System Requirements for SAS® 9.4 Foundation for Microsoft Windows
Table of Contents

Using the System Requirements ................................................................. 1
  SAS Technical Support ............................................................................. 1
Software Requirements .................................................................................. 2
  Preparing for Installation ........................................................................ 2
    File System Requirements .................................................................. 2
    Administrator Privilege ..................................................................... 2
    Anti-virus and/or Firewall Software .................................................. 2
  Windows Environments .......................................................................... 2
    Server Operating Systems .................................................................. 2
      Microsoft Windows Server 2008 Family ......................................... 2
      Microsoft Windows Server 2012 Family ......................................... 3
    SAS Support for Windows 7, Windows 8, and Windows 8.1 .................... 3
Supported Operating Environments for Windows ......................................... 3
Web Browser ............................................................................................ 4
Java Requirements ..................................................................................... 5
Suggested Basic Hardware Configuration ..................................................... 6
  Machines Supported .............................................................................. 6
  Distribution Media ................................................................................ 6
System Configuration .................................................................................. 6
  Desktop Systems .................................................................................. 6
  Server Systems .................................................................................... 6
Monitors Supported .................................................................................... 6
Additional Features .................................................................................... 7
  The User Installation Experience in SAS 9.4 ....................................... 7
    Internet Access ................................................................................ 7
    HTMLHelp Viewer ............................................................................ 7
    SAS Universal Viewer ....................................................................... 7
    Dynamic Data Exchange .................................................................. 7
    Electronic Mail ................................................................................ 7
    Lotus Notes ....................................................................................... 8
    SAS Service Configuration Utility ..................................................... 8
    SAS Deployment Wizard and Subset Orders ....................................... 8
Space Requirements .................................................................................... 9
  Disk Space Consumed by Installed Products ....................................... 9
DBCS Support ........................................................................................... 10
National Language Support (NLS) ............................................................ 10
  Asian Language Support ................................................................... 11
Specific Product Requirements ................................................................. 12
  Base SAS Software ............................................................................. 12
  SAS Analytics Accelerator for Teradata ............................................. 12
  SAS High-Performance Forecasting 12.1 .......................................... 12
  SAS Scoring Accelerator for Aster ....................................................... 12
<table>
<thead>
<tr>
<th>Feature</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS Scoring Accelerator for DB2</td>
<td>13</td>
</tr>
<tr>
<td>SAS Scoring Accelerator for Greenplum</td>
<td>13</td>
</tr>
<tr>
<td>SAS Scoring Accelerator for Netezza</td>
<td>13</td>
</tr>
<tr>
<td>SAS Scoring Accelerator for Oracle</td>
<td>14</td>
</tr>
<tr>
<td>SAS Scoring Accelerator for Teradata</td>
<td>14</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Aster</td>
<td>15</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to DB2</td>
<td>15</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Greenplum</td>
<td>15</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Hadoop</td>
<td>15</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to MySQL</td>
<td>16</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Netezza</td>
<td>16</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to ODBC</td>
<td>16</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to OLE DB</td>
<td>17</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Oracle</td>
<td>17</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to PC Files</td>
<td>17</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to PostgreSQL</td>
<td>18</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to SAP HANA</td>
<td>18</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Sybase</td>
<td>18</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Sybase IQ</td>
<td>19</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Teradata</td>
<td>19</td>
</tr>
<tr>
<td>SAS/AF</td>
<td>19</td>
</tr>
<tr>
<td>SAS/CONNECT</td>
<td>19</td>
</tr>
<tr>
<td>SAS/EIS</td>
<td>20</td>
</tr>
<tr>
<td>SAS/Genetics 12.1</td>
<td>20</td>
</tr>
<tr>
<td>SAS/GIS</td>
<td>20</td>
</tr>
<tr>
<td>SAS/GRAPH</td>
<td>21</td>
</tr>
<tr>
<td>CGI Tools and Applications</td>
<td>21</td>
</tr>
<tr>
<td>Application Dispatcher</td>
<td>21</td>
</tr>
<tr>
<td>htmSQL</td>
<td>21</td>
</tr>
<tr>
<td>MDDB Report Viewer Application</td>
<td>21</td>
</tr>
<tr>
<td>Xplore Sample Web Application</td>
<td>21</td>
</tr>
<tr>
<td>Design-Time Controls</td>
<td>21</td>
</tr>
<tr>
<td>Java Tools and Applications</td>
<td>21</td>
</tr>
<tr>
<td>SAS/CONNECT Driver for Java</td>
<td>21</td>
</tr>
<tr>
<td>Tunnel Feature</td>
<td>22</td>
</tr>
<tr>
<td>SAS/OR 12.1</td>
<td>22</td>
</tr>
<tr>
<td>SAS/TOOLKIT</td>
<td>22</td>
</tr>
<tr>
<td>SAS/Warehouse Administrator</td>
<td>22</td>
</tr>
</tbody>
</table>
Using the System Requirements

This document provides requirements for installing and running SAS 9.4 Foundation on Microsoft Windows. You must update your system to meet the minimum requirements before running SAS 9.4 Foundation.

These are the major requirements listed in the document:

- Software Requirements
- Hardware Requirements
- Additional Features
- Space Requirements
- Specific Product Requirements

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.

SAS Technical Support

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

Preparing for Installation

File System Requirements
The 8.3 filename convention must remain enabled. The use of file systems supporting long filenames is recommended.

Administrator Privilege
An installer must have administrator privilege to install various updates. This requirement ensures that SAS 9.4 Foundation can be completely and safely installed.

Anti-virus and/or Firewall Software
Before you start, 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.

Windows Environments

Note: Software distributed with the SAS release designation SAS 9.4 TS1M0 does not support Windows 32-bit environments, but Windows 32-bit support is provided in SAS release SAS 9.4 TS1M1 and higher.

Server Operating Systems

Microsoft Windows Server 2008 Family
SAS 9.4 Foundation is supported on the following 32-bit and x64 editions of the Windows Server 2008 family with SAS 9.4 TS1M1 and higher:

- Microsoft Windows Server 2008 SP2 Enterprise Edition
- Microsoft Windows Server 2008 SP2 Standard Edition
- Microsoft Windows Server 2008 SP2 Datacenter Edition

SAS 9.4 Foundation is supported on the following editions of the Windows Server 2008 R2 family with SAS 9.4 TS1M1 and higher:

- Microsoft Windows Server 2008 R2 SP1 Enterprise Edition
- Microsoft Windows Server 2008 R2 SP1 Standard Edition
- Microsoft Windows Server 2008 R2 SP1 Datacenter Edition
**Microsoft Windows Server 2012 Family**

SAS 9.4 Foundation is supported on the following editions of the Windows Server 2012 family with SAS 9.4 TS1M1 and higher:

- Microsoft Windows Server 2012 Foundation Edition
- Microsoft Windows Server 2012 Essentials Edition
- Microsoft Windows Server 2012 Standard Edition
- Microsoft Windows Server 2012 Datacenter Edition

SAS 9.4 Foundation is supported on the following editions of the Windows Server 2012 R2 family with SAS 9.4 TS1M1 and higher:

- Microsoft Windows Server 2012 R2 Foundation Edition
- Microsoft Windows Server 2012 R2 Essentials Edition
- Microsoft Windows Server 2012 R2 Standard Edition
- Microsoft Windows Server 2012 R2 Datacenter Edition

**SAS Support for Windows 7, Windows 8, and Windows 8.1**

**Windows 7 SP1 Professional, Ultimate, and Enterprise:** Supported in SAS 9.4 Foundation products.

**Windows 8 Pro and Enterprise, Windows 8.1 Pro and Enterprise:** Supported in SAS 9.4 Foundation products.

**Windows 7 Home Premium, Windows 8 and Windows 8.1:** Supported for the Education Analytical Suite (EAS). These are the Education Analytical Suite products that are supported on Windows 7, Windows 8, and Windows 8.1:

**Note:** These products are not supported individually on Windows 7 Home Premium, Windows 8, and Windows 8.1.

- Base SAS
- SAS/ACCESS Interface to Greenplum
- SAS/ACCESS Interface to Informix
- SAS/ACCESS Interface MySQL
- SAS/ACCESS Interface to MS SQL Server
- SAS/ACCESS Interface to ODBC
- SAS/ACCESS Interface to PC Files
- SAS/ACCESS Interface to Sybase
- SAS/AF
- SAS/ASSIST
- SAS/CONNECT
- SAS/EIS
- SAS/ETS
- SAS/FSP
- SAS/GRAPH
- SAS/IML
- SAS/OR
- SAS/QC
- SAS/SECURE
- SAS/SHARE
- SAS/STAT

**Supported Operating Environments for Windows**

For more information about the Microsoft Windows operating systems that are supported in SAS 9.4, please refer to SAS Knowledge Base / System Requirements, [http://support.sas.com/resources/sysreq/hosts/pc/](http://support.sas.com/resources/sysreq/hosts/pc/).
**Web Browser**

SAS 9.4 Foundation uses Remote Browsing to display web-based information. Instead of running a browser on the workstation, SAS 9.4 Foundation sends the URL to your desktop computer for display in a web browser. This removes the browser overhead from the server. This also allows display of output that requires browser plug-ins that do not run on a 64-bit computer. A small software agent named the Remote Browser Server is installed on your desktop computer to enable SAS to communicate with your browser.

SAS creates a URL that references the information to be displayed (ODS output), then sends the URL to the SAS Remote Browser Server on your desktop computer (step 1). The Remote Browser Server then sends a request to the browser to display a page (step 2). The browser then reconnects to SAS to retrieve the information to be displayed and displays it in the browser (step 3).

To use remote browsing, your desktop computer must be one of the following platforms, and have installed one of the supported browsers.

<table>
<thead>
<tr>
<th>Platform</th>
<th>Supported Browser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 7 (32-bit &amp; 64-bit)</td>
<td>Firefox 6 (32-bit)</td>
</tr>
<tr>
<td></td>
<td>Internet Explorer 9 (32-bit) or Internet Explorer 10 (32-bit)</td>
</tr>
<tr>
<td>Windows 8 (32-bit &amp; 64-bit)</td>
<td>Firefox 6 (32-bit)</td>
</tr>
<tr>
<td></td>
<td>Internet Explorer 10 (32-bit)</td>
</tr>
<tr>
<td>Linux 64-bit</td>
<td>Firefox 6</td>
</tr>
</tbody>
</table>
The Remote Browser Server must be installed and running for SAS to display web information. The installer for the Remote Browser Server can be found on support.sas.com (http://support.sas.com/documentation/configuration/thirdpartysupport/v94/thirdparty94.html), or directly downloaded from a SAS session.

For SAS to be able to use your web browser, the browser must be configured to allow pop-up windows.

**Java Requirements**

For information about Java Runtime Environment (JRE) requirements, please refer to the SAS 9.4 Support for Java Runtime Environments web page, located at http://support.sas.com/resources/thirdpartysupport/v94/jres.html.
Suggested Basic Hardware Configuration

The following recommendations are for new customers who install SAS 9.4 Foundation for Microsoft Windows. (The hardware requirements for current SAS 9 customers remain unchanged.)

**Machines Supported**

SAS 9.4 supports x64 processor family systems, also known as Intel64 or AMD64 systems.

**Distribution Media**

The following distributions methods are supported:

- Electronic Software Delivery
- DVD

**System Configuration**

The following are recommended minimums* for a deployment of SAS 9.4 for on Windows systems:

**Desktop Systems**

Examples are Windows 7 and Windows 8.

- a minimum of 2 cores
- 2 GB RAM (available to SAS)
- Swap space: 1.5 times physical RAM or 250 GB, whichever is less

**Server Systems**


- a minimum of 4 cores
- 16 GB RAM (available to SAS)
- I/O Throughput of 400MB/sec
- Swap space: 1.5 times physical RAM or 250 GB, whichever is less

*Note: We strongly suggest that you work with your SAS Account Team to have an official hardware recommendation done based on your proposed SAS workload.

**Monitors Supported**

SVGA (resolution of 800x600 or higher)
Additional Features

The User Installation Experience in SAS 9.4

If you are upgrading to SAS 9.4 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.

HTMLHelp Viewer

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 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. Internet Explorer is provided with Windows Server.

SAS Universal Viewer

SAS Universal Viewer is an application for the Windows operating environment that enables you to view SAS data sets and other types of files without invoking SAS and without installing SAS on your computer. SAS Universal Viewer is a replacement for the SAS System Viewer, and it is available with Base SAS and as a free download from SAS. You can view, sort, and filter data sets, but you are not able to edit them.

With SAS Universal Viewer, you can view the following types of files:

- SAS data sets, including those that were created on platforms other than Windows
- SAS v5 transport files
- SAS programs, logs, and listings
- General text files
- HTML and other file types that open in Internet Explorer

Dynamic Data Exchange

Dynamic Data Exchange (DDE) allows for the exchange of data between SAS 9.4 Foundation and any other application supporting DDE. SAS 9.4 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 9.4 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 or Microsoft Outlook Express. 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 9.4 Foundation. The NotesSQL ODBC driver allows Lotus Notes documents to be accessed from within SAS 9.4. An installed license of Lotus Notes Desktop is required. SAS 9.4 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 9.4 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 9.4 Foundation on Microsoft Windows*.

**SAS Deployment Wizard and Subset Orders**

The SAS Deployment Wizard allows users to subset orders within a depot when it is being moved or copied. The previous process of creating a Client Software Depot or a Personal Software Depot that was available in the SAS Administrator Wizard in earlier releases of SAS has been replaced. If you are used to employing either of these functionalities, please refer to the *SAS Deployment Wizard and SAS Deployment Manager 9.4: User’s Guide* for information about how to select the specific products you want to copy into a separate depot. This type of newly created depot can serve the same function as those depots did in previous releases. The *User’s Guide* can be found here: [http://support.sas.com/documentation/installcenter/en/ikdeploywizug/66034/PDF/default/user.pdf](http://support.sas.com/documentation/installcenter/en/ikdeploywizug/66034/PDF/default/user.pdf)
**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 9.4 Foundation for Windows. Use this information to help you determine how much free disk space you must have available before you can install SAS 9.4 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.

**Disk Space Consumed by Installed Products**

<table>
<thead>
<tr>
<th>Software Product</th>
<th>Disk Space (in MB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base SAS</td>
<td>1124</td>
</tr>
<tr>
<td>ODS Templates</td>
<td>44</td>
</tr>
<tr>
<td>Report Fonts for Clients</td>
<td>172</td>
</tr>
<tr>
<td>SAS Data Quality Server</td>
<td>39</td>
</tr>
<tr>
<td>SAS High-Performance Forecasting 12.3</td>
<td>6</td>
</tr>
<tr>
<td>SAS Installation Qualification Tool</td>
<td>5</td>
</tr>
<tr>
<td>SAS Integration Technologies</td>
<td>20</td>
</tr>
<tr>
<td>SAS OLAP Server</td>
<td>9</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Aster</td>
<td>1</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to DB2</td>
<td>1</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Greenplum</td>
<td>8</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Hadoop</td>
<td>1</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to MySQL</td>
<td>1</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Netezza</td>
<td>1</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to ODBC</td>
<td>1</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to OLE DB</td>
<td>1</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Oracle</td>
<td>2</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to PC Files</td>
<td>13</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to PostgreSQL</td>
<td>1</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Sybase</td>
<td>2</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Sybase IQ</td>
<td>1</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Teradata</td>
<td>2</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Vertica</td>
<td>1</td>
</tr>
<tr>
<td>SAS/AF</td>
<td>6</td>
</tr>
<tr>
<td>SAS/ASSIST</td>
<td>52</td>
</tr>
<tr>
<td>SAS/CONNECT</td>
<td>7</td>
</tr>
<tr>
<td>SAS/EIS</td>
<td>82</td>
</tr>
<tr>
<td>SAS/ETS</td>
<td>127</td>
</tr>
</tbody>
</table>
**System Requirements for SAS 9.4 Foundation for Microsoft Windows**

<table>
<thead>
<tr>
<th>Software Product</th>
<th>Disk Space (in MB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS/FSP</td>
<td>3</td>
</tr>
<tr>
<td>SAS/Genetics 12.3</td>
<td>16</td>
</tr>
<tr>
<td>SAS/GIS</td>
<td>62</td>
</tr>
<tr>
<td>SAS/GRAPH*</td>
<td>2047</td>
</tr>
<tr>
<td>SAS/IML 12.3</td>
<td>38</td>
</tr>
<tr>
<td>SAS/IntrNet</td>
<td>5</td>
</tr>
<tr>
<td>SAS/OR 12.3</td>
<td>86</td>
</tr>
<tr>
<td>SAS/QC 12.3</td>
<td>83</td>
</tr>
<tr>
<td>SAS/STAT 12.3</td>
<td>210</td>
</tr>
<tr>
<td>SAS/TOOLKIT</td>
<td>4</td>
</tr>
<tr>
<td>SAS/Warehouse Administrator</td>
<td>57</td>
</tr>
</tbody>
</table>

* SAS/GRAPH also includes map data sets from GfKGeoMarketing. SAS/GRAPH now requires 1.3 GB of disk space in addition to the total listed above.

**DBCS Support**

The following list contains space requirements in MB for SAS 9.4 components that offer DBCS support.

<table>
<thead>
<tr>
<th>Software Product- DBCS Support</th>
<th>Disk Space (in MB)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core of SAS 9.4 DBCS Support Files</td>
<td>34.0</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to DB2 DBCS Support Files</td>
<td>0.9</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Oracle DBCS Support Files</td>
<td>0.3</td>
</tr>
<tr>
<td>SAS/AF DBCS Support Files</td>
<td>0.5</td>
</tr>
<tr>
<td>SAS/CONNECT DBCS Support Files</td>
<td>1.1</td>
</tr>
<tr>
<td>SAS/EIS DBCS Support Files</td>
<td>0.4</td>
</tr>
<tr>
<td>SAS/Lab</td>
<td>1.9</td>
</tr>
<tr>
<td>SAS/SHARE DBCS Support Files</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>39.20</strong></td>
</tr>
</tbody>
</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 9.4 components that support Asian languages.

<table>
<thead>
<tr>
<th>Languages Supported</th>
<th>Disk Space (in MB)*</th>
<th>See Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese – traditional</td>
<td>3.0</td>
<td>below</td>
</tr>
<tr>
<td>Chinese – simplified</td>
<td>174.0</td>
<td>below</td>
</tr>
<tr>
<td>Japanese</td>
<td>262.0</td>
<td>Page 11</td>
</tr>
<tr>
<td>Korean</td>
<td>174.0</td>
<td>Page 11</td>
</tr>
</tbody>
</table>
Asian Language Support

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

<table>
<thead>
<tr>
<th>Traditional Chinese Support</th>
<th>Disk Space (in MB)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base SAS Traditional Chinese Support Files</td>
<td>3.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Simplified Chinese Support</th>
<th>Disk Space (in MB)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base SAS Simplified Chinese Support Files</td>
<td>47.8</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to DB2 Simplified Chinese Support Files</td>
<td>0.9</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Oracle Simplified Chinese Support Files</td>
<td>0.9</td>
</tr>
<tr>
<td>SAS/AF Simplified Chinese Support Files</td>
<td>2.0</td>
</tr>
<tr>
<td>SAS/CONNECT Simplified Chinese Support Files</td>
<td>0.9</td>
</tr>
<tr>
<td>SAS/EIS Simplified Chinese Support Files</td>
<td>1.9</td>
</tr>
<tr>
<td>SAS/GIS Simplified Chinese Support Files</td>
<td>1.8</td>
</tr>
<tr>
<td>SAS/IntrNet Simplified Chinese Support Files</td>
<td>1.8</td>
</tr>
<tr>
<td>SAS/SHARE Simplified Chinese Support Files</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>58.8</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Japanese Support</th>
<th>Disk Space (in MB)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base SAS Japanese Support Files</td>
<td>78.1</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to DB2 Japanese Support Files</td>
<td>0.9</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to Oracle Japanese Support Files</td>
<td>0.9</td>
</tr>
<tr>
<td>SAS/AF Japanese Support Files</td>
<td>2.0</td>
</tr>
<tr>
<td>SAS/CONNECT Japanese Support Files</td>
<td>0.9</td>
</tr>
<tr>
<td>SAS/EIS Japanese Support Files</td>
<td>10.1</td>
</tr>
<tr>
<td>SAS/GIS Japanese Support Files</td>
<td>1.8</td>
</tr>
<tr>
<td>SAS/IntrNet Japanese Support Files</td>
<td>1.8</td>
</tr>
<tr>
<td>SAS/SHARE Japanese Support Files</td>
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<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Korean Support</th>
<th>Disk Space (in MB)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base SAS Korean Support Files</td>
<td>47.8</td>
</tr>
<tr>
<td>SAS/ACCESS Interface to DB2 Korean Support Files</td>
<td>0.1</td>
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<td>SAS/ACCESS Interface to Oracle Korean Support Files</td>
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<td>SAS/AF Korean Support Files</td>
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<td>SAS/EIS Korean Support Files</td>
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<td>SAS/GIS Korean Support Files</td>
<td>1.8</td>
</tr>
<tr>
<td>SAS/IntrNet Korean Support Files</td>
<td>1.6</td>
</tr>
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<td>SAS/SHARE Korean Support Files</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>57</strong></td>
</tr>
</tbody>
</table>
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:
SPDE will run with the minimum system specified in the Hardware Requirements section on page 6, but these are the minimum recommended system guidelines to make use of SPDE function:
- 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

SAS Analytics Accelerator for Teradata

The SAS Analytics Accelerator for Teradata requires Base SAS, SAS/ACCESS Interface to Teradata, and at least one of the following products:
- SAS/ETS
- SAS/STAT
- SAS Enterprise Miner

In-Database DBMS Products Required

All SAS Analytics Accelerator 2.1 for Teradata in-database functions require Teradata 13.00.00.15 or higher.
SAS Analytics Accelerator for Teradata requires Teradata Tools and Utilities (TTU) 13 with patch 1.9 or later.

SAS High-Performance Forecasting 12.1

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

SAS Scoring Accelerator for Aster

The SAS Scoring Accelerator for Aster requires Base SAS, SAS Enterprise Miner, SAS/ACCESS Interface to Aster, and SAS/STAT.
SAS Scoring Accelerator for Aster supports Aster Database 4.6.3.

For SAS 9.4M1, DBMS Products Required:
- Aster server 4.6.3, Aster server 5.0.1, Aster server 5.1 or Aster server 6.0
- Client utilities for Aster 4.6.3, Aster 5.0.1 or Aster 5.1

Note: The minimum Linux operating system requirement for the Aster server 4.6.3 is Unbuntu 9.04.
For SAS 9.4M2, DBMS Products Required:

- Aster server 6.0
- Client utilities for Aster 5.1

**SAS Scoring Accelerator for DB2**

The SAS Scoring Accelerator for DB2 requires Base SAS, SAS/STAT, SAS/ACCESS Interface to DB2 and SAS Enterprise Miner.

**In-Database DBMS Products Required (Function-based Architecture)**

- IBM DB2 10.1 FixPack 1: AIX 7.1 or IBM DB2 9.5 FixPack 3: Linux for x64: RHEL 4
- Client utilities for IBM DB2 9.5

The DB2 server where the scores will be published requires a current version of the IBM XLC compiler. Please contact your IBM/DB2 representative to secure the appropriate compiler for your DB2 installation.

**In-Database DBMS Products Required (SAS Embedded Process-based Architecture)**

- IBM DB2 9.7 FixPack 5 or higher
- Client utilities for IBM DB2 9.7 or higher

The following are the operating system version requirements for the database:

**AIX:**

- AIX 5.3 + TL09
- AIX 6.1 + TL02 or higher
- AIX 7.1 GA + SP3

**Linux:**

- SLES 10 + SP2
- SLES 11

**SAS Scoring Accelerator for Greenplum**


The following are the minimum Greenplum database requirements:

- GPDB 4.2.2.0
- GPPC 1.1.0.0

The following are the minimum Linux operating system version requirements for the database:

- Red Hat Enterprise Linux 64-bit 5.5, 5.6, 5.7, 6.1, and 6.2
- SUSE Linux Enterprise Server 64-bit 10 SP4, and 11 SP1

**SAS Scoring Accelerator for Netezza**

The SAS Scoring Accelerator for Netezza requires Base SAS, SAS/STAT, and SAS/ACCESS Interface to Netezza. It also requires SAS Enterprise Miner.
**System Requirements for SAS 9.4 Foundation for Microsoft Windows**

**In-Database DBMS Products Required:**
- Netezza Performance Data Server 5.0
- Client utilities for Netezza 5.0

**SAS Scoring Accelerator for Oracle**

The SAS Scoring Accelerator for Oracle requires Base SAS, SAS/STAT, SAS/ACCESS Interface to Oracle, and SAS Enterprise Miner.

**In-Database DBMS Products Required (SAS Embedded Process-based architecture)**
- The minimum required Oracle Server version is 11gr2. The database encoding must be UTF8.
- The minimum required Oracle Client release is Oracle, Release 11gr2 (64-bit libraries).

The following are the minimum Linux operating system version requirements for the database:
- RHEL 5.5
- OEL 5.5

In addition, the server must have patches for the following Oracle bugs installed:
- Bug 11678127 - OCIDESCRIBEANY RETURNS ORA:24323 FOR AN OBJECT TYPE USE CASE
- Bug 12536287 - ODCITABLECLOSE NOT INVOKED FOR PARALLEL ENABLED TABLE FUNCTIONS
- Bug 13533487 - ODCITABLECLOSE NOT INVOKED WHEN CTRL-C IS INVOKED BY QC IN TABLE FUNCTIONS
- Bug 12974145 - UNSET LENGTH OFFSET FIELD IN PEFMARG CAUSES CRASH IN SPEFM_FIXUP_LIST
- Bug 11772740 - CALLING OCIRESET() TO ABORT A PIECEWISE CYCLE SEVERS THE ORACLE CON
- Bug 13089282 - INPUT CURSOR NULL IN ODCITABLEDESCRIBE

When this document was published, patches for the following Oracle bugs were not available:
- Bug 12658656 - DUPLICATE SYMBOLS in EXTPROC/AGENT
- Bug 12904682 - CORE DUMP IN MUTEX ACQUIRE WHEN DIAG INITIALIZATION FAILS
- Bug 12904657 - ADR INITIALIZATION FAILS IN SOME EXTPROC THREADS

Until patches can be applied for all three of these bugs, the following line **must** be added to $ORACLE_HOME/network/admin/sqlnet.ora. No restart is required.

```
DIAG_ADR_ENABLED=OFF
```

**SAS Scoring Accelerator for Teradata**

The SAS Scoring Accelerator for Teradata requires Base SAS, SAS/STAT, SAS/ACCESS Interface to Teradata, and SAS Enterprise Miner.

**In-Database DBMS Products Required (Function-based architecture)**
- Teradata 12.0 or higher
- Client utilities for Teradata (12 or higher)
In-Database DBMS Products Required (SAS Embedded Process-based architecture)

- Teradata 13.10.02.01 or higher
- Client utilities for Teradata (13 or higher)

**SAS/ACCESS Interface to Aster**

Base SAS is required for the installation of SAS/ACCESS Interface to Aster nCluster software.

SAS/ACCESS Interface to Aster nCluster requires version 4.5.1 or later of the Aster nCluster ODBC driver and a bulk loader client, `ncluster_loader.exe`. To obtain the ODBC driver and bulk loader client, contact Aster Data Technical Support.

Please refer to the *Configuration Guide for SAS® 9.4 Foundation for Microsoft Windows* for details about where to install the ODBC driver and bulk loader client and how to configure your SAS software in order to work with them.

**SAS/ACCESS Interface to DB2**

Base SAS is required for the installation of SAS/ACCESS Interface to DB2 software.

**Products Included:**

- SAS/ACCESS Interface to DB2 software
- SAS Accelerator Publishing Agent software

**DBMS Product Required:** DB2 Universal Database, Version 10.1 FixPak 1 or higher (64-bit libraries)

SAS/ACCESS Interface to DB2 can be installed on a DB2 server or on a DB2 client node with an installation of the IBM Data Server Client. In addition, DB2 Connect must be installed to connect to DB2 databases that reside on AS/400, VSE, VM, MVS, and z/OS systems.

**SAS/ACCESS Interface to Greenplum**

Base SAS is required for the installation of SAS/ACCESS Interface to Greenplum software.

SAS/ACCESS Interface to Greenplum requires the DataDirect Driver Manager and Driver for Greenplum. You must install these components before using SAS/ACCESS Interface to Greenplum. For instructions, please see “Configuring SAS/ACCESS Interface to Greenplum” in *Configuration Guide for SAS 9.4 Foundation for Microsoft Windows*.

**SAS/ACCESS Interface to Hadoop**

Base SAS is required for the installation of SAS/ACCESS Interface to Hadoop software.
The following Hadoop and Hive combinations are supported:

- Cloudera CDH 4.0.1 running Hive
- Cloudera CDH 4.1.2 running HiveServer2
- Cloudera CDH 5.0 running HiveServer2
- Hortonworks HDP 1.2 running HiveServer2
- Hortonworks HDP 2.0 running HiveServer2
- IBM InfoSphere BigInsights 2.1 running Hive
- MapR M5 2.0.1 running Hive
- Pivotal/Greenplum HD running Hive
- Pivotal/Greenplum MR 2.0.1 running Hive

If a provider assures upward compatibility, SAS/ACCESS supports newer combinations. For example, Cloudera assures upward compatibility within major releases, so Cloudera CDH 4.2 running Hive or HiveServer2 is supported.

Note: Most SAS/ACCESS platforms can be configured for Kerberos ticket cache-based login authentication using MIT Kerberos 5 with Cloudera CDH 4.1.2 or Hortonworks 1.2 running HiveServer2. However, SAS/ACCESS on the AIX platform requires Cloudera CDH 4.2 or Hortonworks 1.3 running HiveServer2.

**SAS/ACCESS Interface to MySQL**

Base SAS is required for the installation of SAS/ACCESS Interface to MySQL software.

**DBMS Products Required:**

- Any version of MySQL Client 5.1 or 5.5
- MySQL Server 5.0 or later

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

**SAS/ACCESS Interface to Netezza**

Base SAS is required for the installation of SAS/ACCESS Interface to Netezza software.

**Products Included:**

- SAS/ACCESS Interface to Netezza software
- SAS Accelerator Publishing Agent software

SAS/ACCESS Interface to Netezza requires an ODBC driver from IBM. To get the IBM Netezza ODBC driver, release 4.6.3 or above, please contact IBM technical support at (877) 426-6006 or visit the IBM Fix Central website, [http://www.ibm.com/support/fxcentral/](http://www.ibm.com/support/fxcentral/).

**SAS/ACCESS Interface to ODBC**

Base SAS is required for the installation of SAS/ACCESS Interface to ODBC software.

**DBMS Product Required:** An ODBC driver for the data source from which you want to access data

Before you can use SAS/ACCESS Interface to ODBC software, an 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.

Note that SAS 9.4 for Microsoft Windows for x64 requires the 32-bit version of the ODBC Driver for the data source.

Please see the Configuration Guide for SAS 9.4 Foundation on Microsoft Windows for the details of installation.

**SAS/ACCESS Interface to OLE DB**

Base SAS software is required for the installation of 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.

The 64-bit version of the OLE DB provider is required for the data source. In addition, Microsoft Office version 10 or higher is required.

**SAS/ACCESS Interface to Oracle**

Base SAS is required for the installation of SAS/ACCESS Interface to Oracle software.

**DBMS Products Required**

The user may install an Oracle client on the same box as SAS/ACCESS Interface to Oracle, or an Oracle server may be used in place of the Oracle client.

The minimum required Oracle client libraries release is Oracle, Release 11g.

Note that SAS 9.4 for Microsoft Windows for x64 requires the 64-bit version of the Oracle client libraries.

*Note:* In order to use the Bulk Load feature of this SAS product, you must have Oracle’s SQL*Loader data-loading 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**

Base SAS is required for the installation of SAS/ACCESS Interface to PC Files software.

**DBMS Products Required:** Microsoft Access Database Engine 2007 Redistributable (ACE driver) or later version.

SAS/ACCESS Interface to PC Files software supports access to virtually any data source through ODBC support on Windows, as well as the following software formats:
System Requirements for SAS 9.4 Foundation for Microsoft Windows

- dBase files (.dbf)
- Excel files (.xls, .xlsx, .xlsb, .xlsm)
- JMP files (.jmp)
- Microsoft Access database files (.mdb or .accdb)
- Paradox (.db)
- SPSS files (.sav)
- Stata files (.dta)

SAS 9.4 will automatically install the Access Database Engine 2010 Redistributable (ACE driver) when you install SAS/ACCESS Interface to PC Files software if no previous ACE driver is installed; otherwise, the existing ACE installation is left as is.

**Note:** 32-bit and 64-bit Microsoft ACE engine cannot co-exist on 64-bit Windows. We strongly suggest you to install Microsoft ACE driver to match the SAS “bitness” on 64-bit Windows.

Use of an ACCESS or EXCEL libname engine requires the installation of a 64-bit Microsoft ACE driver. If the message “ERROR: Connect: Class not registered” appears while you are using the libname ACCESS or EXCEL libname engine, you have the incompatible 32-bit Microsoft Access database engine (ACE) installed.

If you have to use the 32-bit ACE driver with 64-bit SAS installed, a 32-bit SAS PC Files Server must be used to bridge the “bitness gap” with PCFILES libname engine. You can run PC Files Server as a Windows service or as an application listening to the PCFILES libname engine. PC Files Server provides data encryption and Authentication features with default port number 9621, which can be configured through the PC Files Server application console. Note that the bitness” (32-bit or 64-bit) of SAS PC Files Server must match that of the Microsoft ACE driver on the same Windows machine.

**SAS/ACCESS Interface to PostgreSQL**

Base SAS is required for the installation of SAS/ACCESS Interface to PostgreSQL software.

SAS/ACCESS Interface to PostgreSQL software requires an ODBC driver – psqlodbc version 9.0.1, and PostgreSQL Database version 9.0 or later.

**SAS/ACCESS Interface to SAP HANA**

Base SAS is required for the installation of SAS/ACCESS Interface to SAP HANA software.

SAS/ACCESS Interface to SAP HANA requires the ODBC driver (64-bit) for SAP HANA from SAP. The ODBC driver is part of the SAP HANA Client.

**DBMS Products Required:** SAP HANA Client 1.00 (ODBC driver)

**SAS/ACCESS Interface to Sybase**

Base SAS is required for the installation of SAS/ACCESS Interface to Sybase software.

**DBMS Product Required:** Sybase Open Client SDK (Software Developers Kit) Software, Release 15.x or later

**Note:** Sybase IQ is not supported; SAS/ACCESS Interface to Sybase IQ software must be used instead.

For more information about SAS/ACCESS Interface to Sybase software, refer to **SAS/ACCESS Software for Relational Databases: Reference.**
**Note:** If you want to access Microsoft SQL Server data, you will need to use SAS/ACCESS Interface to Microsoft SQL Server software.

**SAS/ACCESS Interface to Sybase IQ**

Base SAS is required for the installation of SAS/ACCESS Interface to Sybase IQ software.

SAS/ACCESS Interface to Sybase IQ requires an ODBC driver from Sybase. The Sybase IQ ODBC driver is included in the Sybase IQ Network Client. To obtain the Sybase IQ Network Client, release 15.4 and above, please contact your database administrator or Sybase technical support at 1-800-8-SYBASE.

**SAS/ACCESS Interface to Teradata**

Base SAS is required for the installation of SAS/ACCESS Interface to Teradata software.

**DBMS Products Required:**
- Teradata Database 13.10 or higher
- Teradata CLIv2 client libraries, TTU 13.10 or higher

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

**SAS/AF**

**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.
- Depending on the object, certain non-graphic objects may require SAS/GRAPH software to print.

**SAS/CONNECT**

Base SAS is required for the installation of SAS/CONNECT software.

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

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

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

SAS/Genetics 12.1

Base SAS and SAS/GRAPH are required for the installation of SAS/Genetics software.

SAS/GIS

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.

SAS/GRAPH

The 32-bit or 64-bit versions of Internet Explorer, versions 9 or 10, are required to run the SAS/GRAPH ActiveX Graph Control from a web browser.
System Requirements for SAS 9.4 Foundation for Microsoft Windows

The 32-bit or 64-bit versions of Internet Explorer, versions 9 or 10, Firefox version 6 or higher, or Chrome version 15 or higher are required to run the SAS/GRAPH Java Applets from a web browser.

The Java plug-in must be installed in order for the SAS/GRAPH Java applets to be displayed in the SAS internal browser, Internet Explorer, Firefox, or Chrome. If the Java plug-in is not installed already, the SAS internal browser and Internet Explorer will prompt you for the installation but the other web browsers will not. The Java runtime can be installed from the Java website before you run SAS Java applets.

If you are prompted to install the Java plug-in, you must refresh your browser after the plug-in is installed or the SAS/GRAPH Java applet will not display.

**SAS/IntrNet**

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 9.4 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/OR 12.1**
The use of graphics in SAS/OR software requires a SAS/GRAPH license. A SAS High-Performance Analytics license is required to invoke the OPTLP, OPTMILP, OPTQP, and OPTMODEL procedures in distributed computing mode.

**SAS/TOOLKIT**
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.

**SAS/Warehouse Administrator**

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.
System Requirements for SAS 9.4 Foundation for Microsoft Windows
SAS is the leader in business analytics software and services, and the largest independent vendor in the business intelligence market. Through innovative solutions delivered within an integrated framework, SAS helps customers at more than 50,000 sites improve performance and deliver value by making better decisions faster. Since 1976, SAS has been giving customers around the world THE POWER TO KNOW®.