

System Requirements for SAS[®] 9.2 Foundation for Microsoft[®] Windows[®] for 64-Bit Itanium-based Systems[®]



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Using the System Requirements

This document provides requirements for installing and running SAS 9.2 Foundation on Microsoft Windows for 64-Bit Itanium-based Systems. You must update your system to meet the minimum requirements before running SAS 9.2 Foundation.

These are the major requirements listed in the document:

- Software Requirements
- Hardware Requirements
- Additional Features
- Space Requirements
- Specific Product Requirements
- Graphics Hardware and Software Compatibility

For additional information and to view the latest system requirements for your system, please visit the SAS Install Center Web site, <http://support.sas.com/documentation/installcenter>.

For information about SAS Technical Support, please visit <http://support.sas.com/techsup/>.

Software Requirements

Preparing for Installation

Administrator Privilege

An installer must have administrator privilege to install various updates. This requirement ensures that SAS 9.2 Foundation can be completely and safely installed.

Anti-virus and/or Firewall Software

Before you start the System Requirements Wizard, it is recommended that you close your anti-virus and firewall software. Some anti-virus and/or firewall configurations can prevent an application from installing successfully.

If you are unable to close the anti-virus or firewall software, make sure that your configuration allows you to install software and to update the registry. If your SAS installation fails and you have mandatory anti-virus or firewall software running, please check with your system administrator.

Operating System

Windows Environments

SAS 9.2 Foundation is supported in the following environments:

- Microsoft Windows Server 2003 for Itanium-base systems, Enterprise Edition updated with Service Pack 1
- Microsoft Windows Server 2003 for Itanium-base systems, Datacenter Edition updated with Service Pack 1

File System Recommendations:

The use of file systems supporting long filenames is required.
NTFS is recommended.

Hardware Requirements

SAS 9.2 Foundation on Microsoft Windows for 64-Bit Itanium-based Systems

Please note the following requirements for installation of SAS 9.2 Foundation for 64-Bit Windows.

Machines Supported

Intel Itanium processor family

Memory Requirements

Microsoft Windows Server 2003 Itanium Editions

1GB minimum or more for improved performance

1GB minimum of swapfile space

Monitors Supported

SVGA (resolution of 800x600 or higher)

Additional Features

The User Installation Experience in SAS 9.2

If you are upgrading to SAS 9.2 Foundation, please note that some of these features were not available in earlier releases of SAS software.

Internet Access

With Internet access, you can view and download documents from the SAS Install Center, and review material on the SAS Support Web site.

Web Browser

A Web browser is required to use two features of SAS 9.2 Foundation. Internet Explorer, Version 6, Service Pack 2 (or higher) that you received with Windows Server meets SAS 9.2 Foundation requirements.

1. Output is rendered as HTML pages using the SAS 9.2 Output Delivery System (ODS). Any Web browser can be used for basic viewing, but if Internet Explorer, Version 6 SP 2 (or higher) is used, ODS output can be viewed in an integrated browser window that functions as part of SAS 9.2 Foundation. Other browsers can be used to view ODS output in a separate application window.
2. To conform to the native Windows environment, SAS Help and Documentation is provided in the compiled HTML format supported by the Microsoft HTML Help Viewer, which presents help information in the same layout used in newer Windows applications. This format is very compact and provides extensive searching capabilities. The highest level of functionality is available when Internet Explorer, Version 6, Service Pack 2 (or higher) is installed.

SAS System Viewer

The SAS System Viewer is an application intended for the Windows environment as a *lightweight viewer* for SAS data files and other simple text-based files. The application lets you view the contents of SAS data files without using SAS and without requiring SAS 9.2 Foundation to be installed on your machine. You may distribute this application royalty-free in order to give other people the ability to view your SAS data.

The SAS System Viewer lets you view the following types of SAS data sets and SAS catalogs, which can reside on a local or network disk:

SAS data sets generated by SAS 9, SAS 9.1.3, or SAS 9.2 Foundation for Windows.

SAS Data sets generated by Version 8 of the SAS System for Windows.

SAS data sets generated by any Version 6 release of the SAS System for Windows, OS/2, or DOS.

These data sets can be compressed and/or encrypted. If you attempt to access an encrypted data set, the SAS System Viewer prompts you for the read password.

SAS catalogs created by the SAS System for Windows or OS/2 generated by Release 6.04 through Release 6.12.

SAS programs (.sas files), output listings (.lst files), logs (.log files), configuration files (.cfg files).

Files created by SAS Institute's JMP product (.jmp files) that reside on a local or network disk.

Other simple (ASCII) text-based files.

HTML pages, such as output rendered by SAS 9, SAS 9.1.3, or SAS 9.2 Foundation.

You can also view cross-platform Version 6 data sets and catalogs (OpenVMS, MacOS, UNIX, OS/2, Windows, and DOS) that you can access from a disk, file server, or using the HTTP and FTP network protocols.

Installation of the SAS System Viewer requires about 4.8 MB of disk space. For more information about the SAS System Viewer, please see "Installing the SAS System Viewer" in the *User Installation Guide for SAS 9.2 Foundation on Microsoft Windows for 64-Bit Itanium-based Systems*.

Dynamic Data Exchange

Dynamic Data Exchange (DDE) allows for the exchange of data between SAS 9.2 Foundation and any other application supporting DDE. SAS 9.2 Foundation will act as a client only.

Electronic Mail

Send Mail... is provided as a menu item in the File pull-down menu. Send Mail... allows electronic mail messages to be initiated from SAS 9.2 Foundation. It is also possible to send mail using a data step file access method or SCL via SAS/AF software. The following mail APIs are supported - MAPI and VIM. This requires installation of third party products such as Microsoft Outlook, Microsoft Outlook Express, or Lotus Notes 4.0 (32-bit version only) and above. SMTP email server access via MAPI requires an Internet connection.

Lotus Notes

The Lotus Notes access method, NOTESDB, allows populating new documents directly to Lotus Notes from SAS 9.2 Foundation. The NotesSQL ODBC driver allows Lotus Notes documents to be accessed from within SAS 9.2 Foundation. An installed license of Lotus Notes Desktop is required. SAS 9.2 Foundation supports the 32-bit version of Lotus Notes 4.0 or later.

SAS Service Configuration Utility

The SAS Service Configuration Utility allows administrators to customize the operation of SAS 9.2 Foundation running as a service on a particular computer. It requires only 0.5 MB of space on the computer using the SAS Service Configuration Utility.

For additional information, refer to the SAS Service Configuration Utility chapter in *Configuration Guide for SAS 9.2 Foundation on Microsoft Windows for 64-Bit Itanium-based Systems*.

Space Requirements

The media you received contains all SAS software products. This media is customized by the SAS Installation Data for easy identification of the products for which you are licensed. The following list contains space requirements in MB for all of the products available with SAS 9.2 Foundation for Windows. Use this information to help you determine how much free disk space you must have available before you can install SAS 9.2 software. Disk space requirements will vary depending upon the blocking factor and compression algorithms that are in use on the installation disk drive. Product disk space values were determined with the HTMLHelp System in use.

Software Product	Disk Space (in MB)
Base SAS Software	550.2
SAS High-Performance Forecasting Software	13.7
SAS/ACCESS Interface to DB2 Software	1.0
SAS/ACCESS Interface to Oracle Software	1.0
SAS/AF Software	4.9
SAS/CONNECT Software	4.2
SAS/EIS Software	25.1
SAS/GIS Software	63.2
SAS/GRAPH Software	88.2
SAS/IntrNet Software	4.9
SAS Integration Technologies Software	8.8
SAS/LAB Software	10.6
SAS/SHARE Software	1.1
SAS/TOOLKIT Software	1.1

DBCS Support

The following list contains space requirements in MB for SAS 9.2 components that offer DBCS support.

Software Product- DBCS Support	Disk Space (in MB)*
Core of SAS 9.2 DBCS Support Files	34.0
SAS/ACCESS Interface to DB2 DBCS Support Files	0.9
SAS/ACCESS Interface to Oracle DBCS Support Files	0.3
SAS/AF DBCS Support Files	0.5
SAS/CONNECT DBCS Support Files	1.1
SAS/EIS DBCS Support Files	0.4
SAS/Lab	1.9
SAS/SHARE DBCS Support Files	0.1
Total	39.20

Note about the DBCS Table

- * The actual disk space size has been rounded to the nearest tenth. Therefore, the values will differ slightly from the ones shown by the installer.

National Language Support (NLS)

The following list contains space requirements in MB for SAS 9.2 components that support Asian languages.

Languages Supported	Disk Space (in MB)*	See Table
Chinese – traditional	3.0	below
Chinese – simplified	174.0	below
Japanese	262.0	Page 7
Korean	174.0	Page 8

Asian Language Support

The following list contains space requirements in MB for SAS System components that support various Asian Languages.

Traditional Chinese Support	Disk Space (in MB)*
Base SAS Traditional Chinese Support Files	3.0

Simplified Chinese Support	Disk Space (in MB)*
Base SAS Simplified Chinese Support Files	47.8
SAS/ACCESS Interface to DB2 Simplified Chinese Support Files	0.9
SAS/ACCESS Interface to Oracle Simplified Chinese Support Files	0.9
SAS/AF Simplified Chinese Support Files	2.0
SAS/CONNECT Simplified Chinese Support Files	0.9
SAS/EIS Simplified Chinese Support Files	1.9
SAS/GIS Simplified Chinese Support Files	1.8
SAS/IntrNet Simplified Chinese Support Files	1.8
SAS/LAB Simplified Chinese Support Files	0.6
SAS/SHARE Simplified Chinese Support Files	0.8
Total	59.4

Japanese Support	Disk Space (in MB)*
Base SAS Japanese Support Files	78.1
SAS/ACCESS Interface to DB2 Japanese Support Files	0.9
SAS/ACCESS Interface to Oracle Japanese Support Files	0.9
SAS/AF Japanese Support Files	2.0
SAS/CONNECT Japanese Support Files	0.9
SAS/EIS Japanese Support Files	10.1
SAS/GIS Japanese Support Files	1.8
SAS/IntrNet Japanese Support Files	1.8
SAS/LAB Japanese Support Files	0.4
SAS/SHARE Japanese Support Files	0.8
Total	97.7

Korean Support	Disk Space (in MB)*
Base SAS Korean Support Files	47.8
SAS/ACCESS Interface to DB2 Korean Support Files	0.1
SAS/ACCESS Interface to Oracle Korean Support Files	0.1
SAS/AF Korean Support Files	2.0
SAS/CONNECT Korean Support Files	0.9
SAS/EIS Korean Support Files	1.9
SAS/GIS Korean Support Files	1.8
SAS/IntrNet Korean Support Files	1.6
SAS/LAB Korean Support Files	0.6
SAS/SHARE Korean Support Files	0.8
Total	57.6

Specific Product Requirements

Base SAS Software

Requirements for SPD Engine on Microsoft Windows:

The following are general guidelines for a minimum computer system to support SPD Engine:

- An SMP (symmetric multiprocessing) computer with at least two CPUs; four are preferred
- At least one I/O channel per two CPUs
- Enough disk drives to have at least one mount point per CPU isolated on its own disk; two mount points per CPU are better

The use of ODS Graphics in Base SAS software requires a SAS/GRAPH license.

SAS High-Performance Forecasting Software

Base SAS software is a prerequisite for the installation of SAS High-Performance Forecasting.

SAS/ACCESS Interface to DB2 Software

Products Included:

- Base SAS software
- SAS/ACCESS Interface to DB2 software

DBMS Products Required:

One of the following releases of IBM's DB2 Client software (Version 8.1 FixPak 4 or later) is required:

- IBM DB2 Run-Time Client
- IBM DB2 Administration Client
- IBM DB2 Application Development Client

In addition, IBM DB2 Connect must be installed to connect to DB2 databases that reside on AS/400, VSE, VM, MVS, and z/OS systems.

Before using SAS/ACCESS Interface to DB2 software, you must install the appropriate IBM DB2 Client software to allow your PC to connect to a DB2 server. Contact your database administrator for assistance with the Client Setup utility.

For more information about SAS/ACCESS Interface to DB2 software, please see the DB2 chapter in *SAS/ACCESS Software for Relational Databases: Reference*.

SAS/ACCESS Interface to ODBC Software

Products Included:

- Base SAS software
- SAS/ACCESS Interface to ODBC software

DBMS Product Required: A 64-bit ODBC driver for the data source from which you want to access data

Before you can use SAS/ACCESS Interface to ODBC software, a 64-bit ODBC driver for the data source from which you want to access data is required. ODBC drivers are often available from DBMS vendors and other third party ODBC driver developers. The ODBC driver you choose may require additional DBMS software for network access. All required network software supplied by your database system vendor must be 64-bit-compliant.

Please see the *Configuration Guide for SAS 9.2 Foundation on Microsoft Windows for 64-Bit Itanium-based Systems*.

SAS/ACCESS Interface to OLE DB Software

Products Included:

- Base SAS software
- SAS/ACCESS Interface to OLE DB software

DBMS Product Required: An OLE DB data source provider

Before you can use SAS/ACCESS Interface to OLE DB software, an OLE DB provider for the data source from which you want to access data is required. OLE DB providers are often available from DBMS vendors and other third party software vendors. The OLE DB provider you choose may require additional DBMS software for network access. All required network software supplied by your database system vendor must be 64-bit-compliant.

SAS/ACCESS Interface to Oracle Software

Products Required:

- Base SAS software
- SAS/ACCESS Interface to Oracle software

DBMS Products Required:

The user may install an Oracle client on the same box with the products listed above, or an Oracle server may be used in place of the Oracle client.

The minimum required Oracle client/server release is Oracle, Release 9i (64-bit libraries).

Note: In order to use the Bulk Load feature of this SAS product, you must have Oracle's SQL*Loader dataloading utility installed. This utility can be obtained by running the Oracle installer and selecting the Oracle Utilities product. Please refer to your Oracle documentation for information on SQL*Loader.

SAS/ACCESS Interface to PC Files Software

Products Included:

- Base SAS software
- SAS/ACCESS Interface to PC Files software
- SAS PC Files Server, running on Windows 32-bit System

DBMS Products Required on Windows

- Microsoft Office 2007 System Driver: Data Connectivity Components (ACE)
- Microsoft Data Access Components (MDAC), Version 2.8 or higher

SAS/ACCESS Interface to PC Files software supports access to many different file formats files on Windows. Because Microsoft does not support the 64-bit version of Microsoft ACE Components, SAS/ACCESS Interface to PC Files software supports access to Microsoft Access database files and Microsoft Excel workbook files using the Client Server Model solution.

To access Microsoft Access database files (.mdb or .accdb), Microsoft Excel workbook files (.xls, .xlsb, .xlsb or .xlsx) or any ODBC supported data sources, SAS/ACCESS Interface to PC Files software requires SAS PC Files Server running on a Windows 32-bit system or a Windows 64-bit system with a WOW(Windows-On-Windows) subsystem.

SAS/AF Software

Products Required for Build Mode:

- Base SAS software
- SAS/AF software
- SAS/GRAPH software (to create and display some graphics objects)

Other products may be required depending on the application.

Products Required for Run Mode:

- Base SAS software
- SAS/GRAPH software (to display some graphics objects)

Other products may be required depending on the application.

Printers:

A color or gray scale printer is required for printing graphics-based objects.

Certain non-graphic objects may require SAS/GRAPH software to print depending on the object.

SAS/CONNECT Software

Product Included: Base SAS software

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

SAS/EIS Software

Products Required for Build Mode:

- Base SAS software
- SAS/AF software
- SAS/EIS software
- SAS/FSP software
- SAS/GRAPH software

Other products may be required depending on the application.

Products Required for Run Mode:

- Base SAS software
- SAS/GRAPH software
- SAS/EIS software

Other products may be required depending on the application.

Memory: 128 MB required

SAS/ETS Software

The use of ODS Graphics in SAS/ETS software requires a SAS/GRAPH license.

SAS/GIS Software

Products Required for Build Mode:

- Base SAS software
- SAS/AF software
- SAS/GIS software
- SAS/GRAPH software

Other products may be required depending on the application.

Products Required for Run Mode:

- Base SAS software
- SAS/FSP software
- SAS/GIS software
- SAS/GRAPH software

Other products may be required depending on the application.

Printers:

A color or gray scale printer is required. The list of possible printers can be found in the Graphics Hardware and Software Compatibility section on page 15.

Display: 256 color display adapter strongly recommended.

SAS/GRAPH Software

The 32-bit version of Internet Explorer, Version 7 is required to run the SAS/GRAPH ActiveX Graph Control from a Web browser. The ActiveX Graph control is not supported on the 64-bit version of Internet Explorer.

The 32-bit version of Internet Explorer, Version 7 is also required to run the SAS/GRAPH Java Applets from a Web browser.

SAS/IntrNet Software

SAS/IntrNet software consists of several components that may be installed independently. SAS/IntrNet Server software is installed on an existing SAS System and is included on SAS 9.2 media.

CGI Tools and Applications

Application Dispatcher:

Requires Base SAS software and SAS/IntrNet Server software. The Application Broker component of the Application Dispatcher must be installed on a Web server.

htmSQL:

Requires Base SAS software, SAS/SHARE software, and a SAS/IntrNet software license (SETINIT). The htmSQL component must be installed on a Web server.

MDDB Report Viewer Application:

Requires Base SAS software; SAS/GRAPH software; SAS/IntrNet software; and SAS/EIS software or SAS OLAP Server software. The Application Dispatcher component must be installed and configured.

Xplore Sample Web Application:

Requires Base SAS software and SAS/IntrNet Server software. The Application Dispatcher component must be installed and configured.

Design-Time Controls:

Requires Base SAS software and SAS/IntrNet Server software. The Application Broker component of the Application Dispatcher must be installed on a Web server.

Java Tools and Applications

SAS/CONNECT Driver for Java:

Requires Base SAS software, SAS/CONNECT software, and SAS/IntrNet Server software. SAS/SHARE software must also be installed if data services are used. The Java Tools package must be installed on a Web server or a client system.

Tunnel Feature:

Must be installed on a Web server running on a UNIX or Windows system.

SAS/LAB Software

Products Included:

- Base SAS software
- SAS/FSP software (required for interactive data entry)
- SAS/GRAPH software
- SAS/LAB software

SAS/OR

The use of traditional graphics in SAS/OR software requires a SAS/GRAPH license.

SAS/QC

The use of ODS Graphics and traditional graphics in SAS/QC software requires a SAS/GRAPH license.

SAS/SHARE Software

Product Included: Base SAS software

SAS/SHARE software uses the TCP/IP access method and supports Microsoft's TCP/IP System Driver, which is provided with Windows.

SAS/TOOLKIT Software

Products Included:

- Base SAS software
- A compiler

The only language with a Production status for SAS/TOOLKIT software is C. Other languages have a Beta status.

Graphics Hardware and Software Compatibility

Printers

SAS/GRAPH software supports PostScript, HP-GL, HP-GL/2, PCL, and other printer languages on printers from manufacturers such as Brother, Canon, Hewlett-Packard, IBM, Konica Minolta, Lanier, Lexmark, Okidata, QMS, Ricoh, Sharp, Xante, and Xerox.

SAS/GRAPH software supports any printer that you are using with Microsoft Windows via the WINPRTM (for monochrome printers), WINPRTG (for printers that support gray-scale shading), and WINPRTC (for color printers) device drivers.

Here is a partial list of printers that SAS/GRAPH software supports with native device drivers:

- CalComp ColorMaster, ColorMaster Plus, PlotMaster
- Canon Bubble Jet, Laser Shot
- Digital printers which support either SIXEL, HP PCL, Tektronix, or PostScript emulation modes
- Epson FX and LQ series printers (and all printers running in Epson emulation mode)
- Hewlett-Packard LaserJet, DeskJet, PaintJet, and DesignJet printers (and compatibles)
- IBM Graphics, Proprinter, and ColorJet printers
- PostScript printers (including color and gray-scale PostScript printers)
- QMS Colorgrafix with CGM interpreter
- QMS 800, 1200, 1500, 2200, and 2400 using QUIC or Tektronix emulation modes
- Talaris 800, 802, 1200, 1500, and 2400 using QUIC or Tektronix emulation modes
- Talaris printers using the EXCL language
- Tektronix Phaser printers (all models)
- Tektronix 4693 printers with Tektronix 4510 rasterizer
- Xerox 2700 and 4045 printers with a GRAPHX cartridge
- Xerox 3700 (with imaging board and at least 1M of memory)
- Xerox 4030 (contact Technical Support), 4213, 4235, and 4700
- Xerox 4700 printer
- Xerox 5775 color copier with an EFI Fiery attachment

Native drivers may also be available for additional printers not listed above and that do not support PostScript, HP-GL, or HP PCL. Contact SAS Technical Support for additional information on these drivers.

Images and Interfaces to Other Software

Included with SAS/GRAPH software are drivers that can produce Computer Graphics Metafiles (CGM) in binary, character, and clear-text formatted output for use by devices or software that support CGM, such as Word for Windows, WordPerfect for Windows, Harvard Graphics, and Lotus Freelance.

SAS/GRAPH software can generate encapsulated PostScript vector files, which can be exported to word processing packages such as Microsoft Word and WordPerfect.

SAS/GRAPH software can also generate Windows metafiles that can be exported to numerous packages including Microsoft Office, Lotus Smart Suite, and Perfect Office. Please contact SAS Technical Support for details.

SAS/GRAPH software's HPGL or HPGL2 driver can be used to produce files which can be transferred to most vector-based drawing programs such as CorelDraw and Micrografx Designer.

SAS/GRAPH software also has drivers for PDF and SVG along with image file formats of BMP, DIB, EMF, EPSI, PBM, PPM, GIF, JPEG, EMF, WMF, PNG, TIFF, and PaintBrush image formats.

In addition, SAS/GRAPH software can import graphics in the following formats:

- BMP - Microsoft Windows Bitmap
- DIB - Device Independent Bitmap
- EMF - Microsoft NT Enhanced Metafile
- EPSI - Encapsulated PostScript Interchange
- GIF - Graphics Interchange Format
- JPG - JPEG Files
- PBM - Portable Bitmap
- PCD - PHOTO CD
- PCX - PC PaintBrush
- PNG - Portable Network Graphics
- TGA - TARGA Format
- TIF - Tagged Image File Format
- WMF - Microsoft Windows Metafile Format
- XBM - X Window Bitmaps
- XWD - X Window Dump

Viewing HTML Pages Created with the ActiveX and Java Device Drivers

The ActiveX and Java device drivers allow you to create HTML pages from within SAS 9.2 Foundation.

Refer to the "SAS/GRAPH Software" section on page 12 for a list of browsers with which you can view HTML pages on this operating environment.

To view the Java applets, the Java plug-in must be installed on each client machine. On Windows systems, the user can install the plug-in when prompted if it is not already installed.



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