

Helpful Hints for Transitioning to SAS® 9.4

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ABSTRACT

A group tasked with testing SAS® software from the customer perspective has gathered a number of helpful hints for SAS® 9.4 that will smooth the transition to its new features and products. These hints will help with the "huh?" moments that crop up when you're getting oriented and will provide short, straightforward answers. And we also share insights about changes in your order contents. Gleaned from extensive multi-tier deployments, SAS® Customer Experience Testing shares insiders' practical tips to ensure you are ready to begin your transition to SAS® 9.4.

INTRODUCTION

New migration features? Environment management and monitoring? Clustering metadata and middle-tier servers for failover? SAS middle-tier servers? Backup and recovery?! How do I prepare for my transition to SAS 9.4? The Customer Experience Testing group at SAS is tasked with testing SAS software from the customer perspective. This group has gathered a number of helpful hints that will smooth your transition to SAS 9.4. These hints will help with the "Huh?" moments that crop up when getting oriented and provide short upfront answers. This paper also shares insights about changes in your order contents. Gleaned from extensive multi-tier deployments, SAS Customer Experience Testing shares insiders' practical tips to ensure you are ready to begin your transition to SAS 9.4.

The target audience for this paper is primarily system administrators who will be installing, configuring and/or administering the SAS 9.4 environment.

WHAT'S NEW IN SAS 9.4?

There are many new features in SAS 9.4. For a quick, convenient overview of new functionality, enhanced features, and new products that you might use in SAS 9.4, see **What's New in SAS® 9.4** available at <http://support.sas.com/documentation/whatsnew/>.

This paper is not intended to cover all of the new features. Instead, this paper highlights a few of the changes to assist with your transition to SAS 9.4.

SAS MIDDLE-TIER SERVERS

The middle-tier software includes the SAS® Web Server for use as an HTTP server and the SAS® Web Application Server for running SAS web applications. A third-party web application server is no longer needed. The SAS Web Server is an HTTP server and is based on VMware vFabric Web Server. The SAS Web Application Server is a lightweight server that provides enterprise-class features for running SAS web applications. The SAS Web Application Server is based on VMware vFabric tc Server. The SAS deployment tools configure these servers automatically. The tools simplify the configuration of vertical and horizontal clustering as well as HTTP load balancing.

The SAS Web Application Server stores its license file in the `/etc/opt/vmware/vfabric` folder on UNIX. This folder should be created with write access prior to starting your deployment. If this folder is not created or the SAS Installer ID does not have correct permissions, a configuration failure will occur while configuring the SAS Web Application Server. While the error message is useful in providing steps to rectify the problem, this failure can be avoided. See your Pre-Installation Checklist for details.

For additional details, see [SAS 9.4 Intelligence Platform: Middle-Tier Administration Guide](#).

SAS WEB INFRASTRUCTURE PLATFORM DATA SERVER

SAS® Web Infrastructure Platform Data Server is included in your deployment for use as transactional storage by SAS middle-tier software and some SAS solutions software. SAS Web Infrastructure Platform Data Server is the repackaged PostgreSQL database system, which is provided and deployed by SAS. SAS Web Infrastructure Platform Data Server is the default database server for the SAS® Web Infrastructure Platform Services Database. The SAS Web Infrastructure Platform Data Server replaces the SAS® Framework Data Server from SAS 9.3 and the SAS® Table Server from SAS 9.2.

During configuration, only one port is required to configure the default SAS Web Infrastructure Platform Data Server. However, there may be 40 to 90 or more "postgres" processes running that each require additional ports. These additional processes are created when the original Postgres process (through which all connections are first established) forks (or spawns) a new Postgres process to handle an individual client connection. For more information on these Postgres processes, see the PostgreSQL 9.3.1 documentation.

Some products and solutions might create a separate database instance in the embedded PostgreSQL database that runs on a separate, defined port. In the SAS documentation, these separate databases are referred to as Data Servers.

While the SAS Web Infrastructure Platform Data Server is included, you can choose an alternative database for the SAS Web Infrastructure Platform Services Database. See [Configuring an Alternative Database for SAS Web Infrastructure Platform Services](#) for details on the alternative databases supported as the SAS Web Infrastructure Platform Services Database.

For more information about SAS Web Infrastructure Platform Data Server, see [SAS 9.4 Intelligence Platform: Middle-Tier Administration Guide](#).

ENVIRONMENT MANAGER

SAS® Environment Manager is a new monitoring and management system for SAS deployments. SAS Environment Manager provides a web-based monitoring solution. Features include automatic resource discovery, monitoring of remote systems, personal and role-based dashboards, alerting, and visualization. The application provides web-based management, operation, and proactive monitoring of servers on both the middle tier and the SAS server tier. SAS Environment Manager incorporates some of VMware's Hyperic technology offering enterprise-class operational features.

SAS Environment Manager can also provide information about SAS servers that are not part of a specific SAS environment. SAS Environment Manager displays all instances that are discovered by an agent, including services or processes that are not part of your environment. This behavior can occur when there is more than one SAS deployment running on a given machine.

The SAS Environment Manager Agent is a process that runs on each machine to perform various functions, such as gathering resource metrics and auto-discovery of software components that run on its platform. The SAS Environment Manager Agent port is not configurable via the SAS® Deployment Wizard. There are no prompts to specify the port where the agent runs. That value is hard coded with a range of 2143-2152 based on the `Lev[n]` value. If the default port is not available at your site, you must manually change that port after configuration. Stop the SAS Environment Manager Agent if it is running. Edit the `agent.properties` file in the `SAS-Configuration-directory/Lev1/Web/SASEnvironmentManager/agent-5.0.0-EE/conf/` directory, specifying available port values for both `agent.listenPort` and `agent.setup.agentPort`. Then, restart the SAS Environment Manager Agent.

An agent must be installed and configured on a tier before the SAS Environment Manager will be able to monitor it. The agent location is driven by the deployment plan (`plan.xml`). Make sure that the SAS Environment Manager Agent is deployed on each tier that you intend to monitor with SAS Environment Manager.

In addition to the agents, the SAS Web Application Server and the SAS Environment must be running in order to use SAS Environment Manager. The SAS Environment Manager is actually a separate process from any of the `SASServer[X]` managed servers that is started using `SAS-Configuration-directory/Lev1/Web/SASEnvironmentManager/server-5.0.0-EE/bin/hq-server.sh`. Also, for the

SAS plug-ins to work on the Administration page, `SASServer2` must be running.

The SAS Environment Manager Server and Agent are not supported on the z/OS platform. SAS services running on z/OS cannot be monitored by SAS Environment Manager. This restriction is documented in the [System Requirements--SAS® Environment Manager 2.1](#).

For more information about SAS Environment Manager, see [SAS® Environment Manager 2.1: User's Guide](#).

SAS DEPLOYMENT AGENT

The SAS® Deployment Agent is required for deployments that run remote processes. SAS uses the agent to copy content and to perform configuration management operations associated with creating new servers and clustering. The SAS Deployment Agent is required for some administration activities such as creating new servers, configuring middle tier clustering, and using the Deployment Backup and Recovery tool.

Do not remove the SAS Deployment Agent when unconfiguring a SAS deployment. The SAS Deployment Agent runs outside the context of the SAS configuration, and should not be removed unless you are intending to uninstall all of your SAS deployment as well. For example, if you remove the SAS Deployment Agent Service on a Windows server, the SAS Deployment Agent Service fails to start during the subsequent configuration steps in the SAS Deployment Wizard because the service does not exist.

Before uninstalling SAS or deleting the SAS installation directory, run the SAS Deployment Manager task to stop the SAS Deployment Agent Service or process.

Note that the SAS Deployment Agent and the SAS Environment Manager Agent are separate entities. These agents serve different purposes and are unrelated.

For more information, see [SAS Deployment Agents](#) in [SAS 9.4® Intelligence Platform Installation and Configuration Guide](#).

DEPLOYMENT BACKUP AND RECOVERY

The new Deployment Backup and Recovery tool provides an integrated and automated method for backing up and recovering SAS content across multiple tiers and machines. The Deployment Backup and Recovery tool includes administrative commands that can display the current backup configuration, alter the configuration, and run backups manually. The SAS Deployment Agent is required for using this tool.

Make sure the user designated to perform backups has permissions to create the backup folder. On UNIX, this user is the SAS Installer user for each server and middle-tier machine. The first time a backup is run, the Deployment Backup and Recovery tool creates a `Backup` subfolder in the `Lev[n]` location. If the user designated to perform backups does not have permissions to create this subfolder, errors can occur.

If problems occur with a backup process, there are several log files for the Deployment Backup and Recovery tool to check for more information.

- For the utilities, see `SASHome\SASPlatformObjectFramework\9.4\tools\admin` (`backuprestbatch.log`, `backupserver.log`, `response.txt`) and `USERHOME\AppData\Local\SAS\SASDeploymentWizard` (`utility-name.log`).
- For the SAS Deployment Agent (Service on Windows-operating environments), see `SASHome\SASDeploymentAgent\9.4` (`backuprestbatch.log` and `backupserver.log`).
- For the web application, see `SASConfig\Web\Logs\SASServer1` (`SASDeploymentBackup9.4.log`)
- For each backup, see

```
SASConfig\Backup\Logs\YYYY-MM-DDTHH_MM_SS (ArchiveBackup\ArchiveBackup.log,  
ConfigDir\ConfigDir.log, ContentServer\ContentServer.log, Database\Database.log,  
session\session.log)
```

Windows paths are provided above; UNIX paths would have front slashes (/) instead of back slashes(\).

For details on using the Deployment Backup and Recovery tool, see “Using the Deployment Backup and Recovery Tool” in [SAS® 9.4 Intelligence Platform: System Administration Guide](#).

METADATA SERVER CLUSTERING

The new metadata server clustering feature provides redundancy and high availability of the metadata server, which is a core component of the SAS infrastructure. Clustering ensures that the metadata server will continue to operate if a server host machine fails. However, metadata server clustering is not supported on z/OS at this time.

For more information about metadata server clustering, see “Using Metadata Server Clustering” in [SAS® 9.4 Intelligence Platform: System Administration Guide](#).

MIDDLE-TIER CLUSTERING

The SAS® Deployment Wizard has been enhanced to simplify clustering the SAS Web Application Server. With the enhancements, you can easily configure vertical cluster members (additional server instances on the same machine) and horizontal cluster members (install and configure servers on additional machines).

However, not all products support clustering at this time. Products that do not support middle-tier clustering will run on the master node in the cluster but are not deployed on the cluster nodes. If the master node is not available, then those products are not available for use. For additional details, see [SAS® 9.4 Guide to Software Updates](#).

For more information on middle-tier clustering, see [SAS® 9.4 Intelligence Platform: Middle-Tier Administration Guide](#).

SAS STUDIO

SAS® Studio is a tool that you can use to write and run SAS code through your web browser. There are three editions of SAS Studio: SAS Studio – Single User, SAS Studio Basic, and SAS Studio Mid-Tier. For software orders that include SAS Studio, the edition of SAS Studio is based on the licensed operating system and the software in the customer order.

- SAS Studio – Single User – available on Windows operating systems when Base SAS is licensed
- SAS Studio Basic – available on Linux for x64 operating systems when SAS In-Memory Statistics for Hadoop is licensed
- SAS Studio Mid-Tier – available when SAS Integration Technologies is licensed

SAS Studio is first available in March 2014 and runs on the first maintenance release of SAS 9.4. To determine which edition of SAS Studio is included with your software order, see the SAS Software Summary ([ordersummary.html](#)) located in the `install_doc/<order-number>` directory of your SAS Software Depot.

Note that it is possible for an order to include SAS Studio Mid-Tier with either SAS Studio – Single User or SAS Studio Basic, depending on the full contents of your software order. In these cases, SAS Studio Mid-Tier is installed and configured like any other SAS web application when included in a SAS deployment plan.

When installed, SAS Studio – Single User is available from the **Start** menu. When started, SAS Studio – Single User launches a browser running on a free port. SAS Studio – Single User is accessible only from the Windows machine where it is installed.

When configured, SAS Studio Basic is available from any supported browser running on the port that was specified in the SAS Deployment Wizard. An operating system account is required for this edition.

When deployed, SAS Studio Mid-Tier is available from any supported browser accessing the URL provided in the `Instructions.html`. Metadata Server login credentials are required for this edition. SAS Studio Mid-Tier is deployed when included in a SAS deployment plan.

For more information about installing and configuring SAS Studio, see **SAS® Studio 3.1: Administrator's Guide**. Details on using SAS Studio can be found in the **SAS® Studio 3.1: User's Guide**.

MIGRATION

Migration to SAS 9.4 is supported from SAS 9.2 and SAS 9.3. Specific baseline requirements might apply for each SAS release and version of products. For more information about migration requirements, see the Focus Area for Migration at <http://support.sas.com/rnd/migration/index.html>.

In the first maintenance release for SAS 9.4, a feature was added that identifies previous versions of SAS offerings that are currently unable to be migrated directly to SAS 9.4 with the SAS® Migration Utility. The Migration Utility Analysis Report identifies which products to update in order to prepare them for migration. The new Migration Version Analysis section shows the versions of applicable products that are not supported for migration. If a product is listed in the Migration Version Analysis section, it might need to be migrated or updated to an interim version prior to migration to a SAS 9.4 system.

The information in the migration version analysis is limited to target systems of 9.4M1 (and later) and applies only to software that has already shipped on SAS 9.4.

At this time, the migration version analysis does not have any messaging for products that will never support migration to a future release.

When running the SAS Migration Utility from `support.sas.com` to analyze an environment prior to requesting an order for SAS 9.4, the information presented in the Analysis Report can give the impression that migration to SAS 9.4 is supported when it is not, since it reflects information for product versions shipping at the time the SAS Migration Utility was downloaded. For example, if your existing deployment includes a SAS solution that is not available at SAS 9.4, the Migration Version Analysis section of the report does not include the products from that solution in its analysis. You will not receive a warning that a SAS 9.4 version of the solution is not available. However, later in the Details section of the report you might see messages indicating that migration is available for individual products in that solution. The bottom line is while migration to SAS 9.4 will be supported for that solution, you cannot migrate this solution to SAS 9.4 because that solution has not been released. Using the SAS Migration Utility from the SAS Software Depot for your SAS 9.4 order will ensure you have up-to-date version information for all products in your order.

In the remainder of the Analysis Report, some products show a message with a green check mark such as “migration is supported for this version” even if the product is listed in the Migration Version Analysis section with unsupported versions. In such a case, disregard the “is supported” message. The migration version analysis takes precedence.

If the Migration Version Analysis section shows a product with unsupported versions on any machine in the deployment, then migration using the SAS Migration Utility is not supported. In order to migrate using the SAS Migration Utility, all products on all machines of the deployment must be supported for migration.

For more information on this new feature, see [SAS® 9.4 Intelligence Platform: Migration Guide](#).

The SAS Migration Utility that creates packages from SAS 9.3 configurations (smu93) and SAS 9.2 configurations (smu92) requires a 32-bit JRE. When launched, this utility will search in many typical locations for Java. If a 32-bit JRE is not in one of these locations, first specify the location of the JRE using the EXPORT command (for example

`export SMU_JAVA=path-to-32bit-jre)` and then run the SAS Migration Utility.

If at any point during the execution of the SAS Deployment Wizard you are prompted to choose a SAS Application Server to manage an object being configured, do not choose SASMeta. In some cases, the SAS Deployment Wizard might have SASMeta selected as the default. You must change this selection to an appropriate application server context for the component being configured. The [SAS® 9.4 Intelligence Platform: Migration Guide](#) includes several warnings to change the SAS Application Server Context if it is set to SASMeta.

ORDER CONTENT CHANGES

With SAS 9.4, the contents of your order could change. Here are a few of the more common changes:

SAS® Data Management Standard replaces the SAS® Enterprise Data Integration.

SAS has fully integrated the DataFlux suite of data quality, data integration, data governance, and master data management solutions. The newly branded SAS DataFlux products are now being combined into software offerings that include other SAS products. As a result of these changes, SAS Data Management Standard replaces SAS Enterprise Data Integration. Note that while SAS Enterprise Data Integration Server included SAS/SHARE® software, SAS Data Management Standard does not. Therefore, your source environment might have SAS/SHARE, but your migrated environment will not. Contact your SAS account representative if you need to continue to license SAS/SHARE at SAS 9.4.

SAS® Enterprise BI Server now supports SAS® Mobile BI on iPad and Android.

If you license SAS Enterprise BI Server, you can now use the SAS Mobile BI app on the iPad and Android to view basic SAS® Web Report Studio relational reports. You can manage mobile access permissions through the use of whitelisting and blacklisting devices. Beginning in the 4.4 release, the SAS Enterprise BI offering includes several SAS® Visual Analytics products and components in support of mobile reporting. However, this inclusion does not imply that SAS Visual Analytics is licensed nor does it mean that the full SAS Visual Analytics offering is included. What is included are only the components required to use Enterprise BI with the SAS Mobile app. When deploying SAS Enterprise BI, the SAS Deployment Wizard will prompt for information related to these software components. The `Instructions.html` for the SAS Enterprise BI middle tier may also include a SAS Visual Analytics section. This section is purely informational unless you also license SAS Visual Analytics.

For more information, see the chapter *Mobile Reporting for SAS Web Report Studio* in [SAS® 9.4 Intelligence Platform Web Application Administration Guide](#).

SAS/SECURE is included with Base SAS beginning in SAS 9.4.

The default encryption algorithm is SASProprietary. (Previously, the default was AES). Customers who want to use an alternative algorithm can make a different selection in the SAS Deployment Wizard. Note that for countries with encryption restrictions, the SAS Deployment Wizard shows the SAS/SECURE products in bold, which indicates that these products are in the plan file but not in the order.

THIRD-PARTY INFORMATION

For Third-Party Software information, see [Third-Party Software for SAS® 9.4](#) at <http://support.sas.com/resources/thirdpartysupport/v94/index.html>.

WEB APPLICATION AND HTTP SERVERS

As stated earlier, the middle-tier software includes the SAS Web Server for use as an HTTP server and the SAS Web Application Server for running SAS web applications. A third-party web application server (such as JBoss, WebLogic, WebSphere) is no longer needed or supported.

JAVA RUNTIME ENVIRONMENTS

A Java 7 Java Runtime Environment (JRE) is now provided by SAS and installed by the SAS Deployment Wizard, which is used for all clients by default (for all platforms other than z/OS). Some clients, such as the SAS Deployment Wizard and SAS® Management Console, might experience problems (such as not being able to type in some dialog boxes) because of an Oracle bug that causes some X servers to lose focus when run with Java 7. Additional details are available on the [SAS® 9.4 Support for Additional Software Products](http://support.sas.com/resources/thirdpartysupport/v94/othersw.html) site at <http://support.sas.com/resources/thirdpartysupport/v94/othersw.html>.

Some SAS applications such as SAS® Enterprise Miner™, SAS® Forecast Server, and SAS® Model Manager, are delivered as Java Web Start clients. Java Web Start clients, which are launched by clicking a link in a web page, require a JRE to be installed on the client machine. When using Java Web Start, JRE 1.7 or later needs to be installed on the client machine. It is important to review the information related to applicable third-party JREs for use with Java Web Start. For more information, see the system requirements for your product.

PYTHON

The installation of SAS Visual Analytics includes SAS® Information Retrieval Studio, which in turn requires Python. Python is a third-party software product that is not provided by SAS. On Windows operating environments, the pywin module is also required. This module might not be included in all downloads of Python. If Python is downloaded from python.org, pywin32 must also be downloaded and added to the Python install. Additional details are available on the [SAS® 9.4 Support for Additional Software Products](http://support.sas.com/resources/thirdpartysupport/v94/othersw.html) site at <http://support.sas.com/resources/thirdpartysupport/v94/othersw.html>.

GENERAL CONFIGURATION

SUDO SUPPORT ON UNIX

The SAS Deployment Wizard now allows setuid to run as sudo in specific instances during deployment on UNIX operating environments. On the metadata server machine, if the SAS Installer has sudo, the pop-up prompt to run setuid as root is not presented, and sudo is used to run setuid. If the SAS Installer does not have sudo on a metadata server machine, the SAS Deployment Wizard pauses and presents the classic pop-up prompt to run setuid as root as it has in the past. On server machines where the metadata server is not configured, the SAS Installer will continue to receive the pop-up prompt to run setuid as root, even when the SAS Installer has sudo.

For more information, see [Pre-installation Checklist for External User Accounts for SAS on Windows and UNIX](#) in the [SAS® 9.4 Intelligence Platform Installation and Configuration Guide](#).

MIDDLE-TIER LOG FILES

The location of log files is somewhat different for SAS 9.4 middle tier and middle-tier related features. When configuring multiple managed web application servers, `SASServer[n]` can represent `SASServer1`, `SASServer2`, etc. When configuring only one web application server, `SASServer[n]` always represents `SASServer1`. Entities found on other tiers are listed because the web applications might depend on them to be completely functional.

Webtier Entity	Log location
Web Server	Levl/Web/WebServer/logs
Web Application Server	Levl/Web/WebAppServer/SASServern_1/logs
Web Application	Levl/Web/Logs/SASServern_1
Environment Manager Server	Levl/Web/SASEnvironmentManager/server-5.0.0-EE/logs
Server tier Entity	
WIP Database (postgres)	Levl/WebInfrastructurePlatformDataServer/Logs

Information Retrieval Studio	Levl/Applications/SASInformationRetrievalStudiofor SAS1.5/logs
DIP Job Runner Server	Levl/Web/Applications/SASWIPschedulingServices9.4/ dip/DIPJobRunner.log
Entities on multiple tiers	
Environment Manager Agent	Levl/Web/SASEnvironmentManager/agent-5.0.0-EE/log
Cache locator	Levl/Web/gemfire/instances/ins_41427/gemfire.log
JMS Server	Levl/Web/activemq/data/activemq.log

Be aware that a middle-tier feature, such as the SAS Environment Manager, has agents on each tier. These agents are still deployed in and have logs in folders under `Lev[n]/Web` in the configuration directory as shown above.

If an issue is encountered, always check the web application log first (such as SAS Web Report Studio, SAS Visual Analytics Explorer, and so on), then the Web Infrastructure Platform (WIP) services log, and finally the server log (such as `SASServer1`, `SASServer2`, and so on) itself. The culprit of the issue can often be found in the WIP services log (`Levl/Web/Logs/SASServer1_1/SASWIPServices9.4.log`).

PORTS

TCP ports in the ephemeral port range can be in use by the UNIX operating system and cause configuration failures. The number of TCP ports used in SAS 9.4 is significantly higher than in previous releases. The following error during the Start Web Application Server configuration step is a strong indication of port conflicts:

```
Timeout for Application Server startup has reached before port opened
```

For more information, see [Pre-Installation Checklist for Ports for SAS](#) in [SAS® 9.4 Intelligence Platform Installation and Configuration Guide](#).

SAS ENVIRONMENT URL

During deployment you might be prompted by the SAS Deployment Wizard for the URL location of the SAS environment file. The SAS environment file defines a set of SAS deployments at your site for client applications (such as SAS Enterprise Miner, SAS Forecast Server, and SAS Model Manager) to use. Post-installation tasks associated with this file are no longer necessary now that the `sas-environment.xml` file is automatically deployed on the SAS Web Server. In SAS 9.2, the SAS Environment URL was not applicable for some products that now require it, and the default value for this file has changed since SAS 9.3. For more information, see [Configuring the SAS Environment File](#) in [SAS® 9.4 Intelligence Platform: Middle-Tier Administration Guide](#) as well as information about the SAS environment file in your product specific documentation.

TERMS TO KNOW

Get familiar with the new terms in 9.4. Here are a few.

Cache Locator – used by applications on server-tier and middle-tier machines to locate other members and form a data cache. The Cache Locator is based on VMware vFabric GemFire. For more information, see [SAS® 9.4 Intelligence Platform: Middle-Tier Administration Guide](#) and the Pre-Installation Checklist.

JMS Broker - based on Apache ActiveMQ. SAS middle tier software uses the broker for Java Messaging Services (JMS). For more information, see [SAS® 9.4 Intelligence Platform: Middle-Tier Administration Guide](#).

SAS Deployment Agent - required for deployments that run remote processes. SAS uses the agent to copy content and to perform configuration management operations that are associated with creating new servers and clustering. It is also used for server administration tasks such as deployment backups. For more information, see [SAS Deployment Agents](#) in [SAS® 9.4 Intelligence Platform Installation and Configuration Guide](#).

SAS Environment Manager Server – monitoring and management system for SAS deployments that runs on the middle tier. For more information, see [SAS® Environment Manager 2.1 User's Guide](#).

SAS Environment Manager Agent - runs on each platform (middle tier and server tier) in a SAS deployment. The agent is responsible for discovering software components on its platform, gathering metrics and reporting back to the management server. For more information, see [SAS® Environment Manager 2.1 User's Guide](#).

SAS Web Server - an HTTP server based on VMware vFabric Web Server. For more information, refer to [SAS® 9.4 Intelligence Platform: Middle-Tier Administration Guide](#).

SAS Web Application Server - a lightweight server that provides enterprise-class features for running SAS web applications. The SAS Web Application Server is based on VMware vFabric tc Server. For more information, see [SAS® 9.4 Intelligence Platform: Middle-Tier Administration Guide](#).

CONCLUSION

With any transition, the best advice is to be prepared for what to expect. The SAS documentation provides valuable, detailed information that will guide you to moving to SAS 9.4. Take the time to read the documentation first. Pay careful attention to pre-installation checklists, operating system and product-specific system requirements, installation and configuration guides, administration guides and user's guides.

The information in this paper is intended to supplement existing documentation by calling out key features and providing hints on the various topics to help smooth the transition to SAS 9.4 based on our experiences in SAS Customer Experience Testing.

ACKNOWLEDGMENTS

Special thanks to all members of the Customer Experience Testing team for contributing to the content of this paper.

For consistency between SAS provided material, some of the information is taken directly from SAS 9.4 documentation.

RECOMMENDED READING

For more information, see these resources at

<http://support.sas.com/documentation/onlinedoc/intellplatform/index.html>

- *What's New in SAS 9.4 Intelligence Platform*
- *Migration Focus Area*
- *SAS 9.4 Intelligence Platform: Migration Guide*
- *SAS 9.4 Guide to Software Updates*
- *SAS 9.4 Intelligence Platform: Installation and Configuration Guide*
- *SAS 9.4 Intelligence Platform: Middle-Tier Administration Guide*

For more information on the SAS Deployment Wizard and SAS Deployment Manager, see *SAS Deployment Wizard and SAS® Deployment Manager 9.4: User's Guide* at <http://support.sas.com/documentation/installcenter/94/index.html>.

Also, see this product-specific documentation:

- *SAS Environment Manager 2.1: User's Guide* at <http://support.sas.com/documentation/onlinedoc/sev/index.html>
- *SAS Studio 3.1: Administrator's Guide* at <http://support.sas.com/documentation/onlinedoc/sasstudio/index.html>

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