

# System Requirements

## The SAS<sup>®</sup> System Release 8.2 (TS2M0) Linux<sup>®</sup>

This document provides requirements for installing and running the SAS System for Linux. You must update your system to meet the minimum requirements before running the SAS System. The major requirements listed in the document are:

- ❑ Software Requirements
- ❑ Hardware Requirements
- ❑ Space Requirements
- ❑ Specific Product Requirements
- ❑ Graphics Hardware and Software Compatibility

For additional information and to view the latest system requirements for your system, access the following Web site:

<http://www.sas.com/newversion>

or contact SAS Institute Technical Support (refer to "Contacting SAS Institute Technical Support" in the Installation Instructions included in your package).

## Software Requirements

### Operating System

- SuSE Linux, Release 7.1
- Red Hat Linux 6.2

Both distributions use:

- Linux kernel 2.2.x
- GNU libc 2.1.3

Other Linux distributions that include these levels of the kernel and libc may be compatible with SAS software, but they have not been tested.

One limitation of 2.2 series Linux kernels is a lack of support for files larger than 2 GB. However, patches exist to create a 2.2 kernel with Large File Support (LFS). The SAS System will run without LFS enabled; however, when the SAS System is run on a kernel with LFS, it can read and write files larger than 2 GB. For more information, refer to the **SAS on Linux and Large File Support** page at the following Web site:

<http://www.sas.com/service/admin/unx/linux/lfs/index.html>

## **Web Browser**

The SAS System requires:

- Netscape Navigator, Version 4.08 or Netscape Communicator, Version 4.7 or higher

For best performance, Netscape Communicator, Version 4.7.3 or higher is recommended.

The latest version of Netscape can be downloaded from:  
<http://home.netscape.com/computing/download/index.html>

Netscape Communicator, Version 6, Preview Releases 1 and 2 have not been extensively tested with the SAS System and there are known incompatibilities between Netscape Communicator, Version 6 and the SAS System; therefore, Netscape Communicator, Version 6, Preview Releases 1 and 2 are not supported in this release.

## **Utilities**

### ***PDF and PostScript Readers***

Some documentation delivered with the SAS System is stored in PDF and PostScript formats. You can download readers for files stored in these formats from the following sites:

For PostScript files, you can obtain a copy of Ghostview, Ghostscript, or GSview from:

<http://www.cs.wisc.edu/~ghost/index.html>

For PDF files, you can obtain a copy of Adobe Acrobat Reader from:

<http://www.adobe.com/prodindex/acrobat/readstep.html>

## **Hardware Requirements**

### **Machines Supported**

- Intel Pentium processors

### **Distribution Media**

- CD-ROM

### **Memory Requirements**

- 64 MB recommended
- 8 MB additional recommended for each concurrent user

### **Terminals Supported**

- Any X Windows-based terminal or server that supports a minimum of 256 colors

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## Space Requirements

The media you received is customized for your site and contains all of the SAS software products for which you are licensed. The following list contains space requirements in MB for all of the products available with this release of the SAS System on Linux systems. Use this information to help you determine how much free disk space you must have available before you can install the SAS System. The SAS System installation requires that 20 MB of hard disk space be available on the /tmp partition.

Software Product	Required Disk Space	Additional Space for Samples/Optional Files
Base SAS Software	169.0	7.9
DBCS Asian Language Support Software	42.5	0.0
SAS/ACCESS Interface to DB2 Software	0.5	0.2
SAS/ACCESS Interface to ODBC Software	0.6	0.2
SAS/ACCESS Interface to ORACLE Software	0.6	0.2
SAS/ACCESS Interface to PC File Formats Software	0.2	0.0
SAS/ACCESS Interface to SYBASE Software	0.8	0.2
SAS/AF Software	8.6	0.0
SAS/ASSIST Software	16.3	0.0
SAS/CONNECT Software	3.1	0.3
SAS Data Quality - Cleanse	6.1	0.1
SAS/EIS Software	19.9	10.5
Enterprise Miner Server Software	49.8	43.2
SAS/ETS Software	22.2	0.6
SAS/FSP Software	0.9	0.0
SAS/Genetics Software	0.9	0.1
SAS/GIS Software	55.1	0.3
SAS/GRAPH Software	31.1	2.8
SAS/GRAPH Map Data Sets	57.1	0.0
SAS/IML Software	6.5	0.6
SAS/INSIGHT Software	12.6	0.4
SAS Integration Technologies Software	8.3	0.2
SAS/IntrNet Software	1.9	1.1
SAS IT Resource Management Server Software	161.4	64.6
SAS IT Security Management Server Software	161.4	64.6
SAS IT Service Level Management Software	1.9	12.0
SAS/LAB Software	7.3	0.0
SAS/MDDDB Server Software	13.0	0.0
SAS OnlineTutor Software	57.8	0.0
SAS/OR Software	30.2	2.0
SAS/QC Software	24.2	4.1
SAS Research Data Management	200.0	0.0
SAS/SECURE 168-bit Software	1.0	0.0
SAS/SHARE Software	35.8	0.2
SAS/SPECTRAVIEW Software	1.9	11.4
SAS/STAT Software	36.1	2.3
SAS/TOOLKIT Software	10.1	0.0
SAS/Warehouse Administrator Software	40.1	0.0

## SAS/GIS Census Tract Maps

State	Required Disk Space in MB
Alabama	11.9
Alaska	9.8
Arizona	3.7
Arkansas	10.8
California	16.7
Colorado	7.5
Connecticut	2.3
Delaware	0.7
District of Columbia	0.1
Florida	14.0
Georgia	14.4
Hawaii	1.5
Idaho	8.0
Illinois	12.8
Indiana	7.5
Iowa	7.7
Kansas	8.3
Kentucky	11.8
Louisiana	16.0
Maine	7.7
Maryland	4.0
Massachusetts	4.2
Michigan	11.9
Minnesota	16.4
Mississippi	8.9
Missouri	12.2

State	Required Disk Space in MB
Montana	12.2
Nebraska	6.8
Nevada	3.1
New Hampshire	2.5
New Jersey	3.7
New Mexico	4.4
New York	13.4
North Carolina	14.5
North Dakota	9.0
Ohio	10.6
Oklahoma	8.9
Oregon	9.2
Pennsylvania	12.8
Rhode Island	0.8
South Carolina	9.0
South Dakota	8.0
Tennessee	13.1
Texas	26.3
Utah	4.9
Vermont	1.9
Virginia	11.4
Washington	9.3
West Virginia	6.4
Wisconsin	12.5
Wyoming	6.7
<b>Total for all entries</b>	<b>452.2</b>

## SAS/IntrNet Software Components

The SAS/IntrNet Software Components are contained in the *SAS Client-Side Components* CD and have the following disk space requirements if installed:

Software Component	Required Disk Space in MB
CGI Tools for Web Server	3.8
Java Tools	1.8
MetaSpace Explorer	10.5
Connection Wizard	7.8
<b>Total</b>	<b>23.9</b>

## Japanese Language

<b>Japanese Support</b>	<b>Primary Encoding Required Disk Space</b>	<b>Additional Space for Samples/ Optional Files</b>	<b>Secondary Encoding Required Disk Space</b>	<b>Additional Space for Samples/ Optional Files</b>
SAS/ACCESS Interface to PC Files Formats Software	0.1	0.0	0.1	0.0
Base SAS Software	41.0	0.3	41.0	0.3
SAS/AF Software	0.1	0.0	0.1	0.0
SAS/ASSIST Software	14.4	0.0	13.4	0.0
SAS/EIS Software	13.4	0.0	12.8	0.0
SAS/GRAPH Software	3.1	0.0	3.2	0.0
SAS/GRAPH Map Data Sets	0.9	0.0	0.9	0.0
SAS/INSIGHT Software	0.2	0.0	0.3	0.0
SAS/IntrNet Software	0.4	0.0	0.3	0.0
SAS/MDDB Server Software	0.1	0.0	0.1	0.0

# Specific Product Requirements

## SAS/ACCESS Interface to DB2 Software

### Products Required:

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

### DBMS Products Required:

- Universal Database, Version 6 for Linux
- Universal Database, Version 7.1 for Linux

SAS/ACCESS Interface to DB2 software can be installed on a DB2 server or on a DB2 Client Application Enabler node. DDCS is required to connect to host database management systems like DB2 for MVS, DB2 for VSE and VM (formerly SQL/DS), and OS/400.

## SAS/ACCESS Interface to ODBC Software

### Products Required:

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

### DBMS Products Required:

- A compliant ODBC driver manager and ODBC driver

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 in order to access the data.

You may have to edit the `.odbc.ini` file in your home directory with a text editor to configure data sources. Some ODBC driver vendors may allow a system administrator to maintain a centralized copy by setting an environment variable.

The ODBC drivers are ODBC API-compliant dynamic link libraries, referred to in UNIX as shared objects. You must include the full path to the dynamic link libraries in `LD_LIBRARY_PATH` so that the ODBC drivers can be loaded dynamically at run time.

**Note:** SAS/ACCESS Interface to ODBC software has been tested using the MERANT DataDirect Connect ODBC driver and the DataDirect SequeLink ODBC driver.

For more information, please consult your ODBC driver vendor.

## SAS/ACCESS Interface to ORACLE Software

### Products Required:

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

### DBMS Products Required:

SAS/ACCESS Interface to ORACLE software can be installed on either a full Oracle RDBMS server node or on an Oracle client node that has Oracle SQL\*Net support.

The following Oracle release is required:

- Oracle, Release 8.1.5.x

## SAS/ACCESS Interface to SYBASE Software

### Products Required:

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

### DBMS Products Required:

The following release of SYBASE Open Client CT-Library is required:

- SYBASE Open Client, Release 11.1.1
  - Adaptive Server Enterprise, Release 11.x or higher is recommended.

**Note:** SAS/ACCESS Interface to SYBASE software no longer supports access to Microsoft SQL Server data. SAS/ACCESS Interface to SYBASE software uses the CTLIB API calls to access the SYBASE DBMS product. These CTLIB API calls are not supported by Microsoft SQL Server; therefore, you will have to use SAS/ACCESS Interface to ODBC software with an appropriate ODBC driver to obtain access to Microsoft SQL Server data.

**Note:** Sybase ASIQ, Release 12.x is not supported; SAS/ACCESS Interface to ODBC software must be used instead.

## **SAS Activity-Based Management Software**

### **Products Required for Activity-Based Management ETL Server:**

- Base SAS software
- SAS/ACCESS engine of choice
- SAS Activity-Based Management ETL Server, which contains necessary elements of the following:
  - SAS/CONNECT software
  - SAS Integration Technologies software

### **Disk Space Required for Activity-Based Management ETL Server:**

The disk space required for the Activity-Based Management ETL Server is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

**Note:** If you have Release 8.2 of the SAS System already installed, then the amount of disk space required to install the Activity-Based Management ETL Server should be decreased by the disk space of any of the above products that have been previously installed.

### **Products Required for Activity-Based Management ETL Administrator:**

- Base SAS software
- SAS Activity-Based Management ETL Administrator, which contains necessary elements of the following:
  - SAS/CONNECT software
  - SAS/Warehouse Administrator software

### **Disk Space Required for Activity-Based Management ETL Administrator:**

The disk space required for the Activity-Based Management ETL Administrator is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

**Note:** If you have Release 8.2 of the SAS System already installed, then the amount of disk space required to install the Activity-Based Management ETL Administrator should be decreased by the disk space of any of the above products that have been previously installed.

## **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:**

- For printing graphics-based objects, a color or gray scale printer is required.
- Certain non-graphic objects may require SAS/GRAPH software to print depending on the object.

**Video Player Object in SAS/AF Software****Hardware:**

- Audio is not supported.

**Base SAS Software****External Tape Devices Supported:**

The TAPE device type is supported for the following tape devices:

- 4mm cartridge tapes
- 8mm cartridge tapes

**Video Player in Base SAS Software**

A Video Player utility is included with Base SAS software. This allows users to play video clips on their workstations. The Video Player Object (Class) is actually part of SAS/AF software.

**Hardware:**

- Audio is not supported.

**SAS/CONNECT Software****TCP/IP Access Method:**

- Any TCP/IP package that comes with the operating system

## **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:**

- 64 MB required
- 96 MB recommended

### **Printers:**

- For printing graphics-based objects, a color or gray scale printer is required.

## **Enterprise Miner Solution (Release 4.1)**

### **Products Required for Enterprise Miner Server:**

- Base SAS software
- Enterprise Miner Server software
- SAS/STAT software
- Enterprise Miner Server Solution, which contains necessary elements of the following:
  - SAS/CONNECT software
  - SAS/ETS software
  - SAS/GRAPH software

**Note:** Enterprise Miner Server media contains the experimental product Enterprise Miner for Text Mining. Enterprise Miner for Text Mining provides a set of tools to examine documents and text for patterns, to perform semantic analysis, and to mine text for information. Enterprise Miner for Text Mining constitutes pre-production code and may be changed substantially before the first production release. Please see your SAS Support Consultant for more information on Enterprise Miner for Text Mining.

### **Memory Required for Enterprise Miner Server:**

- 512 MB required

## **Disk Space Required for Enterprise Miner Server:**

The disk space required for the Enterprise Miner Server Solution is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

**Note:** If you have Release 8.2 of the SAS System already installed, then the amount of disk space required to install the Enterprise Miner Server Solution should be decreased by the disk space of any of the above products that have been previously installed.

## **SAS Genetic Marker Server**

### **Products Required:**

- Base SAS software
- SAS Research Data Management Administrator
- SAS Research Data Management Server

### **Products Included in SAS Genetic Marker Server:**

- SAS Genetic Marker Server, which contains:
  - SAS/Genetics software
  - SAS/IML software
  - SAS/OR software
  - SAS/QC software

For Java Runtime Environment (JRE) requirements please refer to the *Installation Instructions for SAS Genetic Marker 1.0 for AIX 32-bit, HP-UX 32-bit, Solaris 32-bit, and Linux Systems*.

## **Disk Space Required for SAS Genetic Marker Server:**

The disk space required for the SAS Genetic Marker Server is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

**Note:** *If you have Release 8.2 of the SAS System already installed, then the amount of disk space required to install the SAS Genetic Marker Server should be decreased by the disk space of any of the above products that have been previously installed.*

## **SAS/Genetics Software**

### **Products Required:**

- Base SAS software
- SAS/Genetics software
- SAS/GRAPH software

## **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.

## SAS Information Delivery Portal (Release 1.1)

### Products Required for SAS Information Delivery Portal Server:

- Base SAS software
- SAS Information Delivery Portal Server Components, which contains necessary elements of the following:
  - SAS Integration Technologies Software

### Disk Space Required for SAS Information Delivery Portal Server:

The disk space required for the SAS Information Delivery Portal Server Components is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

**Note:** If you have Release 8.2 of the SAS System already installed, then the amount of disk space required to install the SAS Information Delivery Portal Server Components should be decreased by the disk space of any of the above products that have been previously installed.

## 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 the SAS System media. Other SAS/IntrNet software components may be installed from the SAS/IntrNet software media. See the **Space Requirements** section for the disk space requirements for these components.

## 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.

## **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 client system.

### **Tunnel Feature**

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

### **MetaSpace Explorer Applet**

Requires Base SAS software, SAS/CONNECT software, and SAS/IntrNet Server software.

## **SAS IT Resource Management Server Software (Release 2.6)**

### **Products Required for SAS IT Resource Management Server:**

- Base SAS software
- SAS IT Resource Management Server Solution, which contains:
  - SAS IT Resource Management Server software and necessary elements of the following:
  - SAS/ACCESS to DB2 software
  - SAS/ACCESS to ODBC software
  - SAS/ACCESS to Oracle software
  - SAS/AF software
  - SAS/CONNECT software
  - SAS/EIS software
  - SAS/ETS software
  - SAS/FSP software
  - SAS/GRAPH software
  - SAS/INSIGHT software
  - SAS Integration Technologies software
  - SAS/MDDB Server software
  - SAS/STAT software

### **Disk Space Required for SAS IT Resource Management Server:**

The disk space required for the SAS IT Resource Management Server Solution is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

**Note:** If you have Release 8.2 of the SAS System already installed, then the amount of disk space required to install the SAS IT Resource Management Server Solution should be decreased by the disk space of any of the above products that have been previously installed.

#### **Other Requirements for SAS IT Resource Management Server:**

- SAS IT Resource Management requires a screen resolution of at least 800x600. If your display is set to a lower screen resolution, some windows may be truncated to fit the screen. If you experience font display problems, you may want to use the default SAS font. To set the default font type, issue the SAS command `dlgfont` at the command prompt. In the `Font` window, select the font `Sasfont`, a style of `regular`, and font size 10.
- SAS IT Resource Management requires an Xwindows device that supports 256 or more colors.
- Adobe Acrobat Reader 3.x is required for some online documents supplied in printable form.

#### **SAS IT Security Management Server Software (Release 2.6, Pre-Production)**

SAS IT Security Management is a new product that combines new functionality with SAS IT Resource Management. While SAS is confident in the quality of SAS IT Resource Management, we are delivering the new functionality as pre-production. Therefore, for system requirements specific to installing and running SAS IT Security Management, please use the system requirements for SAS IT Resource Management above, replacing SAS IT Resource Management Server Software with IT Security Management Server Software when calculating file sizes. If you are installing both IT Resource Management and IT Security Management, you should only count the file sizes once.

#### **SAS IT Service Level Management Server Software (Release 2.6)**

##### **Products Required for SAS IT Service Level Management Server:**

- Base SAS software
- SAS IT Resource Management Server 2.6
- SAS IT Service Level Management, which contains
  - SAS IT Service Level Management software
  - SAS/IntrNet to DB2 software

##### **Disk Space Required for SAS IT Service Level Management Server:**

The disk space required for the SAS IT Service Level Management Server is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

**Note:** If you have Release 8.2 of the SAS System already installed, then the amount of disk space required to install SAS IT Service Level Management Server should be decreased by the disk space of any of the above products that have been previously installed.

## SAS/LAB Software

### Products Required:

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

## SAS/MDDB Server Software

### Memory:

The memory requirements for SAS/MDDB Server software are dependent upon the complexity of the hierarchies generated.

- 48 MB required
- 64 MB recommended

Large applications will see performance improvements with more available memory.

## SAS Microarray Server

### Products Required:

- Base SAS software
- SAS Research Data Management Administrator
- SAS Research Data Management Server

### Products Included in SAS Microarray Server:

- SAS Microarray Server, which contains:
  - SAS/IML software
  - SAS/OR software
  - SAS/QC software

For Java Runtime Environment (JRE) requirements please refer to the *Installation Instructions for SAS Microarray 1.3 for AIX 32-bit, HP-UX 32-bit, Solaris 32-bit, and Linux Systems*.

### Disk Space Required for SAS Microarray Server:

The disk space required for the SAS Microarray Server is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

**Note:** *If you have Release 8.2 of the SAS System already installed, then the amount of disk space required to install the SAS Microarray Server should be decreased by the disk space of any of the above products that have been previously installed.*

## **SAS OLAP Server Package**

### **Products Required:**

- Base SAS software
- SAS OLAP Server Package, which contains necessary elements of the following:
  - SAS/MDDDB Server software
  - SAS/AF software
  - SAS/GRAPH software

### **Disk Space Required:**

The disk space required for the SAS OLAP Server Package is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

*Note:* If you have Release 8.2 of the SAS System already installed, then the amount of disk space required to install the SAS OLAP Server Package should be decreased by the disk space of any of the above products that have been previously installed.

## **SAS OpRisk VaR Server**

### **Products Required:**

- Base SAS software
- Standard SAS/ACCESS engine of choice (Oracle or DB2)
- SAS OpRisk VaR Server Package, which contains necessary elements of the following:
  - SAS/ACCESS to PC Files
  - SAS/ETS
  - SAS/GRAPH
  - SAS Integration Technologies
  - SAS/OR
  - SAS/STAT

### **Disk Space Required:**

The disk space required for the SAS OpRisk VaR Server Package is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

## **SAS Proteomics Server**

### **Products Required:**

- Base SAS software
- SAS Research Data Management Administrator
- SAS Research Data Management Server

### **Products Included in SAS Proteomics Server:**

- SAS Proteomics Server, which contains:
  - SAS/IML software
  - SAS/OR software
  - SAS/QC software



For Java Runtime Environment (JRE) requirements please refer to the *Installation Instructions for SAS Proteomics 1.0 for AIX 32-bit, HP-UX 32-bit, Solaris 32-bit, and Linux Systems*.

#### **Disk Space Required for SAS Proteomics Server:**

The disk space required for the SAS Proteomics Server is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

**Note:** *If you have Release 8.2 of the SAS System already installed, then the amount of disk space required to install the SAS Proteomics Server should be decreased by the disk space of any of the above products that have been previously installed.*

### **SAS Research Data Management**

#### **Products Included in SAS Research Data Management Server:**

- Base SAS software
- SAS Research Data Management Server, which contains:
  - SAS Research Data Management
  - SAS/ACCESS Interface to PC File Formats software
  - SAS/CONNECT software
  - SAS/GRAPH software
  - SAS Integration Technologies software
  - SAS/SHARE software
  - SAS/STAT software

For Java Runtime Environment (JRE) requirements please refer to the *Installation Instructions for SAS Research Data Management 1.3 for AIX 32-bit, HP-UX 32-bit, Solaris 32-bit, and Linux Systems*.

#### **Disk Space Required for SAS Research Data Management Server:**

The disk space required for the SAS Research Data Management-Server is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

**Note:** If you have Release 8.2 of the SAS System already installed, then the amount of disk space required to install the SAS Research Data Management Server should be decreased by the disk space of any of the above products that have been previously installed.

#### **Products Included in SAS Research Data Management Administrator:**

- SAS Research Data Management Administrator, which contains:
  - SAS/CONNECT software
  - SAS/Warehouse Administrator software

For Java Runtime Environment (JRE) requirements please refer to the *Installation Instructions for SAS Research Data Management 1.3 for AIX 32-bit, HP-UX 32-bit, Solaris 32-bit, and Linux Systems*.

#### **Disk Space Required for SAS Research Data Management Administrator:**

The disk space required for the SAS Research Data Management Administrator is the combined total space requirements for the SAS software products listed above. See the **Space Requirements** table for more information.

**Note:** *If you have Release 8.2 of the SAS System already installed, then the amount of disk space required to install the SAS Research Data Management Administrator should be decreased by the disk space of any of the above products that have been previously installed.*

## **SAS/SHARE Software**

### **TCP/IP Access Method:**

- Any TCP/IP package that comes with the operating system

## **SAS/TOOLKIT Software**

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

## **SAS/Warehouse Administrator Software**

### ***Products Required for Build Mode:***

- Base SAS software
- SAS/AF software (required only for API usage)

### ***Products Required for Run Mode:***

- Base SAS software
- Other products depending on application (e.g., SAS/ACCESS software for access to DBMS tables, SAS/CONNECT software for access to remote data, or SAS/AF software to access warehouse via method calls)

### ***Printers:***

- For printing graphics-based objects, a color or gray scale printer is required.
- Certain non-graphic objects may require SAS/GRAPH software to print depending on the object.

# Graphics Hardware and Software Compatibility

## Printers

SAS/GRAPH software provides device drivers for all Hewlett-Packard printers (and compatibles), and printers that support PostScript, HP-GL, HP PCL, and other printer languages. Here is a partial list of printers that SAS/GRAPH software supports:

CalComp ColorMaster, ColorMaster Plus, PlotMaster  
Canon Bubble Jet, Laser Shot  
Digital printers that 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

SAS/GRAPH device drivers may also be available for additional printers not listed above and that do not support PostScript, HP-GL, or HP PCL. For additional information on these drivers, contact SAS Institute Technical Support.

## Terminals and Displays

SAS/GRAPH software supports graphics display on graphics terminals from DEC, Tektronix, HP, and on X Windows terminals. SAS/GRAPH software also supports graphics emulators that emulate any of the above terminals. Note the use of the SAS/GRAPH graphics editor requires an X Windows display or X Windows emulation software.

## Plotters

SAS/GRAPH software provides device drivers for all HP plotters supporting HP-GL or HP-GL/2, and plotters from other manufacturers that support the HP-GL or HP-GL/2 language. SAS/GRAPH software also supports Houston Instruments plotters using the DMPL language and ZETA plotters that support the GML language.

## Film Recorders

SAS/GRAPH software provides device drivers that support the following film recorders:

Genigraphics Masterpiece Camera System with SCODL interface  
Lasergraphics MPS 2000 film recorder with a Lasergraphics UI-100 or RASCOL rasterizer  
Matrix QCR and PCR cameras with Matrix QVP, MVP, or Lasergraphics rasterizers  
Polaroid Palette CI-3000 and CI-5000  
Presentation Technologies Montage film recorder

Support may be available for other film recorders not listed here. For details, contact SAS Institute Technical Support.

## Interfaces to Other Graphics Software

Included with SAS/GRAPH software is a series of drivers that can produce Computer Graphics Metafiles (CGM) in binary, character, and clear-text formats. These drivers can be used to transfer SAS/GRAPH output to other products that support CGM input, such as Word for Windows, WordPerfect for Windows, Harvard Graphics, and Lotus Freelance, or to devices that can process CGM input.

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

Many other graphics and word processing applications can process files in Hewlett-Packard (HP-GL) format. The HPGL driver can be used to produce files that can be transferred to most applications that can process HP-GL files. In addition, there are drivers for PDF, PBM, PPM, GIF, JPEG, EMF, WMF, PNG, TIFF, EPSI, and PaintBrush image formats. To view a complete list of all SAS/GRAPH device drivers, submit the following SAS program:

```
proc gdevice c=sashelp.devices nofs;
  list _all_;
run; quit;
```

SAS/GRAPH software can also export graphics in the following formats:

- BMP - Microsoft Windows Bitmap
- EPS - Encapsulated PostScript
- GIF - Graphics Interchange Format
- PNG - Portable Network Graphics
- PPM - Portable Pixmap
- PS - PostScript Bitmap
- TIF - Tagged Image File Format
- XPM - X11 Pixmap
- JPG - JPEG Files
- XBM - X11 Bitmap

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

- BMP - Microsoft Windows Bitmap
- EPS - Encapsulated PostScript
- GIF - Graphics Interchange Format
- PBM - Portable Bitmap
- PCD - Kodak Photo-CD
- PCX - PC PaintBrush
- PGM - Portable Graymap
- PNG - Portable Network Graphics
- PNM - Portable Anymap
- PPM - Portable Pixmap
- TGA - Targa format
- TIF - Tagged Image File Format
- XBM - X11 Bitmap
- XPM - X11 Pixmap
- XWD - X Window Dump
- JPG - JPEG Files

## 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 the SAS System.

The HTML pages created with the ActiveX device driver can only be viewed on Windows operating systems with Internet Explorer, Version 5.

The HTML pages created with the Java device driver can only be viewed *with* the following Java-enabled Web browsers *on* the following operating systems:

<b>Java-enabled Web Browser</b>	<b>Operating System</b>
Netscape Navigator, Version 4.08 or higher	AIX, HP-UX, Solaris, ABI for Intel Architecture, IRIX, Compaq Tru64 UNIX
Netscape Communicator, Version 4.04 for Warp 4	OS/2
Internet Explorer, Version 5 (with Java VM 5.0.0.3167 or higher) or Netscape Navigator, Version 4.07	Windows, Windows NT, Windows NT Server

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