have a SQL*Net V1.x client connecting to a server that only supports SQL*Net V2.x. For example, an ORACLE client installed on NT for SQL*Net V2.x can connect to an ORACLE server (7.1, 7.2, 7.3 and so on) on any platform (Solaris 2, HP/UX, AIX, Digital UNIX, OpenVMS, Windows NT, and so on) which is also running SQL*Net V2.x. SQL*Net is a communication transport layer product and it does not care about the version number of the server that it is connecting to and fetching data from to pass back to the client application.

## Installing SQL*Net

Before using the SAS/ACCESS Interface to ORACLE server, you must install the ORACLE SQL*Net Client on the same PC where the SAS/ACCESS interface will be used.

To install ORACLE SQL*Net Client on Windows NT or Windows 95, it is recommended that you use one of the following options:

- install Net8 Client from ORACLE8 Client, Version 8.0.3 for Windows NT or Windows 95. You can find them from CD-ROM Part #A55219-01.
- install SQL*Net from ORACLE Client, Version 7.3.2 for Windows NT and Windows 95. You can find them from CD-ROM Part #A42656-2.
- install SQL*Net from "ORACLE products for Windows NT Version 7.2". You can find them from CD-ROM Part #A49768-1.
  *or*
  install SQL*Net from "ORACLE products for Windows 95, Version 7.2". You can find them from CD-ROM Part #A49768-1.
- install SQL*Net from "ORACLE products for Windows NT Version 7.1". You can find them from CD-ROM Part #A32950-2.
- install SQL*Net from "ORACLE products for Windows NT Version 7.0". You can find them from CD-ROM Part #A17498-2.

## Assigning the Default Path for ORACLE Server

After you install ORACLE SQL*Net Client software, you may want to specify the default connect string by defining the default path for ORACLE Server. When you use SAS/ACCESS interface software without specifying any PATH statement/field, SAS/ACCESS software uses the defined default path.

*For Windows 95:*

Complete the following steps:

1. Run Windows 95 registry (REGEDIT)
2. Select `HKEY_LOCAL_MACHINE...SOFTWARE...Oracle`
3. Select `Edit...Add Value`
4. Enter `LOCAL` as the Value Name and then select `OK`
5. Enter your connect-string for the String field in the pop-up dialog box
6. Select `OK.`

*For Windows NT:*

Complete the following steps:

1. Run Windows NT registry (REGEDT32)
2. Select `HKEY_LOCAL_MACHINE...SOFTWARE...Oracle`
3. Select `Edit...New...String Value`
4. Enter `LOCAL` as the Value Name and then select `Edit...Modify`
5. The Value Name Field now says `Local`
5. Enter your connect-string for the Value Data field in the pop-up dialog box
6. Select `OK.`

# Appendix I, Post-Installation Setup for SAS/ASSIST® Software

This appendix describes how to add an optional master profile to SAS/ASSIST software. You can use a master profile to override the default settings as sent by SAS Institute. This allows you to provide a customized setup for SAS/ASSIST software. With the master profile you can control the profile options of all SAS/ASSIST users from one central place. For information on the profile options, refer to *SAS/ASSIST Software: Changes and Enhancements, Version 6*.

## Adding a Master Profile

Complete the following steps to add a master profile to SAS/ASSIST software:

1. Specify the location of the master profile by creating a new directory that all users of SAS/ASSIST software will have read-access to.

   All users with write-access to this directory will automatically also have write access to the master profile in SAS/ASSIST software. Select a name that conforms to the naming conventions at your installation. The name of this new directory must be stored in an entry in the SASHELP library. This requires that you have write access to the SASHELP library.

   On line 1 of the Program Editor window of the SAS Display Manager System, type the physical pathname of the master profile directory. Execute the `Save` command to store this in the SASHELP.QASSIST catalog. For example:

   ```
   SAVE SASHELP.QASSIST.PARMS.SOURCE
   00001 S:\SAS\ASSIST\PARMS
   00002
   00003
   ```

   The location of the master profile is now known by SAS/ASSIST software.

2. Create the master profile.

   The first time SAS/ASSIST software is started a master profile is created if the SASHELP.QASSIST.PARMS.SOURCE contains the name of an existing physical pathname, and the person who starts SAS/ASSIST software has write-access to this physical pathname.

3. Customize the master profile by starting SAS/ASSIST and selecting `SETUP ... Master/group...`

If you have write-access to the SAS library containing the master profile you can specify default values for your installation. These values will be used by new users as they start SAS/ASSIST software.

*Note:* If you restrict values by typing `R` in `Status`, users will not be allowed to change the values you define.

SAS/ASSIST contains a new menu bar and a new saving mechanism that are controlled using the profile options below.

```
Run old style:

Save selections on end:    No
Menu Style:                Old

Run new style:

Save selections on end:    Yes
Menu Style:                New
```

By setting the default values in the master profile you can control if users should use the new or old style SAS/ASSIST software. In addition, there are many other profile options. For more information on these options, refer to *SAS/ASSIST Software: Changes and Enhancements, Version 6*.

4. Create Group profiles.

   From the master profile it is possible to create group profiles to allow groups of users to have different setups. The master profile controls group profiles and user profiles when a user is not a member of any group. All users are indirectly controlled by the master profile when option values are set to a restricted (R) status.

   From `Setup...Master/Group...`, select `Locals...Create Group Profile`. To add users to a group profile, select `Locals...Update User Group`. By default the userid is found in the macro variable `&SYSJOBID`. This value is set in the option Userid in the master profile (option type System Administration). Change the value if your site uses another variable to keep the userid. If the value name starts with &, it is a macro variable, otherwise it is an environment variable, which is set before the start of the SAS System.

## Profile Changes and Enhancements

To enhance the profile feature for Query and Reporting, some changes have been made to the profile structure. A new profile option, `Query exit`, has been added to the user profile in `Type:Query`. Another new profile option, `Additional Information`, has been added to `Type:Query Manager`. This enables users who are running queries against SAS data to obtain customized information about the data they are accessing.

# Converting User Profiles from a Previous Release

There are many ways to convert your user profile. One is to simply note any changes you have made to your user profile, exit SAS/ASSIST software, delete the profile, SASUSER.PROFILE.PASSIST.SLIST, and reinvoke SAS/ASSIST software. A profile with the new format will be created. You can now update your new profile with the option values you noted in your original profile.

Another way you can convert your user profile is to use a conversion program that is provided with this release. In the Program Editor window type and submit the following to convert to the new structure:

```
proc display cat=sashelp.qassist.profconv.scl; run;
```

The SAS Administrator may want to ensure that all users of SAS/ASSIST software convert their user profiles soon after the new release is installed. This can be done using the Master Profile (see the section, "Adding a Master profile" for information on creating a master profile). You will take advantage of the SAS/ASSIST start program, a profile option that runs a program when SAS/ASSIST software is invoked. The program must be a SOURCE entry; therefore you must save the code in a source entry in a library that is accessible by all users such as SASHELP.

In this example, the source is saved in SASHELP.QASSIST.PROFCONV.SOURCE. If you currently have a SAS/ASSIST start program that is used globally you can add the code in that program. If individual users have their own SAS/ASSIST start programs, it may be best to have them simply type and submit the code in the Program Editor. Complete the following steps:

1. Type the following in the Program Editor window:

   ```
   proc display cat=sashelp.qassist.profconv.scl; run;
   ```

2. Select `Save As...Write to Object` from the `File` pull-down menu.

3. Enter the following destination object name:

   ```
   SASHELP.QASSIST.PROFCONV.SOURCE
   ```

4. Select `OK`.

5. After the Master Profile has been created, open it and select `Type: General`

6. Specify the following: (The R status forces the user's profile to be updated)

| *Cmd Option* | *Value* | *Status* |
|---|---|---|
| *SAS/ASSIST start program* | *SASHELP.QASSIST.PROFCONV.SOURCE* | *R* |
| *Type of start program* | *Catalog* | *R* |

*Note:* Once the conversion program has run, it can run again and again without effect. The administrator will have to leave these values in place until he feels confident that all users have used SAS/ASSIST software. The users will see a pop-up window indicating the above profile value change when they first access SAS/ASSIST software after the new release is installed and this technique is implemented. You may want to let them know to expect it. Existing users are notified that this option value has been changed when SAS/ASSIST software is invoked.

When the administrator is confident that all users have invoked SAS/ASSIST software in the new release, he should clear the value specified for the SAS/ASSIST start program and make it available to the user. Specify the following:

| *Cmd Option* | *Value* | *Status* |
|---|---|---|
| *SAS/ASSIST start program* | | *U* |
| *Type of start program* | *Catalog* | *U* |

The U status enables users to enter their own values for these options.

A pop-up window indicating these profile changes may be displayed. You can choose to accept the changes and update your profile.

*Note:* If you currently have a SAS/ASSIST start program that is used globally, you can add the above code to that program. If individual users have their own SAS/ASSIST start programs, it may be best to have them type and submit the code in the Program Editor.

# Converting Existing Master and Group Profiles

To convert the master profile, type the following in the Program Editor and then submit it:

```
%let lib=sas\assist\parms;
proc display cat=sashelp.qassist.profconv.scl; run;
```

To convert group profiles, type the following in the Program Editor and then submit it:

```
%let lib=sas\assist\parms\groups;
%let cat=catalog.grpname;
proc display cat=sashelp.qassist.profconv.scl; run;
```

*Note:* It is possible that some or all group profiles are stored in the same physical location as the master profile as shown in the above example. If you have multiple group profiles stored in the same physical location, you do not need to submit the %let lib= statement repeatedly. For example, if you have groups GRP1, GRP2, GRP3 all stored in sasabc.sas430.groups in the ASSIST catalog, you can submit the following to convert all three groups:

```
%let lib=sas\assist\parms\groups;
%let cat=assist.grp1;
proc display cat=sashelp.qassist.profconv.scl; run;
%let cat=assist.grp2;
proc display cat=sashelp.qassist.profconv.scl; run;
%let cat=assist.grp3;
proc display cat=sashelp.qassist.profconv.scl; run;
```

# Appendix J, Installing the SASNULL Device Driver for use with SAS/GRAPH® Software

*Note:* The information in this appendix is relevant for Windows 32s sites only.

This appendix provides instructions for installing the SASNULL device driver. This driver is necessary for producing hardcopy output from SAS/GRAPH software using "standalone" SAS/GRAPH device drivers such as PS or HPLJ3SI. If you are producing output using only the WINPRTx series of SAS/GRAPH drivers, you do not have to install the SASNULL driver.

For more information on SAS/GRAPH stand-alone drivers and the WINPRTx series of drivers, refer to *SAS Companion for the Microsoft Windows Environment, Version 6, First Edition.*

*Note:* If you have a SASNULL driver installed that was included in a previous release of SAS/GRAPH software, you do not have to re-install the driver with this release.

## Using SAS/GRAPH Stand-Alone Drivers

SAS/GRAPH stand-alone drivers use internal SAS/GRAPH driver routines instead of the Windows printer driver routines to generate hardcopy graphics output. If you use SAS/GRAPH stand-alone device drivers to send graphics output to a hardcopy device through Windows Print Manager, you must install a special SASNULL Windows driver. The SASNULL driver enables Print Manager to take the graphics data stream generated by the SAS/GRAPH stand-alone driver, and route it to your printer, without adding any additional characters to the graphics data stream. If the SASNULL driver is not installed, an error message appears in the SAS log and no graph is produced.

Note that although you must install the SASNULL windows driver before using SAS/GRAPH native drivers, you do not have to make it the active printer in your Printer Setup window. The SASNULL Windows driver is automatically used when you specify a SAS/GRAPH stand-alone driver. (This is a change from previous releases of SAS/GRAPH software, in which SASNULL had to be specified in Printer Setup)

# Installing the SASNULL Device Driver

Complete the following steps to install the SASNULL driver, which is located in the `!SASROOT\CORE\SASMISC` directory:

1. Select `Printer Setup` from either Windows Print Manager or the Control Panel, and select the `ADD` button.

2. Highlight `Install Unlisted or Updated Printer`, and select the `INSTALL` button.

3. Type the path of the SASNULL driver and select `OK`. Note that the driver name is not listed in the path, as shown in the following example:

```
c:\sas\core\sasmisc
```

4. The SASNULL driver is automatically highlighted in the `Add Unlisted or Updated Printer` dialog box. Select the `OK` button to add the SASNULL driver.

# Appendix K, Invoking SAS/TUTOR® Software

SAS/TUTOR software can be invoked directly from the SAS System.

To access the SAS/TUTOR courses, complete the following steps:

1. Invoke the SAS System.

2. Select `Online Training` from the `Help` pull-down menu in the Program Editor window.

# Appendix L, Testing the Installation

This appendix provides information on how to execute programs to test the success of your installation. Most products include *test streams*, as well as benchmark results for comparison. These test streams execute several programs to test various parts of the product. They are located in the `!SASROOT\CORE\SASTEST` subdirectory. The installation test streams can be installed directly from the installation media using SAS Setup for custom installation. Install the test stream component from each of the following products: Base SAS, SAS/ETS, SAS/GRAPH, SAS/IML, SAS/OR, SAS/QC, and SAS/STAT software. The `DOS FC` command is used to compare the benchmark results with those results generated at your site. To execute test streams, perform the following steps:

1. Change directory to the `SASROOT` directory.

2. On Windows 32s, enter the following command to invoke the test stream:

   ```
   WIN SAS CORE\SASTEST\TESTxxxx.SAS -EXITWINDOWS
   ```

   where `xxxx` is the product name (e.g., `BASE`, `STAT`)

   On Windows 95 and Windows NT, complete the following steps:

   a. Invoke an NT command prompt.

   b. Change to the SASROOT directory.

   c. Enter `SAS CORE\SASTEST\testxxxx.sas` to invoke the test stream, where `xxxx` is the product name (BASE, STAT, for example)

3. Examine the results of the test stream. The results are stored in a file named `TESTxxxx.OUT`. This file is stored in the `SASUSER\xxxx` subdirectory, where `xxxx` is the product name. For example, if you have installed Base SAS software in `C:\SAS`, the results are stored in the directory `C:\SAS\SASUSER\BASE\TESTBASE.OUT`.

4. If the resulting file shows any compare errors, check the appropriate `.LOG` file for any error messages.

SAS/GRAPH software includes a master test stream, but does not include any benchmarks. This test stream exercises each of the SAS/GRAPH procedures. After executing `TESTGRAF.SAS` as described above, examine the file `TESTGRAF.LOG` for any error messages.

# Appendix M, Updating Your SAS® System SETINIT

The SAS System is licensed on an annual basis. In order to run each software product you license from SAS Institute, current licensing information must be maintained. This information resides in the `SETINIT.SAS` file. The installation process copies the `SETINIT.SAS` file to the `!SASROOT\CORE\SASINST` subdirectory. When you install the SAS System, the SETINIT information is used to initialize the software for the current licensing period.

You must update your SETINIT when:

- ❑ the license period has expired in the `SETINIT.SAS` file on the installation media.
- ❑ the license has expired in your currently installed SAS System.
- ❑ when you license new or additional products of the SAS System.

Updating your license requires new SETINIT information that is sent to the SAS Representative at your site. This information is sometimes referred to as a *paper SETINIT*. You need this paper SETINIT to update your licensing information. If you are the SAS Representative at your site, and you have not received a new SETINIT since renewing your license, contact the Contracts Division at SAS Institute at (919) 677-8003.

You should update your SETINIT by executing the Siupdate program using one of the following methods:

- ❑ using the Update SAS License Information icon
- ❑ during installation of the SAS System
- ❑ executing from the command line.

## Using the Update License Information Icon

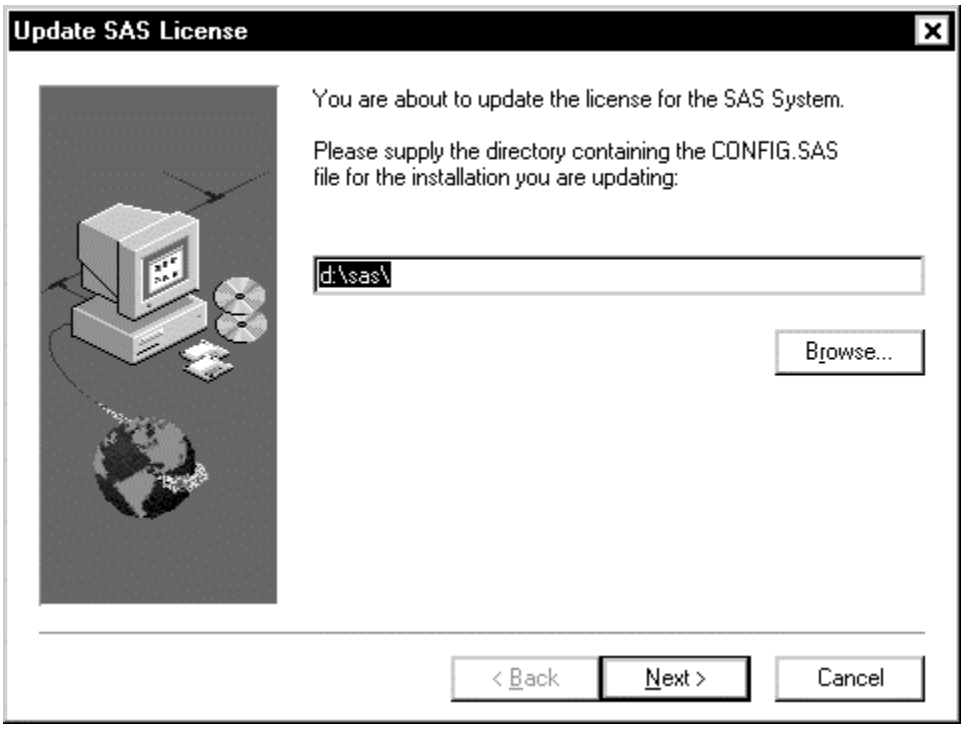
During the installation of the Core component of Release 6.12 of the SAS System, the `Update SAS License Information` program icon was created in either the Program Folder you selected, or on the `Start|Programs` button for Explorer interfaced platforms. The default Program Folder is *The SAS System*.

The SAS System has a built-in 60-day grace period that begins the day after your license expires. This grace period provides extra operating time so that the SAS Representative at your site can renew the license through the Technical Support Division at SAS Institute. During the grace period, warning messages may appear when updating your license information, but your SAS System will still be functional. Once the grace period expires, the SAS System cannot be invoked until the license information has been updated.

If your SAS System Version 6.12 license has expired, use the `Update SAS License Information` icon to reapply the setinit.sas file to reinitialize the SAS System to your new licensing period. You can do this provided the expiration date in your updated setinit.sas file is past the current date. If the expiration date is prior to the current date (i.e., your SAS System is licensed on a trial basis), you cannot use the `Update SAS License Information` icon to apply the setinit; you must apply the setinit manually. See the section, "Executing from the Command Line," in this appendix for more information.

*Note:* You should only use the `Update SAS License Information` icon if the expiration date in your setinit.sas file is past the current date. See the section, "Executing From the Command Line" later in this appendix if your expiration date in your setinit.sas file contains a date that is past the current date.

Double-click on the `Update SAS License Information` icon to invoke the licensing program. The following window is displayed:

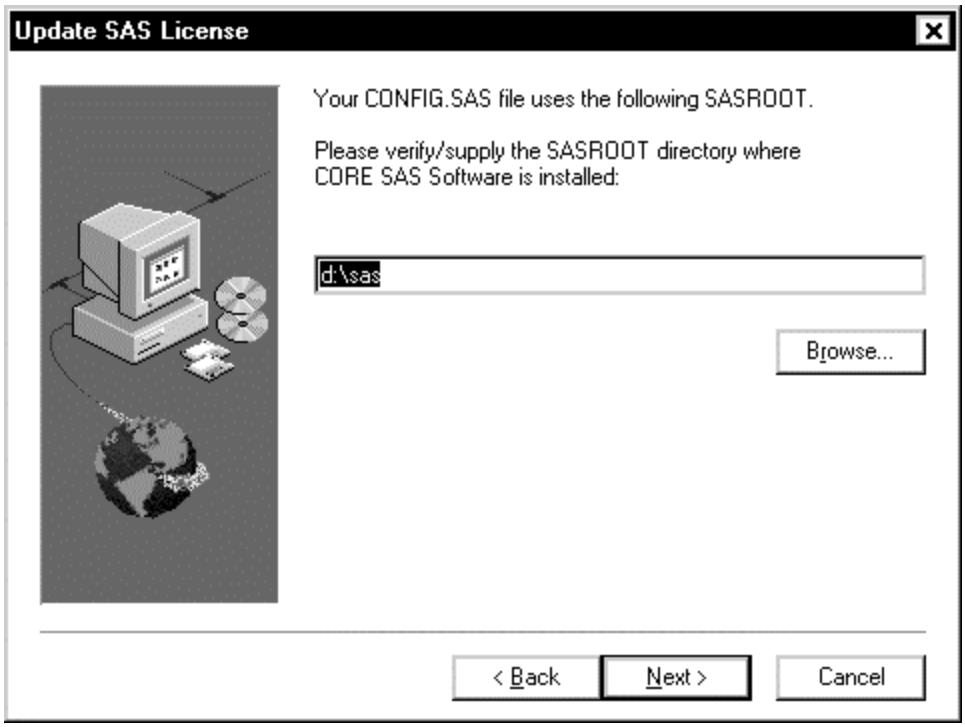



SAS Setup uses the CONFIG.SAS file to determine the location of the SASROOT and SASFOLDER system variables. After providing the directory where the

CONFIG.SAS file is located, select `Next`. You will then be asked to verify the SASROOT and SASFOLDER locations.

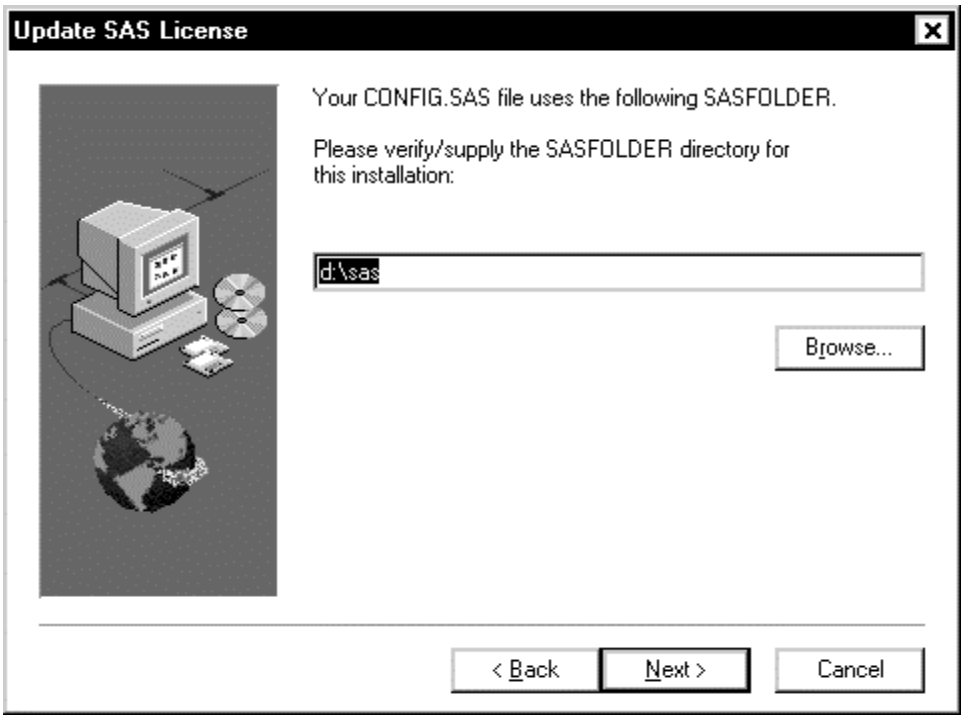
SASROOT is the location of SAS.EXE for the SAS installation that you are updating. SASFOLDER is the working folder of your installed SAS System, and must be the same as what is stored in your CONFIG.SAS file.

Select F1 or the `Help` button to receive online help during the install. Select `Next` to continue updating the SAS license information, or `Cancel` to exit Siupdate.




Verify that this is the correct location for the SASROOT. Setup uses the CORE directory when updating the SAS license, so SAS.EXE must be in this directory. SASROOT is the location of SAS.EXE for the SAS installation that you are updating.

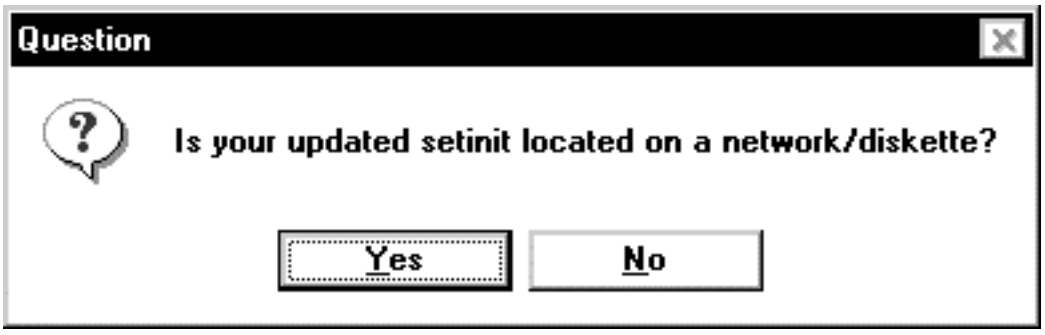
Select `Next` to continue updating the SAS license information, `Back` to return to the previous screen, or `Cancel` to exit Siupdate.




Verify that this is the correct location for the SASFOLDER. SASFOLDER is the working folder of your installed SAS System, and must be the same as what is stored in your CONFIG.SAS file.

Select `Next` to continue updating the SAS license information, `Back` to return to the previous screen, or `Cancel` to exit Siupdate.

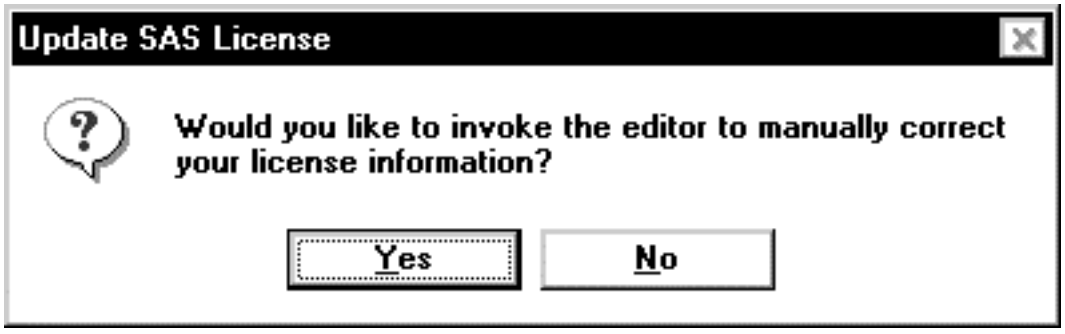
Once you have supplied the installation location of the Core SAS product, indicate whether or not your updated (new) `setinit.sas` file is located on the network/diskette as shown in the window below:




Select `Yes` if your new `SETINIT.SAS` is located on a network drive or on diskette. If your `SETINIT.SAS` file is on paper and not on diskette or accessible via the network, select `No`. You will be asked if you want to manually correct your existing `SETINIT.SAS` file.


If your new `SETINIT.SAS` is located on a network drive or diskette, provide the directory where your updated `SETINIT.SAS` file is located and select `Next`. Your SAS license will be updated.

If your new SETINIT file is not accessible on the network or diskette, select `Back` to return to the previous dialog. Select `No` on this question dialog so that you will be given the opportunity to edit the license information.




Select `Yes` if you would like to manually edit the `SETINIT.SAS` file that resides in the !SASROOT\core\sasinst directory. If you select `No`, Siupdate will end and the SAS license will not be updated.

## Updating Your SAS SETINIT during Installation of the SAS System

The installation process, SAS System Setup copies the `SETINIT.SAS` file into the !SASROOT\CORE\SASINST directory. (The `SETINIT.SAS` file can also be found on the installation media). If the `SETINIT.SAS` file appears correct to the SAS Setup program, the license update is executed automatically during the installation process. If the SAS Setup program determines the `SETINIT.SAS` file is expired or invalid, Setup allows you to specify a directory path containing valid license information to apply. (Expired files are often sent to non-U.S. customers to enable them to customize their `SETINIT.SAS` file with correct information while installing the SAS System).

## Executing From the Command Line

You can update your licensing information from the command line in one of two ways:

- Execute Siupdate from the command line:

  Invoke the SIUPDATE.EXE program from the !SASROOT\CORE\SASINST subdirectory. This will take you through the same routine as the `Update SAS License Information` icon does to update the SETINIT.

- Execute SAS from the command line to run the `SETINIT.SAS` file interactively:

  Invoke the SAS System and include the `SETINIT.SAS` file in the program editor by clicking your right mouse button and then select `File...Open...Read`. Type in the full path and name of the `SETINIT.SAS` file as shown in the following example and then select `OK`:

  ```
  C:\SAS\CORE\SASINST\SETINIT.SAS
  ```

  *Note:* This example assumes the SAS System was installed on C:\SAS and that command lines are turned off. If command lines are turned on, the right mouse button will work and you must issue the include command as shown in the following example:

  ```
  inc 'C:\SAS\CORE\SASINST\SETINIT.SAS'
  ```

  Make all the appropriate changes according to your paper SETINIT and then submit the program by pressing the F8 key or by typing `SUBMIT` on the command line. If there are differences between the SETINIT information that is displayed, and the paper SETINIT, the following errors are displayed in the LOG file:

  ```
  Error: Incorrect information was entered for the password.
  ```

Recall the `SETINIT.SAS` file by pressing the F4 key, or by typing `RECALL` on the command line. Check each line to ensure that the information displayed in the program editor matches the paper SETINIT exactly.

❑ If your license has expired, manually invoke SAS with special options that will allow the SETINIT to be applied.

1. Start Windows in enhanced mode, or have Windows 95 or Windows NT running.

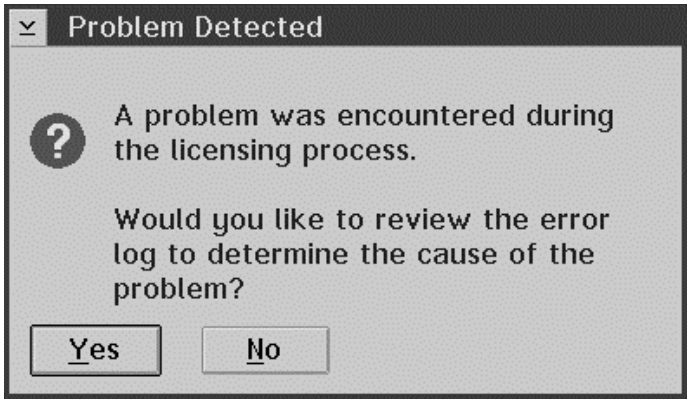
2. To invoke the SAS System using the Windows 95 style taskbar, select `Start` and then `Run`. If you are using the Windows Program Manager, select `File` and then `Run`.

3. Type the following as one command:

```
<source_drive:>\sas\sas.exe -setinit
-sysin c:\setinit.sas
-config <source_drive:>\sas\config.sas
```

## Licensing Process Problems

If the SAS licensing process encounters problems applying the new updated setinit, the following window is displayed:




Select `Yes` to review the error log. The SAS licensing program launches the default system editor to review the error log. Select `No` to bypass review of the error logs.

# Appendix N, Post-Installation Setup for the SQL Query Window

To successfully use the sample table named `EMPLOYEE` listed in the SQL Query Window online documentation, (and in the *SAS Guide to the SQL Query Window, Usage and Reference, Version 6, First Edition*), you must execute a program called RUNSAMPL.

1. To run the program, you must first submit a libname statement in the Program Editor window to assign the SAMPLE libname to the sample library as shown in the following example:

   ```
   libname sample '\SASROOT\base\sample';
   ```

   where `SASROOT` is the subdirectory in which the SAS System is installed. Check with your SAS Administrator for the location of the SAS System.

2. Include the RUNSAMPL program in the Program Editor Window by entering the following statement at a command line:

   ```
   include '\SASROOT\base\sample\runsampl.sas';
   ```

   where `SASROOT` is the subdirectory in which the SAS System is installed. Check with your SAS Administrator for the location of the SAS System.

3. Submit the program.

# Appendix O, Using Silent Setup

Silent Setup allows you to record an installation and then play it back later in order to install the SAS System on other machines. Using Silent Setup can save system administrators a lot of time when they are installing software on many different machines. Follow the steps in this appendix and read the help screens before you attempt to record an installation. In addition, make sure the machine to which you are installing has enough free disk space before continuing.

## Recording an Installation

Submit the command `setup /r` to begin recording an installation. By default, the path and the filename of the recorded session is copied to your Windows directory as shown in the following example:

```
C:\win95\setup.iss
```

If you want to record the session elsewhere, submit the following command:

```
setup /r/f1<path and filename of the recording session>
```

*Note:* Do not leave a space between f1 and the next argument as shown in the following examples:

`setup /r/f1C:\mydir\myfile.iss` (correct)
`setup /r/f1 C:\mydir\myfile.iss` (incorrect)

# Record Mode Options

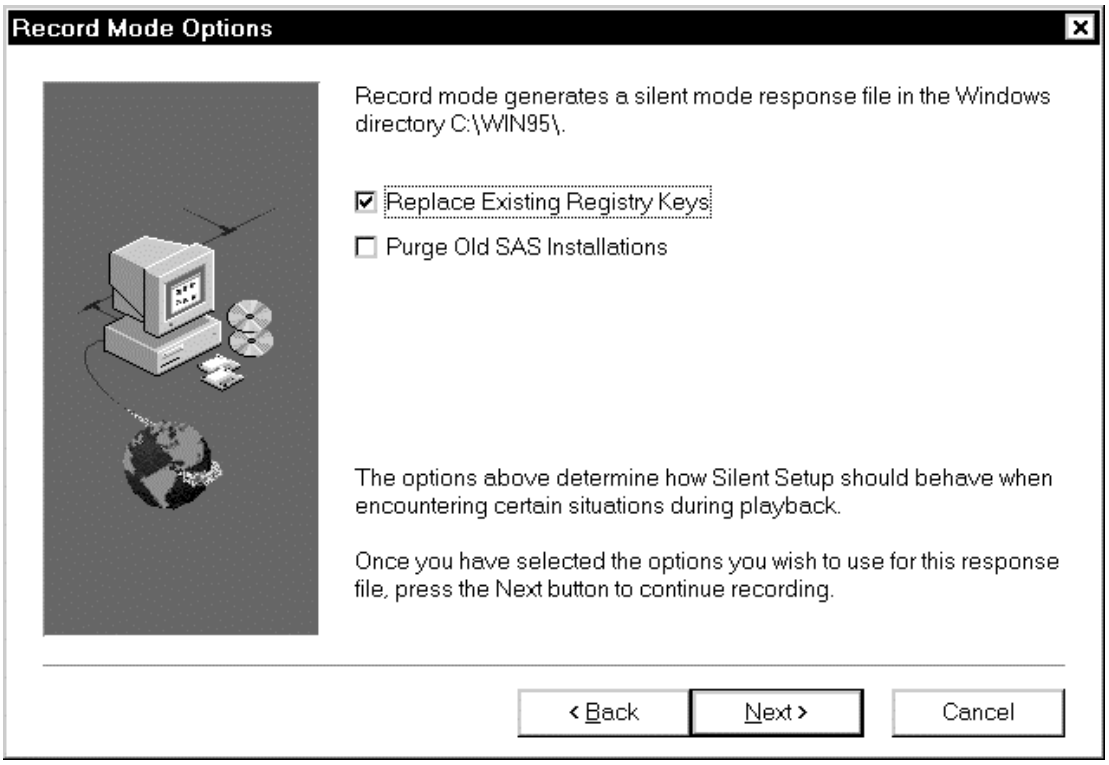
Record mode creates a file of the recorded session in the Windows directory `c:\WINNT35\`. The following options determine how Silent Setup should behave when encountering certain situations during playback:

- Replace Existing Registry Keys

  determines whether Setup will replace existing registry keys that it needs during playback

- Purge Old SAS Installations

  During playback, Silent Setup deletes old SAS installations along with everything that resides in the same directory as SAS.



## Playing Back an Installation

Submit the command `setup /s` to play back a previously recorded installation. By default, the path and filename of the recorded session is your Windows directory as shown in the following example:

```
C:\win95\setup.iss
```

If you recorded the session elsewhere, submit the following command:

```
setup /s/f1<path and filename of the previously recorded
session>
```

*Note:* Do not leave a space between f1 and the next argument as shown in the following examples:

`setup /s/f1C:\mydir\myfile.iss` (correct)
`setup /s/f1 C:\mydir\myfile.iss` (incorrect)

## Troubleshooting

Should Silent Setup encounter a problem during playback, the status dialog disappears and all files and changes made to your system are reversed, leaving the system in its original state. Since Silent Setup runs without user intervention, determining the cause of the termination can sometimes be difficult. The following are possible reasons why Silent Setup could terminate during playback:

- The drive to which you are installing does not contain enough free disk space. Free up some disk space and try again.

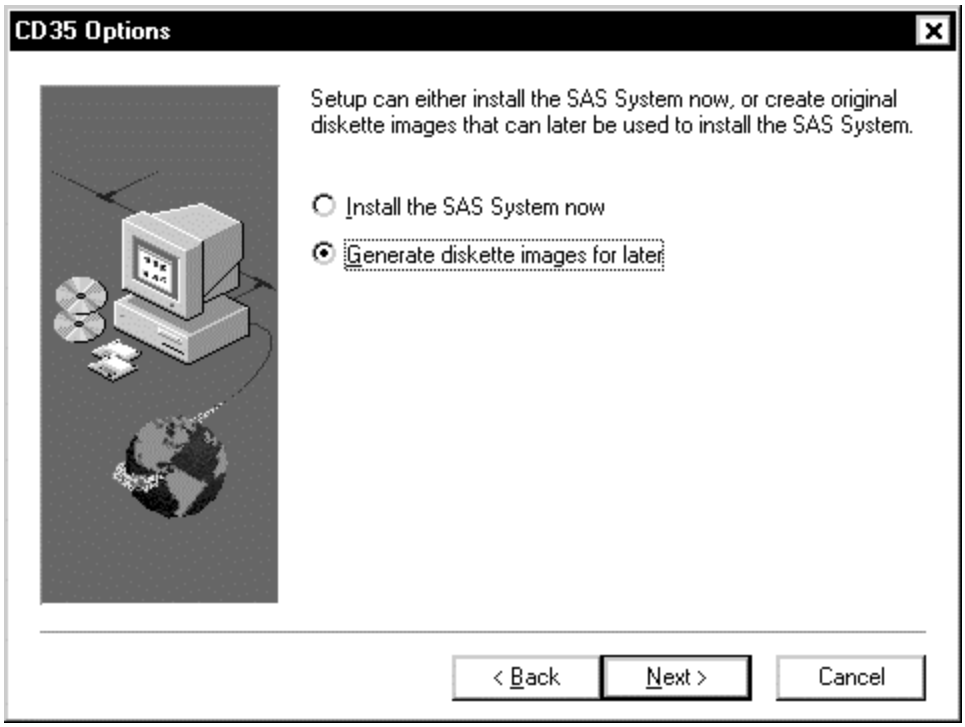
- The order of dialog prompts that you recorded in the response file (setup.iss) is not the same as the order of dialog prompts that Silent Setup is encountering (silently) during playback. This is the most common problem. Try running a normal interactive Setup on the machine in question and note any dialog prompts that were not recorded in the original response file. This may require recording a new response file to use on machines like the one exhibiting the problem.

## Recording External Setups

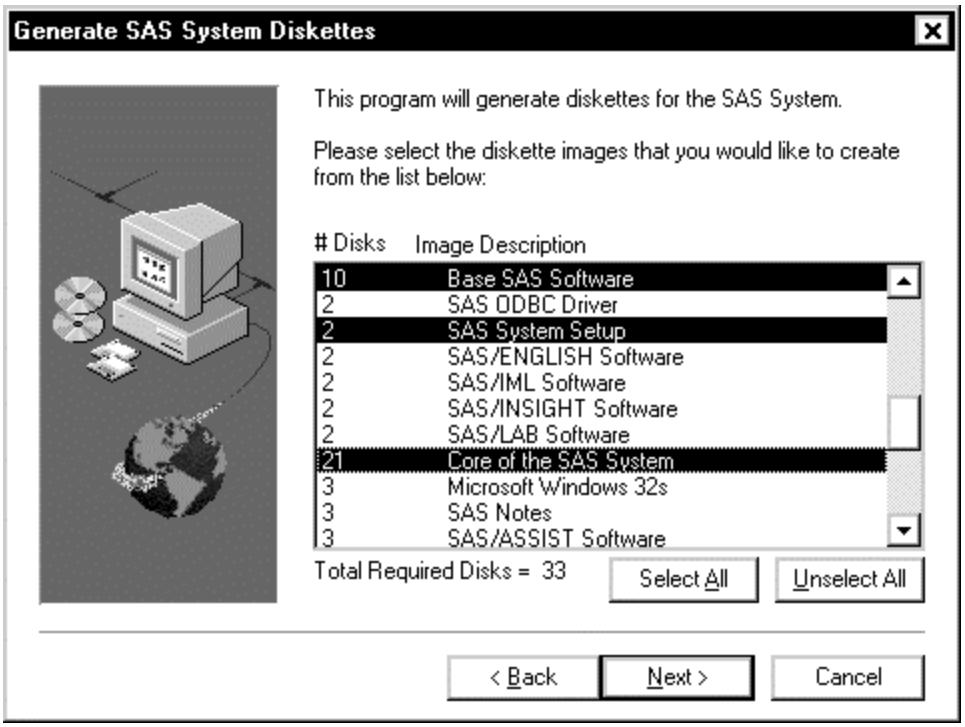
Silent Setup will not record external setups such as SAS Viewer or the SAS ODBC Driver setups. If you choose to record these external setups, at the time you play back the recorded session, you will be prompted to install the external setups.

# Appendix P, Generating Diskette Images

If you select `Generate diskette images for later` as shown in the following `Choose Options` window, the setup program will compute diskette requirements per component.

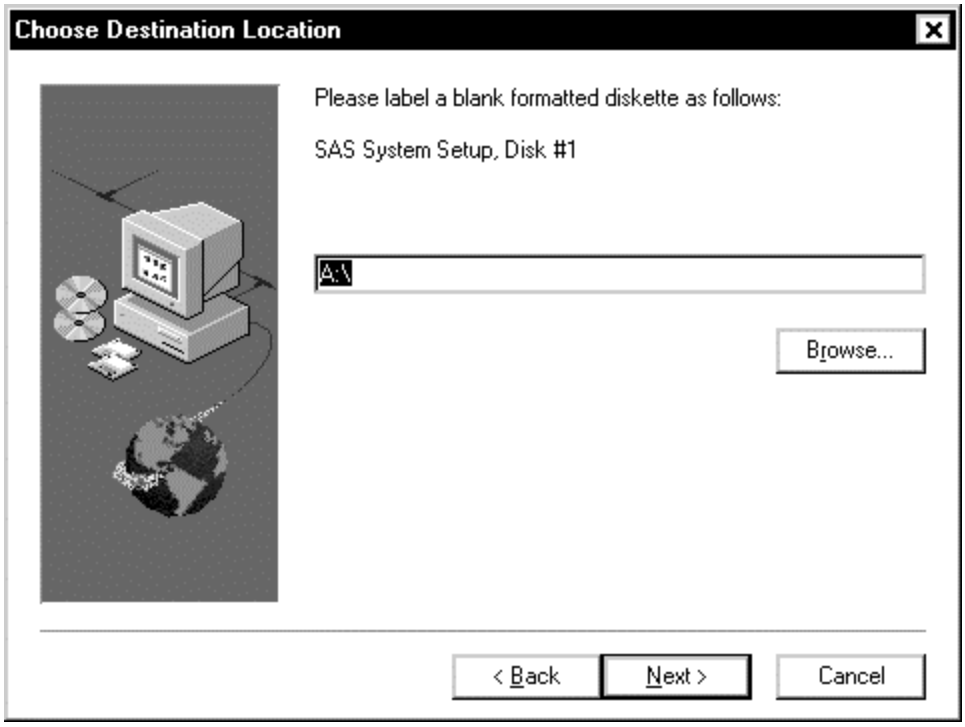



As you choose diskette images, the `Total Required Disks` field changes to reflect the number of blank formatted diskettes you will need. If you need to clear this field, select `None`. Select `Create` to begin copying files to diskette. To copy the entire SAS System to diskette, select `All`. It is recommended that you always select SAS System Setup when you generate a floppy set. This will enable you to use Setup to install the SAS image from a floppy set.

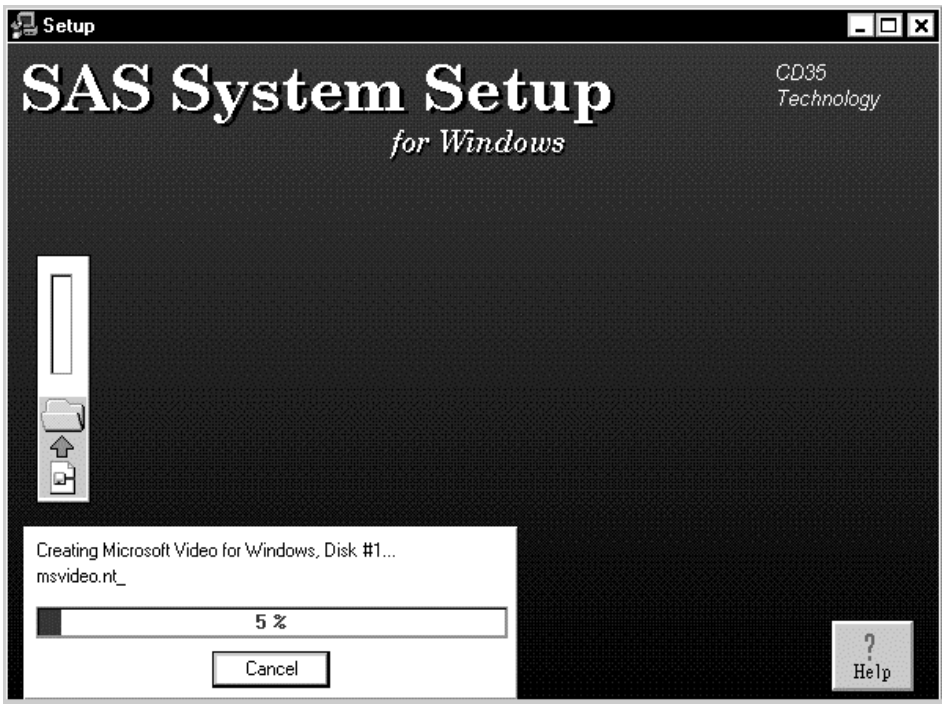



The SAS System Setup diskette that you create here will only contain information about the components you are generating diskettes for. This feature makes it easy for a System Administrator to create a floppy set with a customized components list for other users within their organization.

If you select `Create` you will be prompted to label and insert a diskette. This dialog displays the label that you should put on the diskette. When Setup is used later to install the SAS System from this set of floppies, it will ask for diskettes with these same labels.



The following status screen is displayed while the diskettes are being created. For each diskette, the status bar, located at the bottom left, grows from 0% to 100%.




You will be prompted to label and insert more diskettes as necessary.

After the diskettes have been created, the following screen is displayed. Select `OK` to terminate the Setup program.


The diskettes you generated can be used to install the component disk images that you selected. Users of these diskettes should insert the SAS System Setup diskette, change to the floppy disk drive, and type `Setup`.

When you install the SAS ODBC Driver from generated diskette images, you will be prompted to enter the 16-bit SAS ODBC Driver diskette twice. This is normal. The first time, during the installation, files will be copied from the diskette. The second time, at the end of the product installation, the SAS ODBC Driver will be installed. Refer to Appendix E, "Setting Up the SAS ODBC Driver" for more information.

# Federal Government Rights Notice

If your installation is a federal government site or a federal government prime contractor site, contractual requirements include a usage rights notice, which you should examine. This notice is file `FEDGOVT.TXT`, and is copied automatically during installation. The file is located in `!sasroot\fedgovt.txt`.

Review the rights notice and provide a way for other users at your installation to review it also. For example, you could add the notice as a `NEWS` item or use the `-ECHO` option telling your users to read the file. For more information on these options, refer to Chapter 7, "SAS System Options," in *SAS Companion for the Microsoft Windows Environment, Version 6, First Edition*.

# Glossary

This glossary defines terms that are used in the installation documentation and terms that you may encounter during installation of the SAS System. The terms are listed in alphabetic order.

AUTOEXEC.SAS

contains SAS statements that are executed automatically when the SAS System is invoked. This file is described in more detail in *SAS Companion for the Microsoft Windows Environment, Version 6, First Edition*.

CD-Client Installation

all or some of the SAS System components can be accessed from the installation CD-ROM or a shared network location. There are two types of client installations, full and selective. For a quick install, choose a CD-ROM Full install and only a few files will be installed locally. The SAS System components will be accessed from the CD-ROM or network.

Compact Installation

installs only the files necessary to start the SAS System. This installs CORE SAS software and the basic SAS System features and procedures contained in Base SAS software.

CONFIG.SAS

contains special SAS configuration options. This file is shipped with default option settings. You can edit the file and change the default settings. This file is installed in the SASROOT directory, but you can copy it to the directory from which you invoke the SAS System. For more information about this file, refer to *SAS Companion for the Microsoft Windows Environment, Version 6, First Edition*.

Custom Installation

allows you to select components of the SAS System to be installed. Within each component are options that include Required Files and possibly sample programs and sample data.

SAS Support Consultant

is the person designated at your site to assist SAS users with SAS software.

SAS Installation Representative

is the person appointed at your site to act as the liaison between the site and SAS Institute, Inc. This person is the contact for all SAS software matters.

SASROOT Directory

is the directory where you install the SAS System. It is called the SASROOT because the executable file (`SAS.EXE`) is stored in this directory, as well as the CORE subdirectory. You can choose any directory as the SASROOT directory for the SAS System.

SASLOAD Program

enables you to install the CORE of the SAS System and configure your SAS operating environment.

SETUP Program

enables you to install the SAS System and configure your SAS operating environment.

Technical Support Services

are provided by SAS Institute to the designated SAS Installation Representative and SAS Support Consultants. These individuals should be the initial contact for any user who needs technical assistance.

Template File

an outline of a `SETINIT.SAS` file. A Template file is often sent to non-US customers to enable them to customize their `SETINIT.SAS` file with correct information.

Test Streams

are SAS programs that test the success of your installation. Test streams are not available for all SAS System components.

Typical Installation

installs all the components that are licensed for your site. This does not include help files, sample programs, and sample data.

Utility Application

determines which utility features are available to you based on the SAS System products and components that you have installed. You can select any feature that appears in the list on the `Utility Application` window.