

# System Requirements

## SAS® Digital Marketing 6.5

### Overview

This document provides requirements for installing and running SAS Digital Marketing software. You must update your system to meet these requirements before performing the installation. SAS Foundation version 9.4M3 (Base SAS) is required for SAS Digital Marketing 6.5.

### *Major Sections in this Document*

This document lists the following major requirements:

- Software requirements
- Hardware requirements
- Database support
- Specific product requirements

This document may be updated periodically. For additional information and to view the latest system requirements for your version of SAS, access the Install Center site:

<http://support.sas.com/documentation/installcenter/94/index.html>.

### *Installation Requirements*

SAS Digital Marketing can run on multiple platforms. Administrator privileges are required to install SAS software and updates. This requirement ensures that SAS Digital Marketing 6.5 can be completely and safely installed.

SAS Digital Marketing is a multi-tier application consisting of components that are installed on the client tier, middle tier, and server tier. Each tier supports a different set of platforms, which are listed below.

### *SAS Visual Analytics Administration and Reporting 7.3*

SAS Digital Marketing includes SAS Visual Analytics Administration and Reporting (single machine, or SMP environment) by default. SAS Visual Analytics Administration and Reporting is required to enable the Reporting Workspace in the CI Studio user interface. If SAS Visual Analytics Administration and Reporting is not installed, the Reporting Workspace will not be available in your system.

This version of SAS Visual Analytics Administration and Reporting is only supported on 64-bit Linux and Windows operating systems. If SAS Digital Marketing will be installed on an operating system other than the supported versions of Linux or Windows, SAS Visual Analytics Administration and Reporting must be installed on a separate machine.

For more information, see the SAS Visual Analytics 7.3 [system requirements](#).

# Software Requirements

## *Client Tier*

### **Client Applications**

The SAS Digital Marketing Client includes the following software:

- SAS Digital Marketing Studio 6.5
- SAS Enterprise Guide 7.12
- SAS Management Console 9.4
- SAS Workflow Studio 1.3

### **Web Browser**

The primary user interface is an integrated component of SAS Customer Intelligence Studio. SAS Customer Intelligence Studio is accessed via a supported web browser.

Recent versions of the following web browsers are supported: Chrome, Firefox, and Internet Explorer. For more information, see the following page on the Support site:

<http://support.sas.com/resources/thirdpartysupport/v94/browsers.html>.

Some SAS web applications use Adobe Flash Player to provide interactive functionality. For more information, see:

<http://support.sas.com/resources/thirdpartysupport/v94/browsers.html#flash>

### **Operating System Support**

Supported operating systems for the client are as follows:

- Windows 7 (32-bit or 64-bit)
- Window 8 (32-bit or 64-bit)
- Windows 8 Enterprise-(32 bit or 64-bit)
- Windows 8 Professional (32-bit or 64-bit)

For information about patch levels, use the menus to see support information for SAS 9.4 on the following web page: <http://support.sas.com/supportos/list>.

### **SAS Visual Analytics Mobile Clients**

SAS Visual Analytics Mobile Clients (SAS Mobile BI) are available for the Apple iPad and Android tablets via free downloads from app stores.

### **Presentation Virtualization Environments**

Support for presentation virtualization environments (such as Citrix) for clients that are included with SAS Digital Marketing is consistent with the SAS corporate support policy, which can be found at the following web site:

<http://support.sas.com/techsup/pcn/virtualization.html>.

Specific environment combinations should be reviewed by a knowledgeable SAS professional services representative prior to deployment.

## Middle Tier

### Middle-Tier Applications (Inside the Firewall)

The following products are included on the SAS Digital Marketing middle-tier machine:

- SAS Customer Intelligence Common Logical Types 6.5
- SAS Customer Intelligence Reporting Mid-Tier 6.5
- SAS Customer Intelligence Studio 6.5, which includes SAS Digital Marketing Extensions for SAS Customer Intelligence Studio
- SAS Customer Intelligence Utilities 6.5
- SAS Digital Marketing Web Studio and Web Reporting Infrastructure 6.5
- SAS Studio Mid-Tier 3.5
- SAS Web Application Server 9.42
- SAS Web Infrastructure Data Base JDBC Drivers 9.4
- SAS Web Infrastructure Platform 9.4
- SAS Web Server 9.42

Your SAS Digital Marketing package may also include the following optional SAS products:

- SAS Marketing Operations Management Artwork Producer  
(delivered with separately licensed SAS Marketing Operations Management mid-tier)
- SAS Marketing Operations Management Digital Asset Management  
(delivered with separately licensed SAS Marketing Operations Management mid-tier)

**Note:** An “outside the firewall” configuration is applicable for the Tracking servlet (optional, for cases where reverse proxy servers are deployed).

### Operating System Support

Supported operating systems are as follows:

- AIX, Release 7.1 TL0 on the pSeries chip family
- HP-UX 11.31 (HP-UX 11i v3, Update 9) on the Itanium chip family
- Red Hat Enterprise Linux 6 update 1 (64-bit version) on the x64 chip family
- SUSE Linux Enterprise Server 11, SP 1
- Oracle Linux 6.1 (64-bit version) on the x64 chip family
- Solaris 10 Update 9 for SPARC architecture
- Solaris 11 and later versions for SPARC
- Solaris 10 x64 (x64-86)
- Solaris 11 (64-bit version)
- Windows Server 2008 64-bit with Service Pack 2 or a later version
- Windows Server 2008 R2 64-bit
- Windows Server 2012 64-bit

For information about patch levels, use the menus to see support information for SAS 9.4 on the following web page: <http://support.sas.com/supportos/list>.

## SAS Visual Analytics Administration and Reporting Mid-Tier

The following components are included on the SAS Visual Analytics Administration and Reporting Mid-Tier machine:

- SAS Studio Mid-Tier 3.5
- SAS Visual Analytics Administrator 7.3
- SAS Visual Analytics Designer 7.3
- SAS Visual Analytics Graph Builder 7.3
- SAS Visual Analytics Hub 7.3
- SAS Visual Analytics Printing Support 7.3
- SAS Visual Analytics Report Viewer 7.3
- SAS Visual Analytics Services 7.3
- SAS Visual Data Builder 7.3
- SAS Web Application Server 9.42
- SAS Web Infrastructure Platform 9.4
- SAS Web Server 9.42
- Search Interface to SAS Content 3.6

SAS Visual Analytics Administration and Reporting Mid-Tier is only supported on Windows (64-bit) and Linux (64-bit) operating systems. For the full list, see the SAS Visual Analytics System Requirements document, available from the Install Center:

<http://support.sas.com/documentation/installcenter/en/ikvisanalytofrvssr/68901/HTML/default/index.html>

## Middle Tier Java Application Server Support

The relevant Java Software Developer Kits (JDKs) and the latest information and special instructions can be found on the Third-Party Support Web site:

<http://support.sas.com/resources/thirdpartysupport/v94/jdks.html>

## Product Requirements

The middle tier of the SAS 9.4 Intelligence Platform includes a SAS Web Application Server and a SAS Web Server for use as an HTTP server.

When you install your SAS solution software, SAS Deployment Manager installs and configures the required web application servers and web servers.

<http://support.sas.com/resources/thirdpartysupport/v94/appservers/index.html>.

To install these servers, select one of the supported operating systems for the middle tier.

**Note:** These servers cannot be installed on the z/OS or 32-bit Windows platforms.

## Server Tier

SAS Digital Marketing servers run on the server tier to provide metadata, data, and compute services.

### SAS Digital Marketing Server Applications

The following applications are included with SAS Digital Marketing Server:

- SAS Customer Intelligence Common Public Type Metadata 6.5
- SAS Customer Intelligence Common Server 6.5
- SAS Digital Marketing Public Type Metadata 6.5
- SAS Digital Marketing Server Components 6.5
- SAS Integration Technologies 9.4
- SAS LASR Analytic Server Access Tools 2.7
- SAS Management Console 9.4
- SAS/GRAPH
- SAS/SHARE
- Base SAS 9.4, which includes:
  - SAS/SECURE
  - SAS Studio

#### Notes:

- *SAS Metadata Server can be installed on the same machine as the main SAS Digital Marketing server, or on a separate machine.*
- *SAS Digital Marketing includes one SAS/ACCESS engine of choice for the Recipient Database (JDBC Access), and one SAS/ACCESS engine of choice for your database. When SAS Digital Marketing is included with SAS Marketing Automation, no additional SAS/ACCESS engines are included—your order includes only the SAS/ACCESS engines that are included with SAS Marketing Automation.*
- The relevant Java Software Developer Kits (JDKs) and the latest information and special instructions can be found on the Third-Party Support web site:  
<http://support.sas.com/resources/thirdpartysupport/v94/jdks.html>.

### Operating System Support

The supported operating systems for SAS Digital Marketing Server are as follows:

- AIX, Release 7.1 TL0 on the pSeries chip family
- HP/UX 11.31 (HP-UX 11i v3 Update 9) on the Itanium chip family
- Oracle Linux 6.1 (64-bit version) on the x64 chip family
- Red Hat Enterprise Linux 6 update 1 (64-bit version) on the x64 chip family
- SUSE Linux Enterprise Server 11 sp1 (64-bit version) on the x64 chip family
- Solaris 10 Update 9 for SPARC architecture
- Solaris 11 and later versions for SPARC
- Solaris 10 Update 9 (64-bit version) on the x64 chip family
- Solaris 11 (64-bit version) on the x64 chip family
- Windows Server 2008 64-bit with Service Pack 2 or later
- Windows Server 2008 R2 64-bit
- Windows Server 2012 64-bit

For information about patch levels, use the menus to see support information for SAS 9.4 on the following web page: <http://support.sas.com/supportos/list>.

## SAS Visual Analytics Administration and Reporting Server

SAS Visual Analytics Administration and Reporting Server is available for Distributed or Non-distributed LASR environments. SAS recommends installing it on a separate machine. The following applications are included with SAS Visual Analytics Administration and Reporting Server:

- Base SAS 9.4
- SAS LASR Analytic Server Distributed Mode Component 2.3
- SAS LASR Analytic Server Non-Distributed Components 2.3
- SAS Visual Analytics Administration and Reporting 7.3

SAS Visual Analytics Administration and Reporting Server is only supported on Windows (64-bit) and Linux (64-bit) operating systems. For the full list, see the SAS Visual Analytics System Requirements document, available from the Install Center:  
<http://support.sas.com/documentation/installcenter/en/ikvisanalytofrvssr/68901/HTML/default/index.html>

## SAS Metadata Server

SAS makes the following recommendations for SAS Metadata Server deployments:

- a 64-bit host system
- a dedicated machine to simplify tuning, management, and diagnostics
- multi-core server hardware because SAS Metadata Server is multi-threaded
- four or more cores for production deployments

The disk I/O performance of any server-class system should be sufficient. Memory requirements are highly dependent on the product mix and usage, but 8 GB of RAM are sufficient for most large deployments. For many deployments, 4 GB of RAM are sufficient and should be considered a minimum, unless the specific deployment is tested and verified to require less memory.

You can find specific operating system support in the BI Server system requirements document:

<http://support.sas.com/documentation/installcenter/en/ikbisrvofrsr/66644/HTML/default/index.html>.

### Notes:

- *If your configuration deploys the Metadata Server on the same computer as the SAS Digital Marketing Server, the supported operating systems are the same as those listed above for the Server Tier.*
- *SAS Visual Analytics Administration and Reporting supports Windows 64-bit and Red Hat Enterprise Linux 6.1 only for its Metadata Server and is not supported on any other operating systems.*

For information about patch levels, use the menus to see support information for SAS 9.4 on the following web page: <http://support.sas.com/supportos/list>.

# Hardware Requirements

## **Client Tier: Minimum Recommended Hardware**

- Modern Intel or AMD processor running at 2.33 GHz or faster
- **Memory:**
  - 1 GB above your current environment (for both Adobe Flash and SAS CI Studio)
  - 128 MB graphical memory
- **Disk Space:** SAS Digital Marketing Studio 6.5 requires a minimum installation space of approximately 800 MB.

***Note:** SAS Digital Marketing Studio is a thick client that is useful for server configuration, broadcast management, and complex broadcast editing options. A marketer can instead use SAS Customer Intelligence Studio, a web-based client that provides a user interface for creating, modifying, scheduling, and executing email and SMS broadcasts.*

## **Middle Tier: Minimum Recommended Hardware**

### **Memory**

The minimum recommended memory for the middle tier is 8 GB per core. Memory requirements for optimal performance may vary based on the requirements of other web applications that are running, number of total and concurrent users who are accessing the SAS Digital Marketing applications, and the amount of content accessed by each user. These requirements should be determined based on consultation with SAS Enterprise Excellence Center.

### **Disk Space**

- SAS Customer Intelligence Studio 6.5: 300 MB above your current environment.
- SAS Digital Marketing Web Studio and Web Reporting Infrastructure 6.5: 250 MB above your current environment.
- BESS (SDM Tracking servlets): 200 MB above your current environment.
- SAS Customer Intelligence Reporting Mid-Tier 6.5: 250 MB above your current environment.

## **Server Tier: Minimum Recommended Hardware**

For memory and disk space requirements, see the SAS 9.4 system requirements located at <http://support.sas.com/resources/sysreq/index.html>, under the relevant operating system.

## Database Support

SAS Digital Marketing 6.5 can connect to various databases. The following list contains the versions of databases with which SAS Digital Marketing is compatible:

- EMC Greenplum, DataDirect ODBC driver 7.1.2, Greenplum bulk loader 4.2
- IBM DB2/UDB Version 10.1 and 10.5
- IBM Netezza Version 6.0, 6.1, and 7.0
- Microsoft SQL Server Version 2008, 2008 R2, and 2012 Enterprise Edition
  - SAS/ACCESS to OLE DB; only supported on Windows
  - SAS/ACCESS to ODBC; only supported Windows
- Microsoft SQL Server Version 2008, 2008 R2 and 2012 Standard Edition (supports no more than 10 million customer records)
  - SAS/ACCESS to OLE DB; Only supported on Windows
  - SAS/ACCESS to ODBC; Only supported on Windows
- Microsoft SQL Server 2014 using the SQL Server 2012 native client
  - SAS/ACCESS to OLEDB is required.
  - For the libname parameter, the provider must be set as **PROVIDER=SQLNCLI11**.
- Oracle 11g, 11.2, 12.1, and 12.2/18c

**Notes:** *If your installation includes Oracle Database 12c/18c, be aware that Oracle Multitenant architecture is not supported.*

If your installation includes Oracle Database 12.2/18c, this version is only supported by SAS 9.4TS1M4 and later. Oracle 12.2/18c on Linux requires a hot fix. For more information, see the following SAS note:

<http://support.sas.com/kb/60/895.html>.

- PostgreSQL Version 9.1 client, Version 9.2 Bulk Loader
- SAS Datasets Version 9.4 Maintenance 2

**Note:** *It is necessary to use SAS Data Sets along with SAS/SHARE so that response records can be updated concurrently.*

- Teradata 12.0, 13.0, 13.1, 14.0 and 14.1

**Notes:**

- *Mixing of databases will not perform to an acceptable level and is not recommended.*
- *To avoid possible issues with concurrent updates, do not hold SAS Digital Marketing Response and Opt-Out tables as SAS Datasets. SAS recommends using another supported database, or if necessary, using SAS/SHARE. For more information, see SAS Note 47241, available at <http://support.sas.com/kb/47/241.html>.*

## Specific Product Requirements

SAS Digital Marketing requires a Mail Transfer Agent (MTA) Server. A Mail Transfer Agent is a mail server program. MTAs interact with each other generally through the Internet. You must fulfill this requirement by acquiring an MTA from a third-party vendor of choice. For example, you can install Code-crafter's [Ability Mail Server](#).

**Note:** *Most high-performance MTAs automatically implement domain throttling. For high-volume implementations that require domain throttling, such as a daily email transmission rate that exceeds a few hundred thousand, throttling at the MTA level will be required. SAS also advises you to use an MTA when the organization needs to send email campaigns that have offers that are for short periods; for example, use an MTA when email recipients need to respond quickly to offers that are valid for one day.*

In addition to a third-party MTA, an SMS/MMS gateway is required in order to send out SMS/MMS broadcasts. Recommended gateways are [Clickatell](#) and [NowSMS](#)

It is your responsibility to satisfy this requirement if you are interested in sending out SMS/MMS broadcasts. Contact the third-party vendor of choice for pricing.

You must also provide a fully configured email server. JavaMail supports Simple Mail Transfer Protocol (SMTP), Post Office Protocol (POP), and Internet Message Access Protocol (IMAP) communication methods with an MTA.

**Note:** *IMAP support for the JavaMail application programming interface (API) is experimental in this version of SAS Digital Marketing, and the associated functionality, such as sub-folder processing, is not supported. Documentation is not available for this email protocol.*

## References

SAS Install Center (for documentation related to deployment):

<http://support.sas.com/documentation/installcenter/>.

Third-Party Software Requirements:

<http://support.sas.com/resources/thirdpartysupport/v94/index.html>

SAS Marketing Operations Management Version 6.5 is an optional product to use along with SAS Digital Marketing 6.5. For more information about the requirements for SAS Marketing Operations Management, see the version 6.4 system requirements document:

<http://support.sas.com/documentation/installcenter/en/ikmomsdmofrsr/68668/HTML/default/index.html>.