

System Requirements for SAS[®] 9.3 Foundation for Microsoft[®] Windows[®] for x64



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Using the System Requirements

This document provides requirements for installing and running SAS 9.3 Foundation on Microsoft Windows for x64. You must update your system to meet the minimum requirements before running SAS 9.3 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>.

Resources for Other Windows Deployments

For information about SAS 9.3 Foundation in other Windows editions, please refer to *System Requirements for SAS 9.3 Foundation for Microsoft Windows*. This document is available from the SAS Install Center, <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 9.3 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 for x64 Environments

SAS 9.3 Foundation is supported in the following environments:

Server Operating Systems

Microsoft Windows Server 2008 Family

SAS 9.3 Foundation is supported on the following x64 editions of the Windows Server 2008 family with SAS 9.3 TS1M0 and higher:

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

SAS 9.3 Foundation is supported on the following x64 editions of the Windows Server 2008 R2 family with SAS 9.3 TS1M0 and higher:

- Microsoft® Windows® Server 2008 R2 Standard Edition
- Microsoft® Windows® Server 2008 R2 Enterprise Edition
- Microsoft® Windows® Server 2008 R2 Datacenter Edition

Microsoft Windows Server 2003 Family

SAS 9.3 Foundation is supported on the following x64 editions of the Windows Server 2003 family:

- Microsoft® Windows® Server 2003 for x64 systems, Standard Edition
- Microsoft® Windows® Server 2003 for x64 systems, Enterprise Edition
- Microsoft® Windows® Server 2003 for x64 systems, Datacenter Edition

Client Operating Systems

- Microsoft® Windows® XP Professional for x64 systems
- Microsoft® Windows® Vista for x64 systems - Enterprise, Business, and Ultimate Editions

SAS Support for Windows 7 and Windows 8

Windows 7 SP1 Professional, Ultimate, and Enterprise: Supported in SAS 9.3 Foundation products.

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

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

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

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

Supported Operating Environments for Windows

For more information about the Microsoft Windows operating systems that are supported in SAS 9.3, please refer to SAS Knowledge Base / System Requirements, <http://support.sas.com/resources/sysreq/hosts/pc/>.

Java Requirements

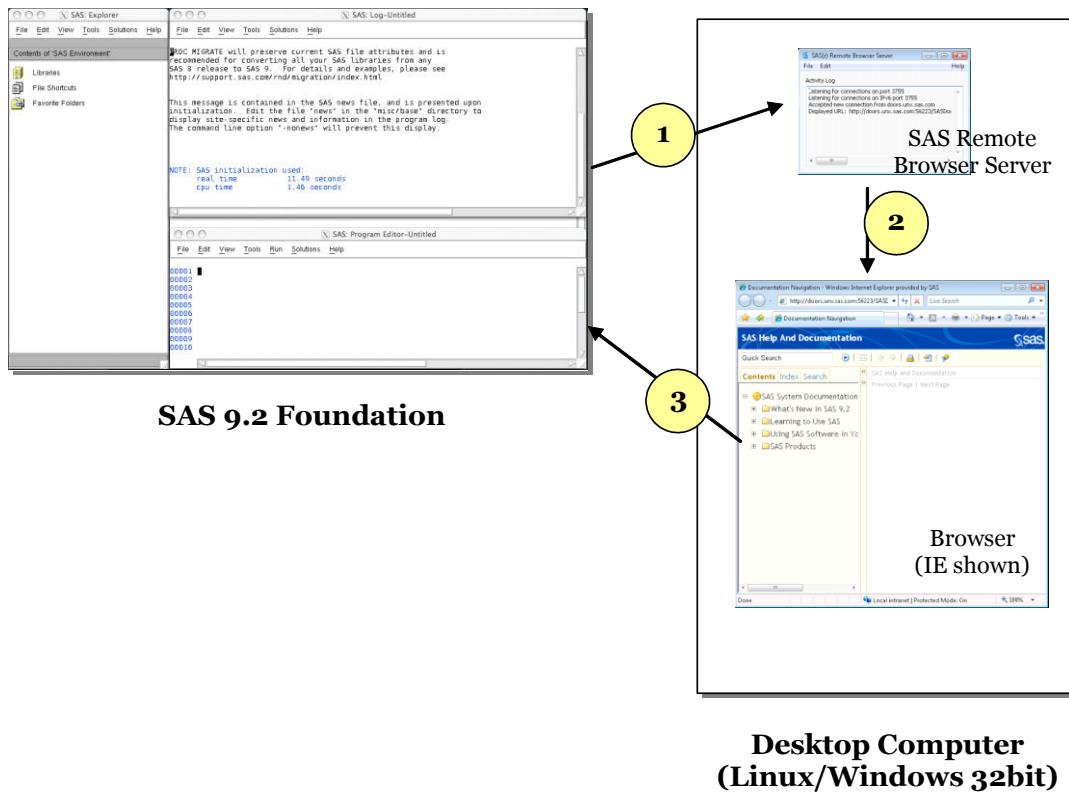
For information about Java Runtime Environment (JRE) requirements, please refer to the SAS 9.3 Support for Java Runtime Environments Web page, located at <http://support.sas.com/resources/thirdpartysupport/v93/jres.html>.

Web Browser

SAS 9.3 Foundation uses a new system, Remote Browsing, for displaying Web-based information. Instead of running a browser on the workstation, SAS 9.3 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. The process is illustrated below.

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.

Platform	Supported Browser
Windows XP/Vista/7 32-bit and 64-bit	Firefox 3.6
	Internet Explorer 7 or Internet Explorer 8
Linux 32-bit and 64-bit	Firefox 3.6

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/v92/thirdparty92.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.

Hardware Requirements

SAS 9.3 Foundation on Microsoft Windows for x64

Please note the following requirements for installation of SAS 9.3 Foundation for x64 editions of Windows.

Machines Supported

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

Memory Requirements

The following requirements must be met for a deployment of SAS 9.3 for x64 on Windows for x64 systems:

Windows XP Professional

512 MB minimum or more for improved performance

512 MB minimum of swapfile space

Supported Editions of Windows Server 2003, Windows Server 2008, Windows Vista, and Windows 7

1 GB minimum (more memory is recommended for improved performance)

1 GB minimum of swapfile space

Monitors Supported

SVGA (resolution of 800x600 or higher)

Additional Features

The User Installation Experience in SAS 9.3

If you are upgrading to SAS 9.3 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 9.3 Foundation and any other application supporting DDE. SAS 9.3 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 9.3 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.

SAS Service Configuration Utility

The SAS Service Configuration Utility allows administrators to customize the operation of SAS 9.3 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 9.3 Foundation on Microsoft Windows for x64*.

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 User Guide* for information about how to select the specific products you want to copy into a separate depot. Such a newly created depot can serve the same function as those depots did in previous releases.

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 9.3 Foundation for Windows. Use this information to help you determine how much free disk space you must have available before you can install SAS 9.3 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

Software Product	Disk Space (in MB)
Base SAS	747
SAS High-Performance Forecasting 12.1	6
SAS Interface to OPC Historical Data Access 12.1	.1
SAS/ACCESS Interface to Aster	1
SAS/ACCESS Interface to DB2	1
SAS/ACCESS Interface to Greenplum	7
SAS/ACCESS Interface to MySQL	*
SAS/ACCESS Interface to Netezza	*
SAS/ACCESS Interface to ODBC	1
SAS/ACCESS Interface to OLE DB	*
SAS/ACCESS Interface to Oracle	1
SAS/ACCESS Interface to PC Files	8
SAS/ACCESS Interface to Sybase	1
SAS/ACCESS Interface to Sybase IQ	*
SAS/ACCESS Interface to Teradata	1
SAS/AF	6
SAS/CONNECT	3
SAS/EIS	50
SAS/ETS 12.1	30
SAS/FSP	1
SAS/Genetics 12.1	3
SAS/GIS	50
SAS/GRAPH	391
SAS/IML 12.1	6
SAS/IntrNet	4
SAS/LAB	9
SAS/OR 12.1	13

Software Product	Disk Space (in MB)
SAS/QC 12.1	21
SAS/STAT 12.1	70
SAS/TOOLKIT	10

- * 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.
- ** Beginning with the first maintenance release of SAS 9.3 in December 2011, SAS/GRAPH also includes new 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 9.3 components that offer DBCS support.

Software Product- DBCS Support	Disk Space (in MB)*
Core of SAS 9.3 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

- * 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 9.3 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 10
Korean	174.0	Page 10

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 for x64:

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 5, 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 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 9.5 FixPack 3: AIX 5.3 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 SAS Scoring Accelerator for Greenplum requires Base SAS, SAS/STAT, SAS/ACCESS Interface to Greenplum, and SAS Enterprise Miner.

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.

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 minimum required Oracle Client release is Oracle, Release 10g.

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

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. To publish the model to the database, it also requires a SAS code interface or SAS Model Manager.

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® 9.3 Foundation for Microsoft® Windows® for x64* 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 8.1 FixPak 18 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 DB2 Run-Time Client, DB2 Application Development Client, or DB2 Administration 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. Contact SAS Technical Support for details about how to obtain these components.

SAS/ACCESS Interface to Hadoop

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

Hadoop Components Required:

- Hadoop 0.20.2 or later (for Cloudera, CDH3u2 or later)
- Hive Server 0.7.1 or later, including fix HIVE-2315
- Hive JDBC 0.7.1 or later, including fixes HIVE-1815 and HIVE-2315

Hadoop Component Recommended: JDBC fix HIVE-2137

Hive Fix Notes

1. Cloudera CDH3u2 and later versions already contain the required fixes HIVE-1815 and HIVE-2315.
2. HIVE-2315 is both a server and client-side fix. It should be present on your Hadoop server and on your SAS machines.
3. HIVE-1815 and HIVE-2137 are client (SAS-side) fixes. They are not required to be on your Hadoop server.

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 Netezza. To get the Netezza ODBC driver, release 3.1.4 or above, please contact Netezza technical support at (877) 810-4441 or visit the Netezza customer support Web site, <http://www.netezza.com/support/login.cfm>.

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.

If you are using the 32-bit version of base SAS, you must have the 32-bit version of the ODBC Driver for the data source. If you are using the 64-bit version of base SAS, you must have the 64-bit version of the ODBC Driver for the data source.

Please see the *Configuration Guide for SAS 9.3 Foundation on Microsoft Windows for x64* 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.

If you are using the 32-bit version SAS, you must have the 32-bit version of the OLE DB provider for the data source. If you are using the 64-bit version SAS, you must have the 64-bit version of the OLE DB provider for the data source.

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 10g.

If you are using the 32-bit version SAS, you must have the 32-bit version of the Oracle client libraries. If you are using the 64-bit version SAS, you must have 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

SAS/ACCESS Interface to PC Files software supports access to many different file formats files on Windows for x64, including Microsoft Access database files (.mdb or .accdb), Microsoft Excel workbook files (.xls, .xlsb, .xlsm or .xlsx) or any ODBC-supported data source.

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

DBMS Products Required: Microsoft Access Database Engine 2010 Redistributable (ACE driver)

SAS 9.3 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.

Use of ACCESS or EXCEL libname engine requires that the "bitness" (32- or 64-bit) of SAS matches the installed Microsoft ACE driver. If the "bitness" does not match, SAS PC Files Server and PCFILES libname engine must be used to bridge the "bitness gap." In the typical scenario, a user may have 64-bit SAS and a 32-bit ACE driver, requiring 32-bit SAS PC Files Server.

Note that 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.

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 12.5.2 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 15.1 ESD#3 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 12 or higher (Teradata Database 13.10 or higher if Temporal features are needed)
- Teradata CLIV2 client libraries, TTU 12 or later for Windows

The following software is recommended:

- Teradata FastExport utility, TTU 12 or later for Windows
- Teradata MultiLoad utility, TTU 12 or later for Windows
- Teradata Parallel Transporter API, TTU 12 or later for Windows

If you are using the 32-bit version SAS, you must have the 32-bit version of the Teradata client. If you are using the 64-bit version SAS, you must have the 64-bit version of the Teradata client.

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 for x64.

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. The list of possible printers can be found in the Graphics Hardware and Software Compatibility section on page 21.

SAS/GRAPH

The 32-bit version of Internet Explorer, Version 6 SP2 or 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 6 SP2 or Version 7 is also required to run the SAS/GRAPH Java Applets from a Web browser.

The 64-bit Java plug-in must be installed in order for SAS/GRAPH Java applets to be displayed in the SAS internal browser, Internet Explorer, or Firefox. The SAS internal browser and Internet Explorer will prompt you for the installation, but Firefox will not. If you prefer, the 64-bit Java runtime can be installed from the Java website before you run SAS Java applets.

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 9.3 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

The following products are required for the installation of SAS/LAB software:

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

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.

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 for x64 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 9.3 Foundation.

Refer to the "SAS/GRAPH Software" section on page 19 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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