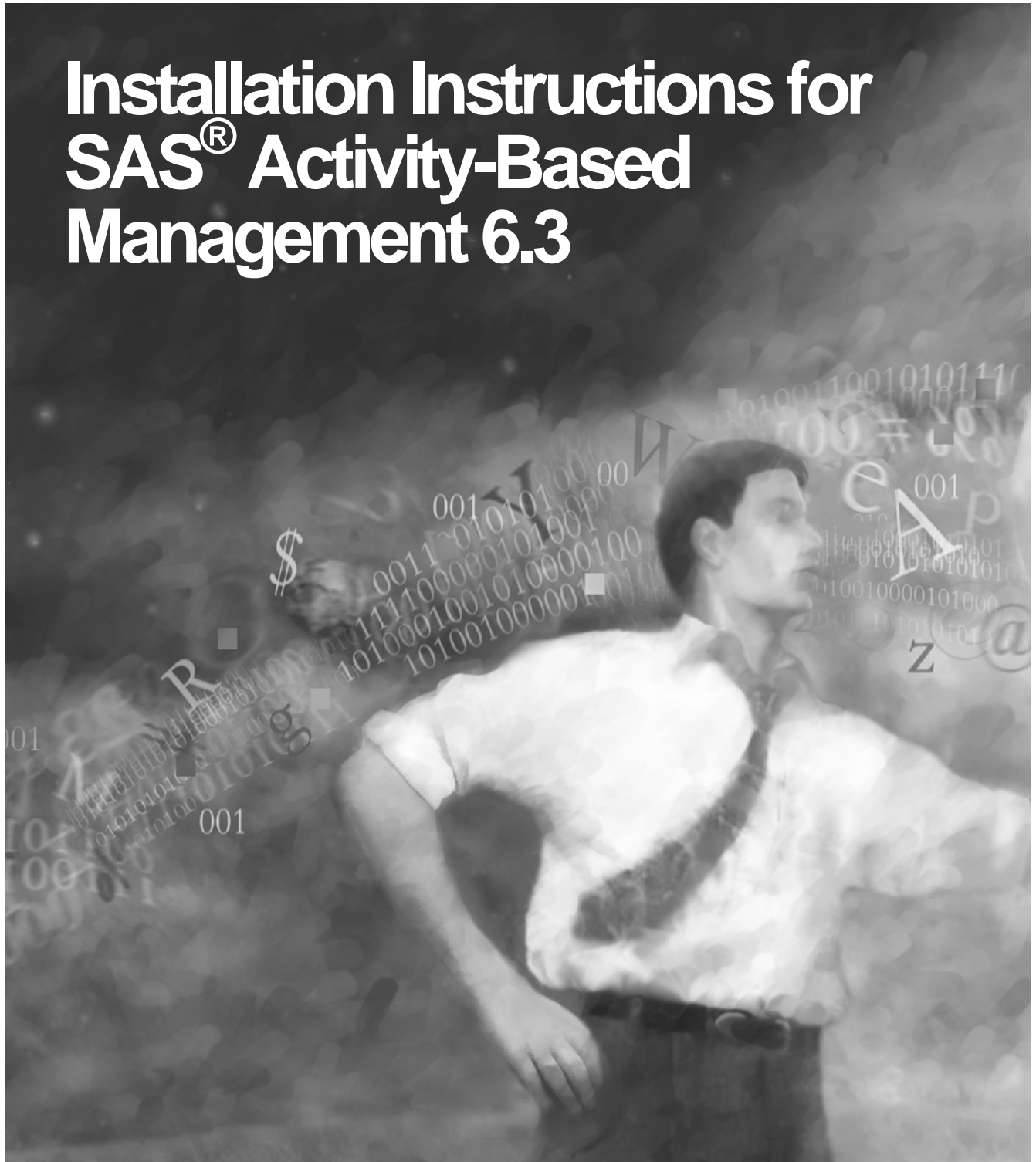




Installation Instructions for SAS® Activity-Based Management 6.3

A black and white photograph of a man in a white shirt and tie, running towards the right. He is looking off to the side with a determined expression. The background is a dark, textured surface with various digital elements overlaid, including binary code (0s and 1s), symbols like a dollar sign (\$), a hash (#), and letters like 'e', 'p', 'z', and '@'. There are also small squares and lines scattered throughout, giving it a high-tech, data-driven feel.

The Power to Know.[®]

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Installation Instructions for SAS Activity-Based Management 6.3

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Chapter 1 – Pre-installation Checklist

Before you start to install or upgrade SAS Activity-Based Management Server, please follow these steps:

1. Review all the items enclosed in your product package.
2. Ensure that your computer meets all the specifications indicated in the System Requirements contained in your product package.
3. The person who installs SAS Activity-Based Management Server must be a user in the local machine Administrators group. Being a member of the Domain Admins group is not sufficient.
4. SAS recommends that you do not install on a computer running Terminal Services in application server mode. Remote administration mode is acceptable. The following note is from Microsoft:

As for BackOffice Servers, it is not recommended that you install Terminal Services in application server mode on a server that is already dedicated to the task of running infrastructure services, such as DNS, WINS, or File and Print, or server applications such as IIS, Exchange or SQL. Client applications running under Terminal Services on these servers can severely impact the performance and scalability of these servers.

Verify the Operating System

1. On the desktop, display the properties for **My Computer**.
2. On the **General** tab, verify that the **System** section lists the operating system and service pack number noted in the System Requirements.
3. If either is not correct, install or upgrade now, then continue with the installation.

Special Considerations for Windows 2003

When installing SAS Activity-Based Management on a Windows 2003 Server operating system, several required components are not included in the default installation of the operating system. The components needed by SAS Activity-Based Management are:

- Application Server
 - Application Server Console
 - ASP.NET
 - Enable network COM+ access
 - Enable network DTC access
 - Internet Information Services (IIS)
 - Common Files
 - Internet Information Services Manager
 - World Wide Web Service
 - Active Server Pages
 - WebDAV Publishing
 - World Wide Web Service
- Message Queuing
 - Common
 - Core Functionality
 - Local Storage

1. Open **Add or Remove Programs** in the **Control Panel**.
2. Choose **Add/Remove Windows Components**.
3. Verify that the components listed above are installed.

Verify the Web Service

1. Open **Computer Management** in the **Control Panel**. On some versions of Windows, you will find **Computer Management** in **Administrative Tools** in the **Control Panel**.
2. On the **Tree** tab, expand **Services and Applications**.
3. If you do not see **Internet Information Services**, IIS is not installed. Install it now, then continue with the installation.
4. Right-click **Internet Information Services** and select **Help**.
5. In **Microsoft Management Console Help**, in the right pane, click the product documentation URL in the first paragraph. A browser window with IIS documentation opens.
6. If you do not see a title that reflects the version noted in the System Requirements, it probably is not installed. Upgrade now, then continue with the installation.

Special Considerations for Windows 2003

When using Windows 2003 Server versions, you must explicitly allow Active Server Pages, ASP.NET 1.1.4322, and WebDAV to operate (the first two are prohibited by default).

1. Open **Administrative Tools** in the **Control Panel**.
2. Choose **Internet Information Services (IIS) Manager**.
3. On the **Tree** tab, expand **<MyComputerName> (local computer)** where **<MyComputerName>** is the name of your computer.
4. Choose **Web Service Extensions**. In the right-hand pane, verify that the above services are allowed.

Note: *The exact version number of ASP.NET may vary depending upon which Service Packs you have installed on your Windows 2003 operating system.*

Verify the Web Browser

1. Start **Internet Explorer**.
2. Select **Help**→**About Internet Explorer**.
3. Verify that the **Version** meets the specification in the System Requirements.

Special Considerations for Windows 2003

When Internet Explorer is installed on Windows 2003 Servers, you must disable the "Enhanced Security" setting (it is enabled by default).

1. Open **Add or Remove Programs** in the **Control Panel**.
2. Choose **Add/Remove Windows Components**.
3. Verify that the box labeled **Internet Explorer Enhanced Security Configuration** is not selected.

Verify Microsoft Message Queuing (MSMQ)

SAS Activity-Based Management will function properly if MSMQ is configured as either an Independent Server or as an Active Directory Integrated Server.

1. Start **Computer Management** in the **Control Panel**.
2. Expand **Services and Applications**.
3. If you do not see **Message Queuing**, it is not installed. Install it now, then continue with the installation.

Verify the Database

SAS Activity-Based Management can operate using Microsoft SQL Server 2000 or Oracle 9.2 as its database for storing models. These databases require proper installation and configuration to ensure proper operation of SAS Activity-Based Management.

1. Perform one of the following:
 - Follow the directions in Appendix C, beginning on page 31, for installing and configuring Oracle 9.2.0.7.0.
 - Follow the directions in Appendix D, beginning on page 37, for configuring Microsoft SQL Server 2000.

Chapter 2 – Beginning the Installation Process

To start the installation process, complete the following steps:

1. Close all non-essential applications.
2. On the computer that will be the SAS Activity-Based Management Server, log in as an administrator.

Install the SAS System

Follow the instructions enclosed in your Installation Kit to install the SAS 9.1.3 Foundation. SAS Setup will ask for your SAS Installation Data (SID), which is sent to your site's SAS Installation Representative by e-mail. The Customer Key and Order number can be found in the SAS Installation Kit, under the SAS Order Information tab on the SAS Order Information page.

SAS Installation Data (SID) contains license information and installation scripts that customize the installation for your site. SAS Installation Data is sent to your SAS Installation Representative in an e-mail in the form of a text file attachment. In addition to the license data for the SAS Foundation, the SID also contains license data for SAS Activity-Based Management. Without the SID, and its embedded license data, SAS Activity-Based Management will not operate.

If you want to run SAS Activity-Based Management on an earlier release SAS 9.1.2 Foundation, then you will also need to install the SAS Hot Fix SN-006001. To install this Hot Fix, browse to <http://support.sas.com/techsup/unotes/SN/006/006001.html> and follow the instructions.

Tip: *SAS Activity-Based Management 6.3 provides new product integration features that can only be accessed using SAS 9.1.3 SP4. These new features simplify sharing data throughout the SAS Enterprise Business Intelligence platform.*

Install SAS Activity-Based Management Server

In order to build the databases during the installation, you will be asked for a user name and password for a user who has SQL Server administrator privileges. Depending on your organization's database policies, you may need to enter this information.

1. Insert the CD-ROM into the drive.

The installation media is AutoPlay-enabled. If your computer has the AutoPlay function enabled, the installation process begins automatically when you insert the CDROM into the drive. If your computer has the AutoPlay function disabled, browse the CD-ROM, and double-click the file `start.exe`, which is at the root of the CD-ROM.

2. Click **Install SAS Activity-Based Management**.
3. Follow the instructions on the screen.
4. If you are asked to select the Web site on which to install, do not select the administrator's Web site.
5. When you are asked if you would like to install the SAS Activity-Based Management Server databases, the necessary steps depend on the database you are using.
 - a. If you are using a Microsoft SQL Server database:
 - Choose **SQL Server** for the **Type**
 - Enter the computer name that Microsoft SQL Server is installed on.
 - Perform one of the following:

- Enter an SQL Server administrator **Name** and **Password**.
 - Select **Use current login credentials**.
- b. If you are using an Oracle 9i database:
 - Choose **Oracle** for the **Type**
 - Enter the **Alias** for the Oracle instance
 - Perform one of the following:
 - Enter an Oracle administrator **Name** and **Password**.
 - Select **Use current login credentials**.
 - Select **Use as Schema** if the same log in credentials can be used for the Schema as well. If you do not choose **Use as Schema**, you will be prompted for your Schema login credentials.
- 6. If you are asked if you want to reboot now, click **Yes**.
- 7. If you want to install one of the available Language Packs, run the installer by double-clicking `LanguagePackInstaller.exe`, located in the `LanguagePacks` directory at the root of the CD-ROM. This installer will prompt you for which language you want to install.

Install SAS Activity-Based Management Client

The SAS Activity-Based Management Client is installed from a web page on the SAS Activity-Based Management Server that is created when the Server is installed.

1. For users who will be installing over a LAN, the URL is
`http://<SAS Activity-Based Management Server name>/SasSolutions/ABM/`
where `<SAS Activity-Based Management Server name>` is the name of the computer on which the SAS Activity-Based Management Server is installed.

Example: `http://polaris/SasSolutions/ABM/`
Users might need to enter a user name, password, and domain.
2. For users who will be installing over the Internet, the URL is
`http://<SAS Activity-Based Management Web site>/SasSolutions/ABM/`
where `<SAS Activity-Based Management Web site>` is a fully qualified domain name.

Example: `http://polaris.mycompany.com/SasSolutions/ABM/`
3. Choose the desired locale for verifying and installing any necessary prerequisites. This is accomplished by selecting a language from the **Language of choice** drop list at the top-right of the Client installation home page. The selected language will be used to determine what locale to use when installing the prerequisites. For example, if you are installing on a German version of Windows, a language choice of German ensures that a German version of Adobe Acrobat will be installed if needed.
4. Optionally install a Language Pack. This step may be omitted. This is accomplished by selecting **Install Language Pack** from the menu on the left side of the Client installation home page.

Set up Roles and Users in SAS Activity-Based Management Administrator

To start SAS Activity-Based Management Administrator, select **Start**→**Programs**→**SAS**→**SAS Activity-Based Management 6.3**→**SAS Activity-Based Management Administrator**.

If you cannot log in to SAS Activity-Based Management Administrator, you have not been assigned as an SAS Activity-Based Management administrator. The installation program automatically set the person who installed SAS Activity-Based Management as an administrator. Ask that person to make the changes or to set you as an administrator.

For instructions on how to set up roles and users, refer to the online help for SAS Activity-Based Management Administrator.

Chapter 3 – Upgrade from a Previous Version

The upgrade steps for SAS Activity-Based Management are explained in the sections that follow. Before upgrading, please read all the information in this section.

Note: All SAS Activity-Based Management client computers must also be upgraded. Additionally, any remote installations of the SAS Activity-Based Management Administrator must also be updated.

Back Up Databases

SAS recommends you back up the SAS Activity-Based Management databases whenever you upgrade. If you are using Microsoft SQL Server, you must back up the OEAdmin and OEModels databases. If you are using Oracle, you must back up the schema you created for Activity-Based Management during installation.

Warning: Backups are version-specific. Do not restore the current SAS Activity-Based Management databases from a backup created from a previous version. For more information, contact SAS Technical Support.

Before backing up the databases, verify that no one is using SAS Activity-Based Management on the server that you are upgrading.

Tip: Because back-ups are version-specific, include the version number in the back-up name.

Uninstall the Previous Version of SAS Activity-Based Management Server

1. On the Server, use **Add/Remove Programs** in the **Control Panel** to remove **SAS Activity-Based Management Administrator**.
2. On the server, use **Add/Remove Programs** in the **Control Panel** to remove **SAS Activity-Based Management Server**.
3. When you are asked if you want to delete the SAS Activity-Based Management databases:
 - If you are upgrading models that exist, click **Don't Delete**. This saves the databases so that they can be upgraded later.
 - If your users want to remove the current databases and use the latest version of SAS Activity-Based Management with new databases, click **OK**.
4. Reboot your computer.
5. Verify that the SAS Activity-Based Management folders have been deleted by the uninstallation process. These folders are typically located at: C:\Program Files\SAS\Activity-Based Management Solution and at C:\Program Files\Common Files\SAS\Activity-Based Management. If they are present, delete them and their contents.

Warning: It is imperative that you reboot your computer prior to installing SAS Activity-Based Management. Failure to reboot may cause errors during the installation of SAS Activity-Based Management or may cause some components to install improperly.

Install the Latest Version of SAS Activity-Based Management Server

During the installation, to build or upgrade the databases you will be asked for a user name and password for a user who has database administrator privileges. Depending on your organization's database policies, you may need to enter it.

After completing the installation, you might be asked to reboot the server.

1. Insert the CD-ROM into the drive.

The installation media is AutoPlay-enabled. If your computer has the AutoPlay function enabled, the installation process begins automatically when you insert the CD-ROM into the drive. If your computer has the AutoPlay function disabled, browse the CD-ROM, and double-click the file `start.exe`, which is at the root of the CD-ROM.

2. Click **Install SAS Activity-Based Management**.
3. Follow the instructions on the screen.
4. When you are asked to select the Web site on which to install, do not select the administrator's Web site.
5. When you are asked if you would like to install the SAS Activity-Based Management Server databases, the necessary steps depend on the database you are using:
 - a. If you are using a Microsoft SQL Server database:
 - Choose **SQL Server** for the **Type**
 - Enter the computer name that Microsoft SQL Server is installed on.
 - Perform one of the following:
 - Enter an SQL Server administrator **Name** and **Password**.
 - Select **Use current login credentials**.
 - b. If you are using an Oracle 9i database:
 - Choose **Oracle** for the **Type**
 - Enter the **Alias** for the Oracle instance
 - Perform one of the following:
 - Enter an Oracle administrator **Name** and **Password**.
 - Select **Use current login credentials**.
 - Select **Use as Schema** if the same log in credentials can be used for the Schema as well. If you do not choose **Use as Schema**, you will be prompted for your Schema login credentials.
6. If you are *upgrading* models from a previous version of SAS Activity-Based Management, click **Upgrade**.
7. If you want to remove the current databases and use the latest version of SAS Activity-Based Management with *new* databases, click **Reinstall**. New databases are created and previously created data will no longer be available.

Warning: If you choose **Reinstall**, all data in your existing SAS Activity-Based Management databases will be deleted.

8. If asked if you want to reboot now, click **Yes**.
9. If you want to install one of the available Language Packs, run the installer by double-clicking `LanguagePackInstaller.exe`, located in the `LanguagePacks` directory at the root of the CD-ROM. This installer will prompt you for which language you want to install.

Warning: You should exercise caution when applying the Language Pack to a server that has existing contents in its database. The Language Pack installer changes the names of the predefined folders in the Workspace Manager to their localized equivalents. This alters the pathname of all workspace items. While the SAS Activity-Based Management application will operate correctly, any stored configurations for Import, Export, creating Reports, etc. will now contain incorrect paths and will need to be manually edited to update the path information.

Uninstall the Previous Version of SAS Activity-Based Management Client

Before you can run your new SAS Activity-Based Management 6.3 software, you must also uninstall any previous versions from the Client's computer.

1. On the Client, use **Add/Remove Programs** in the **Control Panel** to remove **SAS Activity-Based Management**.
2. On the Client, use **Add/Remove Programs** in the **Control Panel** to remove **SAS Activity-Based Management Administrator** if it is present.
3. On the Client, use **Add/Remove Programs** in the **Control Panel** to remove **SAS Activity-Based Management Visualization Components**. This is very important since a new version of these components is provided with SAS Activity-Based Management 6.3.
4. Reboot your computer.

Warning: *It is imperative that you reboot your computer prior to installing SAS Activity-Based Management. Failure to reboot may cause errors during the installation of SAS Activity-Based Management or may cause some components to install improperly.*

Install SAS Activity-Based Management Client

Install the SAS Activity-Based Management Client as outlined in the section entitled "Install SAS Activity-Based Management Client" in Chapter 2.

Chapter 4 – After Installation or Upgrade

IIS Settings

Do not change IIS settings for the SasSolutions virtual folder. If you change these settings, SAS Activity-Based Management will not operate properly.

Notify Users of the URL from Which to Install SAS Activity-Based Management

Ensure that you notify users that previously installed versions of SAS Activity-Based Management must be upgraded.

1. For users who will be installing over a LAN, the URL is

`http://<SAS Activity-Based Management Server name>/SasSolutions/ABM/`

where <SAS Activity-Based Management Server name> is the name of the computer on which the SAS Activity-Based Management Server is installed.

Example: `http://polaris/SasSolutions/ABM/`

Users might need to enter a user name, password, and domain.

2. For users who will be installing over the Internet, the URL is

`http://<SAS Activity-Based Management Web site>/SasSolutions/ABM/`

where <SAS Activity-Based Management Web site> is a fully qualified domain name.

Example: `http://polaris.mycompany.com/SasSolutions/ABM/`

Appendix A – SSL Configuration Guide

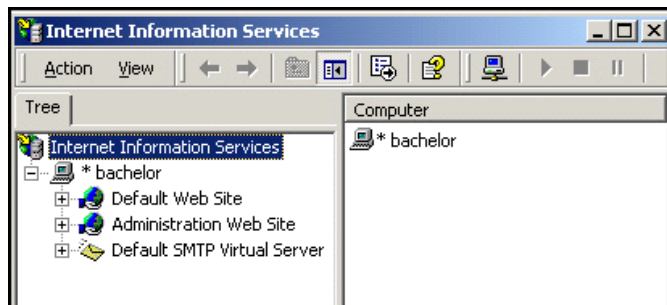
The purpose of this appendix is to provide examples of the steps involved in setting up SSL on the SAS Activity-Based Management Server. It is not a comprehensive document covering all possible ways to configure SSL and should not be used as an exhaustive implementation guide. For more information, refer to the proper Microsoft documentation and be sure to consult with your local IT Administrator.

Areas Covered

- Creating a certificate request
- Installing the security certificate
- Enabling SSL for ABM
- Connecting to SAS ABM via HTTPS and Verifying Certificate
- Importing Server Security Certificate through the Certificate Properties
- Importing Server Security Certificate through the Microsoft Management Console

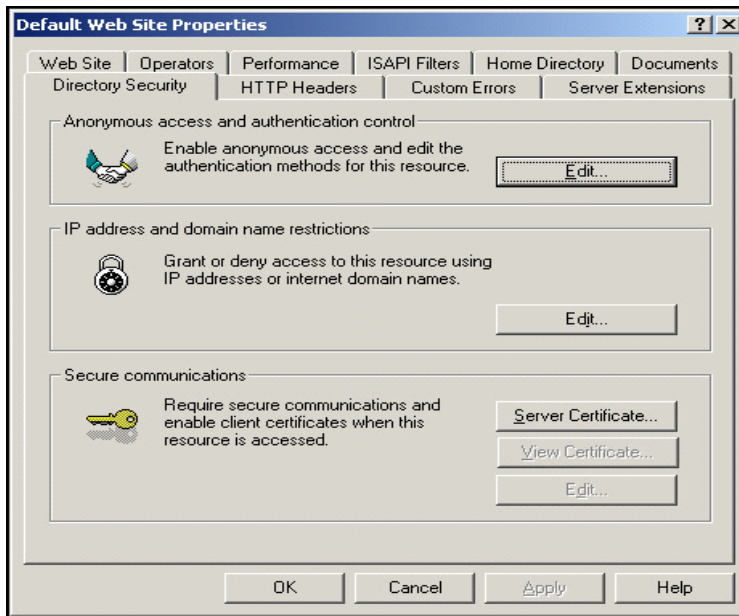
Creating a Certificate Request

1. Open **Internet Information Services (IIS)** in **Administrative Tools** in the **Control Panel**.
2. In the window that opens, expand the targeted Web Server and then the Web site where SAS Activity-Based Management Server is installed. In most cases, this will be Default Web Site.

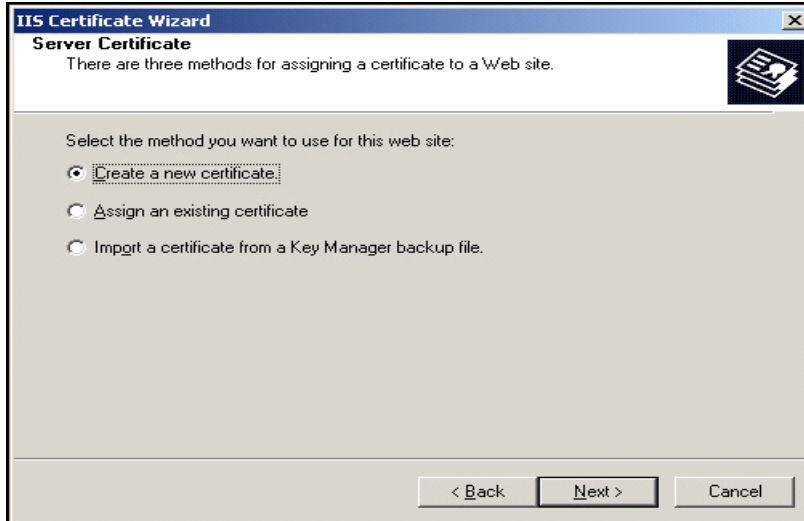


3. Right-click the Web site where SAS Activity-Based Management is installed and select **Properties**. The **Web Site Properties** window opens.

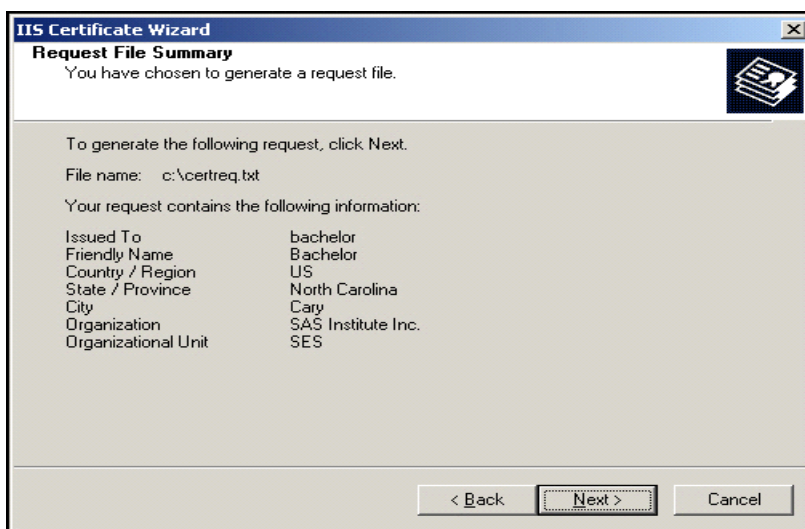
4. Select the **Directory Security** tab and then click the **Server Certificate** button in the **Secure communications** area.



5. The IIS Certificate Wizard is invoked and displays a welcome screen. Click **Next** to continue.
6. Step two of the wizard provides the options shown below. Select **Create a new certificate** and click **Next**.



7. In the next window, select **Prepare the request now, but send it later**, and click **Next**.
8. In the next window, fill in the name for the new certificate and select the bit length of the encryption key, then click **Next**.
9. In the next window, fill in organizational information, then click **Next**.
10. In the next window, fill in the common name of your Web site, then click **Next**.
11. In the next window, fill in geographical information, then click **Next**.
12. In the next window, create a file name for the certificate request, then click **Next**.
13. In the next window, confirm the information, and click **Next** to create the certificate request.



14. At this point the certificate request should be sent to a Certification Authority (CA) such as Verisign. They will provide you with a valid security certificate.

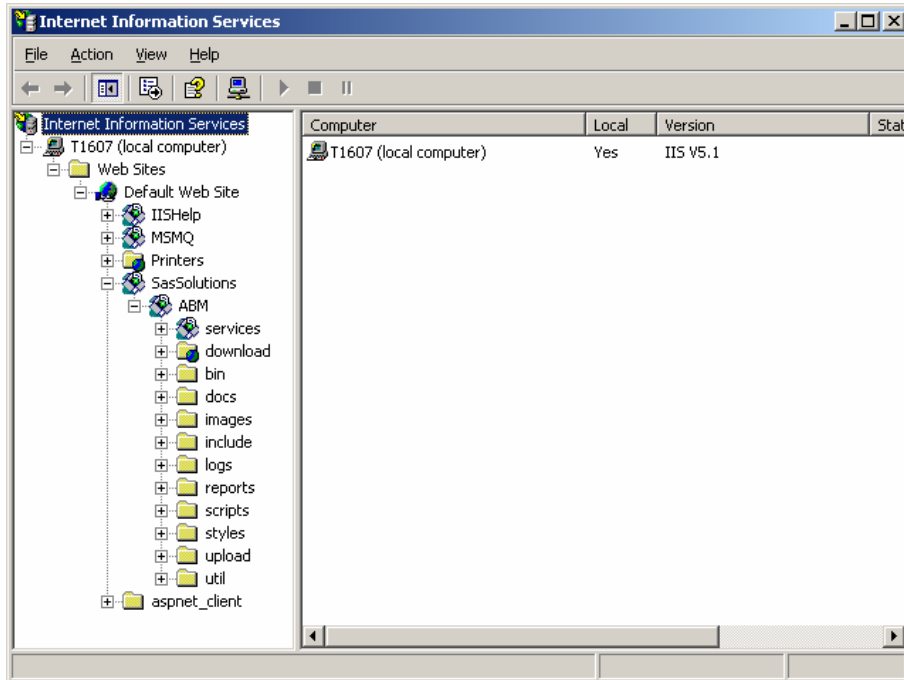
Installing the Security Certificate

1. Open IIS by going to **Start**→**Programs**→**Administrative Tools**→**Internet Information Services**.
2. Expand the targeted Web Server and then the Web site where SAS Activity-Based Management Server is installed. In most cases, this will be the Default Web Site.
3. Right-click the Web site where SAS Activity-Based Management is installed and select **Properties**. The **Web Site Properties** window opens.
4. Select the **Directory Security** tab and then click the **Server Certificate** button in the **Secure communications** area.
5. The IIS Certificate Wizard is invoked and displays a welcome screen. Click **Next** to continue.
6. In the next window, select **Process the pending request and install the certificate**, then click **Next**.
7. In the next window, either fill in the path and file name or browse to the file which contains the certificate authority's response. When the path name is correct, click **Next**.

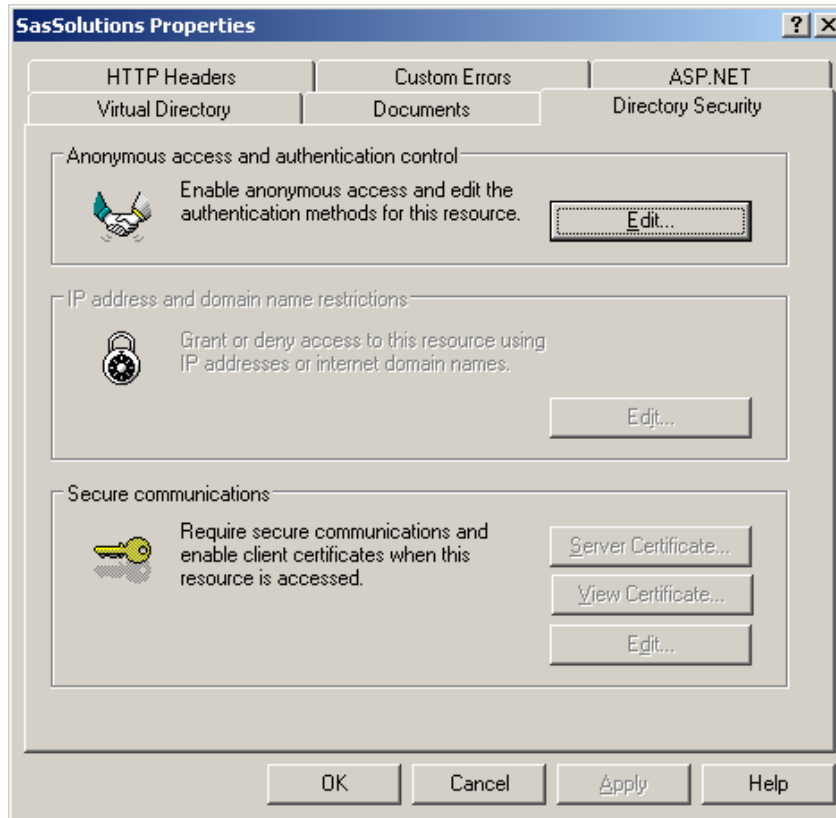
8. Review the information and click **Next** to install the certificate.
9. Click **Finish** to complete the Web Server Certificate Wizard.

Enabling SSL for SAS Activity-Based Management

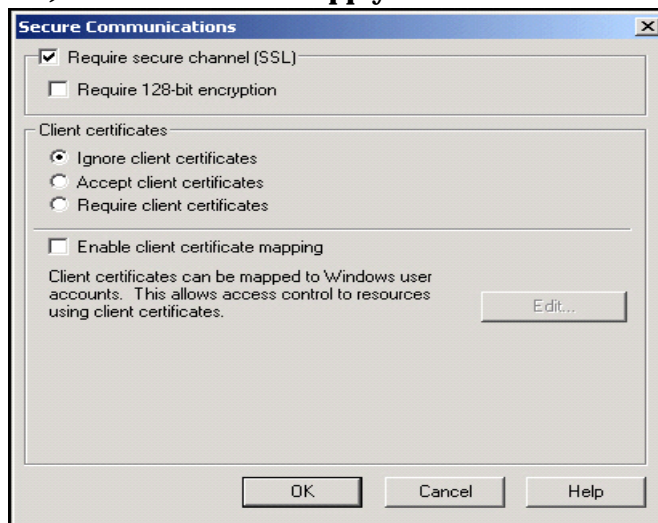
1. Open IIS.
2. Expand the targeted Web Server and then the Web site where SAS Activity-Based Management Server is installed. In most cases, this will be the Default Web Site.
3. Right click on the SasSolutions virtual directory and select **Properties**.



4. The **SasSolutions Properties** window opens. Select the **Directory Security** tab, and click the **Edit** button located in the **Secure communications** area.



5. The **Secure Communications** window opens. Check the box titled **Require Secure Channel (SSL)** and click **OK**. Click **Apply** in the **SasSolutions Properties** window and then click **OK**



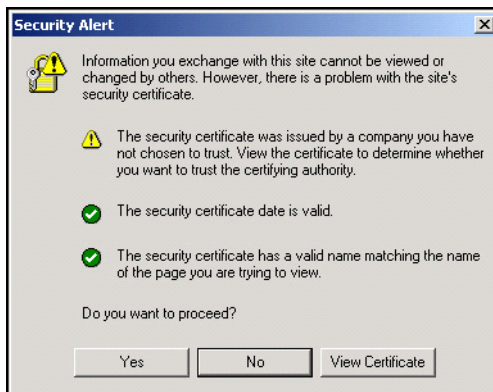
Connecting to SAS Activity-Based Management via HTTPS and Verifying Certificate

1. Attempt to log in to the SAS Activity-Based Management Administrator or SAS Activity-Based Management Client via HTTPS. If the login fails and the following error is presented then a problem with the server security certificate most likely exists on the local web browser.

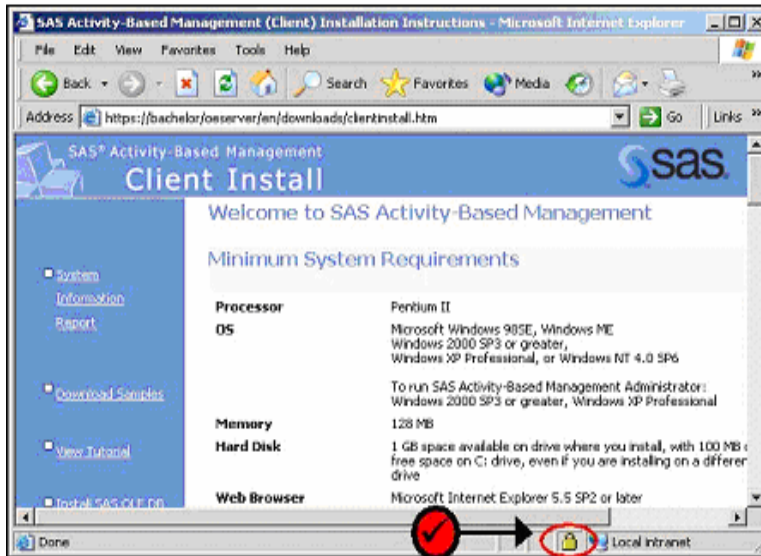


2. To verify the certificate is installed and working properly open Internet Explorer and browse the SAS Activity-Based Management Server location (for example: <https://Bachelor/SasSolutions>).

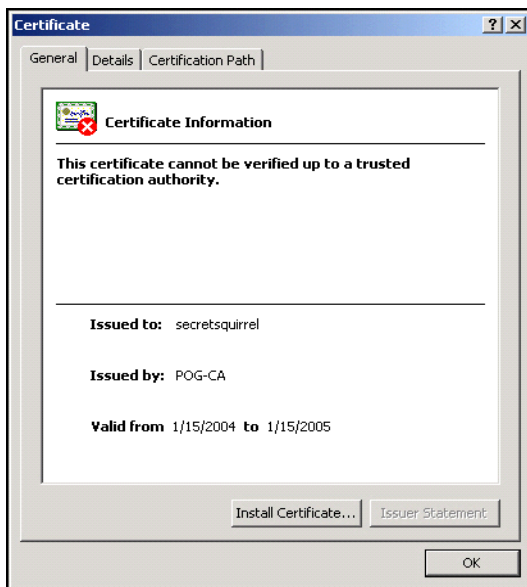
A **Security Alert** will most likely be presented. Click **View Certificate** to bring up the Certificate properties.



If you failed to get the alert or selected **Yes** then you can view the Certificate properties by double-clicking on the yellow lock embedded in the lower right hand corner of the Web browser.



3. Your certificate properties should be displayed. Look for a red X as seen below and an accompanying message regarding verification of the certification authority. Select the **Certification Path** tab.



4. This should display the Certification Path, which includes the root certificate. Odds are that if the certificate cannot be verified then the root certificate cannot be verified either. The security certificate and root certificate will need to be imported if this problem exists. See “Importing the Server Security Certificate” section below for details on how to import the certificate.

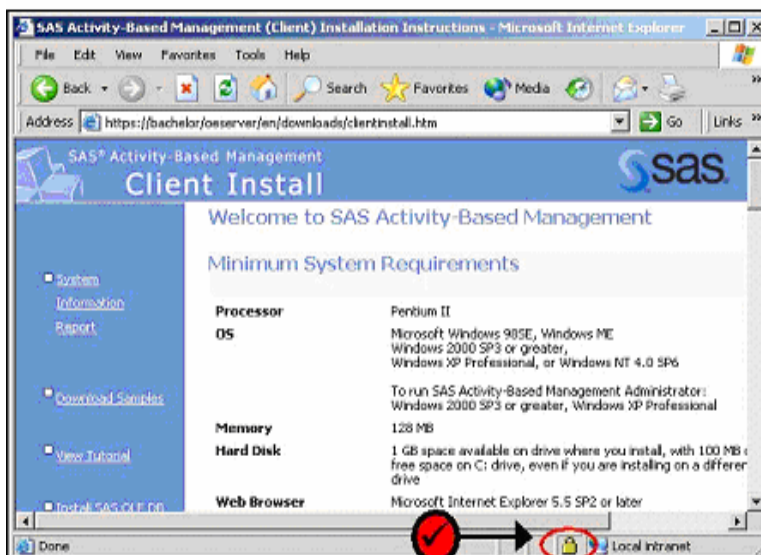


Importing the Server Security Certificate

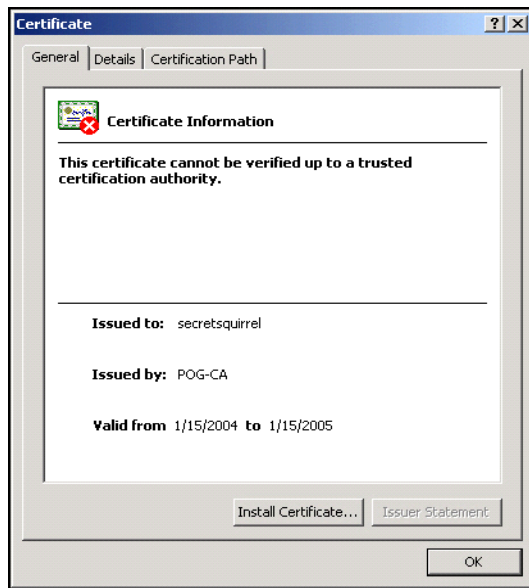
Importing the Server Security Certificate or Root Certificate can be done two ways. The first way is through the Certificate Properties dialog but has proven to not always succeed. The second way is through the Microsoft Management Console (MMC).

Using Certificate Properties

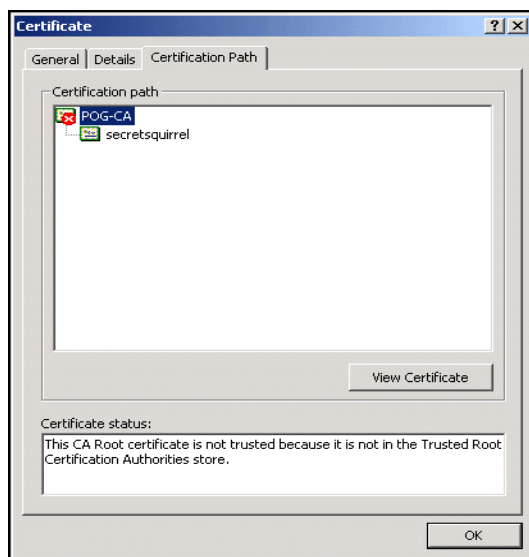
1. To open the **Certificate** window, launch the Client Install page and double-click on the yellow lock embedded in the lower right-hand corner of the Web browser.



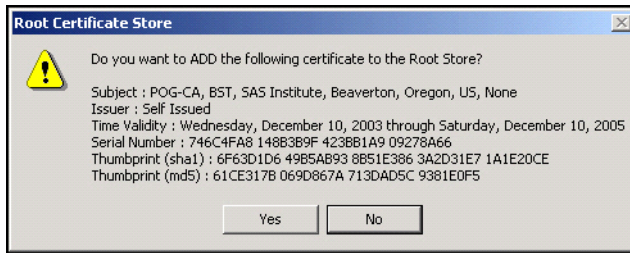
2. Once the **Certificate** window opens, click the **Install Certificate...** button to launch the **Certificate Import Wizard**.



3. Click **Next** on the first screen of the Certificate Import Wizard.
4. At the next window, make no changes and click **Next**.
5. Review the information in the next window and click **Finish** to complete the **Certification Import Wizard**.
6. Click **OK** at the confirmation message to complete the certificate import.
7. Select the **Certification Path** tab to display the Root Certificate and then double-click the Root Certificate (the top level certificate).



8. The Root Certificate properties will be displayed. Click **Install Certificate** and repeat steps 4-7. Toward the end you should be presented with a screen like the one below, if so select Yes and complete the import. If not the import most likely failed and the certificate will need to be installed via MMC.



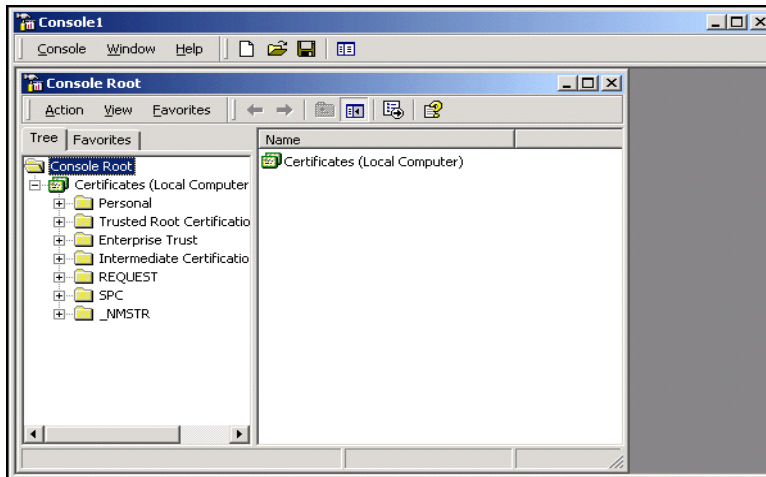
Using the Microsoft Management Console

If problems still occur after importing the certificate through the Certificate Properties, you may need to import the certificate through the Microsoft Management Console (MMC). To add the Certificates Snap-In to MMC, see Microsoft's documentation at

<http://www.microsoft.com/technet/prodtechnol/windows2000serv/howto/mmcsteps.mspx>.

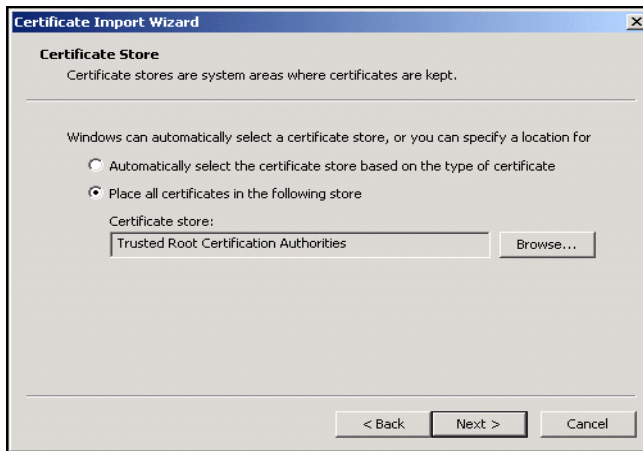
To complete this process, you must have access to the server security certificate and the root certificate.

1. Open the MMC, which includes the Certificates Snap-In. Right-click **Trusted Root Certification**, select **All Tasks** and then select **Import** to initiate the Certificate Import Wizard.

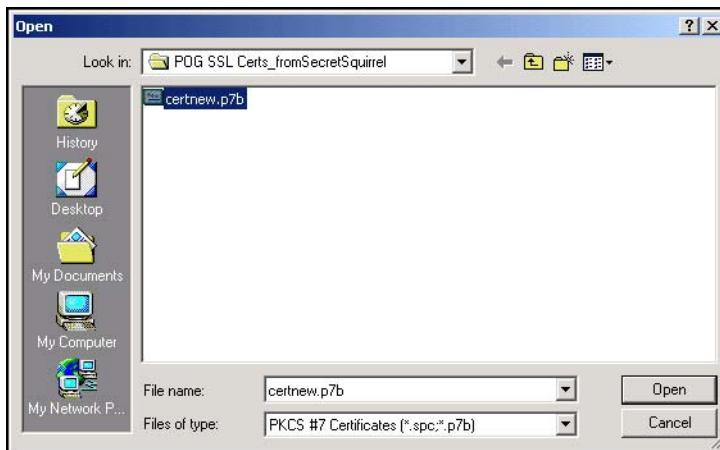


2. Click **Next** at the Welcome screen.
3. At the next window, browse to the location of the server security certificate, which will most likely be a .cer file. Once you have entered the location of the server security certificate, click **Next**.

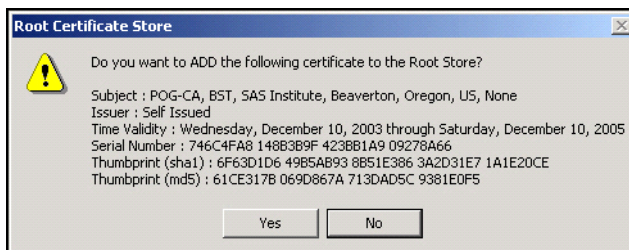
4. At the next window, select the default location and click **Next**.



5. At the next window, click **Finish** to complete the Certificate Import Wizard. When the confirmation window opens, click **OK**.
6. Repeat steps 1 through 6, except this time at step 3, select the root certificate (which will most likely be a .p7b file).



7. Toward the end of the certification import a screen like the one below should appear. Click **Yes** and finish importing the certificate.



8. Once this is complete, you should be able to view the certificate or root certificate properties without any red Xs. The Activity-Based Management Administrator or SAS Activity-Based Management Client should now be able to successfully log in to the SAS Activity-Based Management Server via HTTPS from this machine.

Appendix B – Working with SAS/SHARE

Setting Up a Simple SAS/SHARE Server

You can set SAS/SHARE to run as a Windows service or as a running EXE server. We will keep it simple by running the SAS script as an EXE server.

1. Open the server console (in this example, the server is `cornell.na.sas.com`).
2. Create an empty folder in `c:\` and call it `sas_lab`. We will want to have `c:\sas_lab` as the default Library for this example.
3. Copy the following basic SAS/SHARE script to a blank Notepad and save it as `c:\sas_lab\share.sas`.

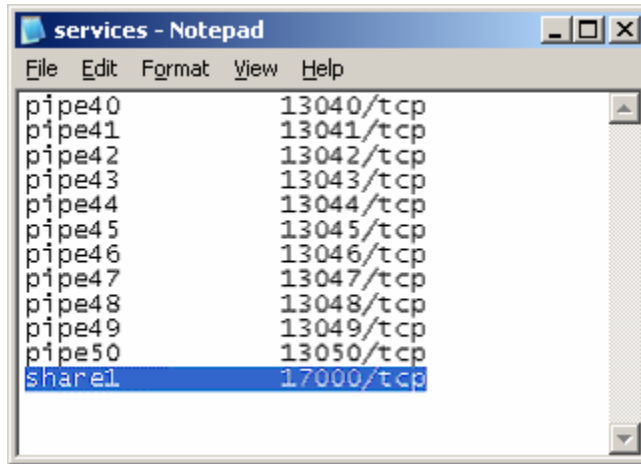
```
/* share.sas */
options comamid=tcp;
libname sas_lab 'c:\sas_lab';
proc server id=share1 authenticate=optional;
run;
```

Note: `libname` *should not exceed 8 characters*.

4. Create the `share.sas` shortcut (i.e., `C:\Program Files\SAS Institute\SAS\V8\sas.exe C:\sas_lab\share.sas`) and drop it to the primary user's Startup folder. This will autoload the script each time this user logs in to the console.

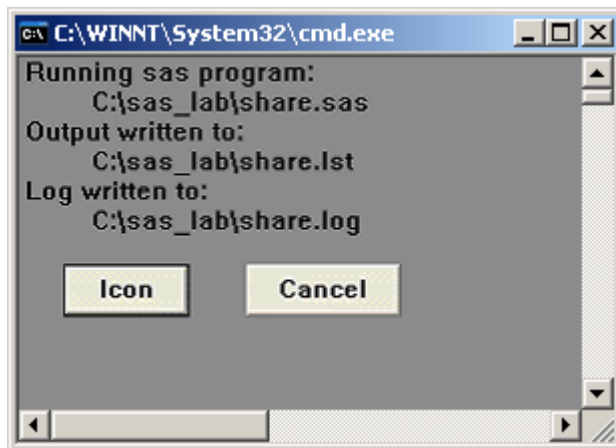


5. Go to the SAS/SHARE server's services file (typically in the `c:\winnt\system32\drivers\etc\` folder) and reserve a *unique* port for our share1:



Important: If you put the line at the very end of the services file, make sure you **put a carriage return at the end of the line.**

6. Double-click on the *shortcut* file. If you've followed these steps correctly, you should see a Window screen that looks like the following:



Setting Up a Simple SAS/SHARE Client

It is important to understand that when we refer to the “client”, we’re not just referring to the end-user desktops. In the context of SAS Activity-Based Management, the SAS Activity-Based Management Server *is* a “SAS/SHARE client,” and as such the server must have the correct SAS/SHARE client configuration.

It is not difficult to set your client (or your “server” client) to talk to the SAS/SHARE server. It involves primarily two steps:

1. Each SAS/SHARE Client services file (typically in `c:\winnt\system32\drivers\etc\` folder) must contain the SAS/SHARE ID and the reserved tcp port (see “Setting Up a Simple SAS/SHARE Server” above).
2. Each SAS/SHARE Client must install **SAS/SHARE 9.1 (or higher) OLE DB Provider, sasoledb.exe**. This file can be installed from the List of Prerequisites web page on the SAS Activity-Based Management Server that is created when the Server is installed. It is also bundled as part of the SAS 9.1 CDs.

Note: *SAS Activity-Based Management 6.3 requires SAS/SHARE Data Provider 9.1 to do a direct Import/Export in SAS Datasets. **The SAS Server itself does not have to be 9.1—it can be SAS 8 or higher.** For example, you can use the SAS System, Release 8.2 with SAS/SHARE Data Provider 9.1 (see the section, “Validating the SAS/SHARE Server,” below).*

Validating the SAS/SHARE Server

This is really the testing phase. We want to make sure that our simple SAS/SHARE server is able to process requests remote SAS clients. This includes other SAS servers and SAS desktop tools such as SAS Enterprise Guide.

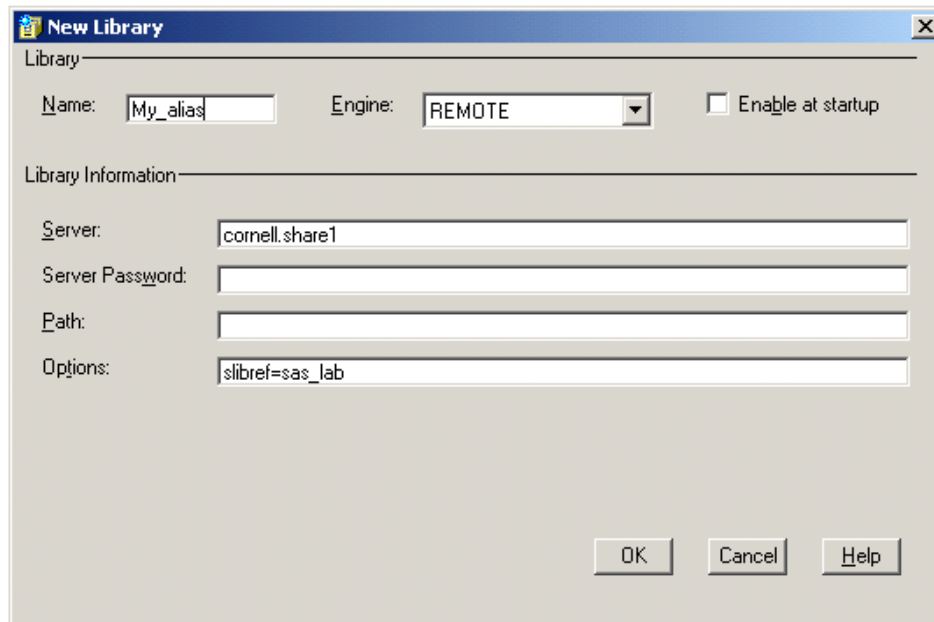
You can skip this section if you don’t anticipate the need for two or more separate SAS servers talking to one another in your ETL process.

From a separate SAS machine, let’s validate Share1.

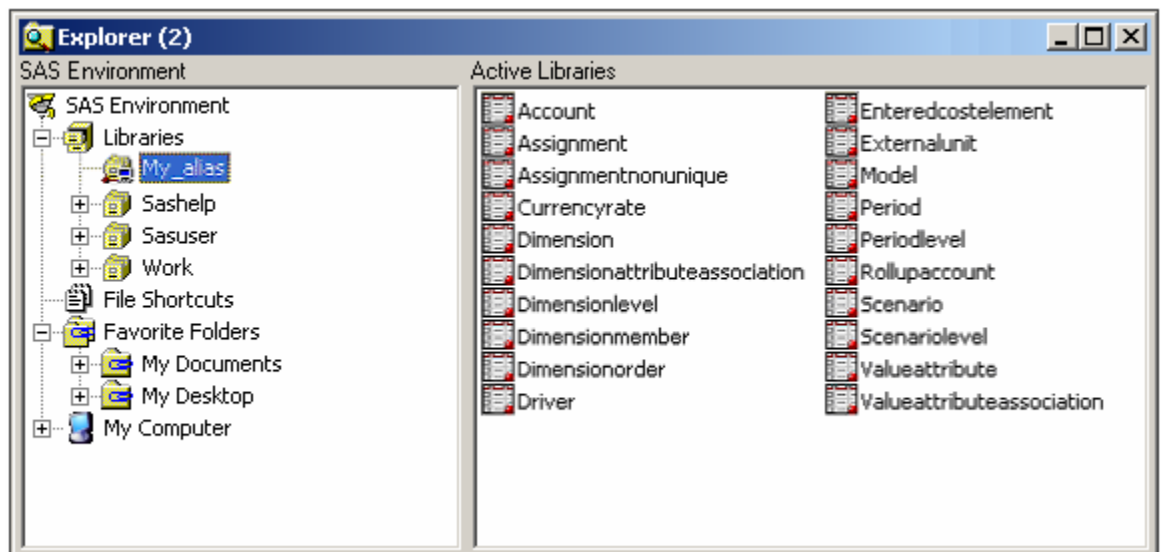
1. Launch SAS.
2. You can use the Editor to run:

```
libname my_alias remote server=cornell.share1 slibref=sas_lab;
```

Alternatively, you can run it through the “New Library” GUI:



If you've set Share1 server correctly, you should be able to see the remote library "My_Alias" through SAS Explorer. This is basically Cornell server's c:\sas_lab folder.



Appendix C – Installing and Configuring Oracle

This appendix outlines the proper Oracle installation settings for SAS Activity-Based Management.

Install Oracle on the Database Server

Step	Wizard Page	Comments
1	Welcome	Click Next .
2	File Location	You must select both the source and destination for installing the Oracle database on your computer. Click Next .
3	Available Products	Choose the option Oracle9i Database 9.2.0.1.0 and click Next .
4	Installation Types	Choose option Enterprise Edition and click Next .
5	Database Configuration	Choose Transaction Processing and click Next .
6	Oracle Services for Microsoft Transaction Server	The default Port Number of may be changed if desired. Click Next .
7	Database Identification	The default Oracle values are acceptable, however it is suggested that the values be changed to reflect this server's use for SAS Activity-Based Management. For example, a Global Database name of " sasabm.domain " (where <i>domain</i> is the name of the domain the server belongs to) and a SID of " sasabm " would be appropriate. Click Next .
8	Database File Location	The default value c:\oracle\oradata may be changed if desired. Click Next .
9	Database Character Set	Choose Use Unicode (AL32UTF8) as the Character Set . Click Next .
10	Summary	Click Install to begin the installation process.
11	Install	Installation may open and close other windows on the desktop until the Database Configuration Assistant displays.
12	Database Configuration Assistant	Enter passwords that adhere to your site's security policy. This password will be used later to log into Oracle and define schemas. Click Next .
13	End of Installation	Click Exit .

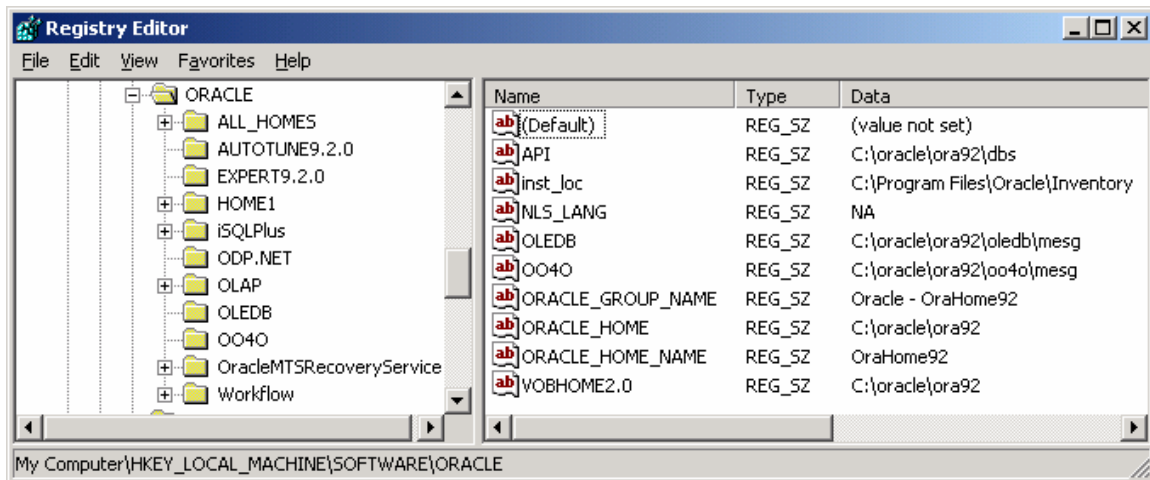
Install Oracle Patch 9.2.0.7.0

The Oracle patch 9.2.0.7.0 is required on both the Oracle database server and also the SAS Activity-Based Management application server (if separate computers are used). This patch resolves known problems with the default Oracle 9.2 installation.

Warning: Do not install the updated **Oracle ODBC Driver 9.2.0.7.0**. It contains a bug that will prevent proper operation with SAS Activity-Based Management.

Step	Wizard Name	Comments
1	Welcome	Click Next .
2	File Location	You must select both the source and destination for installing the Oracle database on your computer. The destination should be identical to the one used when installing Oracle 9i. Click Next .
3	Available Products	Choose Oracle Service for Microsoft Transaction Server 9.2.0.7.0 and click Next .
4	Summary	Click Install to begin the installation process.
5	Install	Installation runs until the End of Installation wizard page displays.
6	End of Installation	Click Exit .

After completing both the Oracle server 9.2.0.1.0 and Oracle patch 9.2.0.7.0 installations, verify that HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE\ORACLE_HOME is pointing to the correct location. For example:



Note: Oracle un-installation may not delete all the Oracle related registry folders and entries. When upgrading from one version to another of Oracle, it is advisable to delete any remaining Oracle-related registry folders and entries.

Verify Permissions

The SAS Activity-Based Management application uses the OraOLEDb.Oracle driver to connect and exchange data with the Oracle database. This driver is installed in the %ORACLE_HOME% folder. Correct permissions are set on this folder when the Oracle database is installed. However, due to new security settings in Microsoft's Windows operating systems, these permissions may need to be re-enabled. If these permissions are not set properly, the SAS Activity-Based Management application may return errors such as: "Oracle provider is not registered" or "Unable to access Oracle provider".

To verify that the required permissions are set properly, follow these steps:

1. Open **Windows Explorer** and find the %ORACLE_HOME% folder. The location of this folder is identified in the registry (as outlined above) and by default is at C:\ Oracle\Ora92.
2. Select the %ORACLE_HOME% folder, right-click on it and select **Properties**.
3. Select the **Security** tab.
4. Select **Authenticated Users**. Verify that the **Allow** checkbox is selected for "Read & Execute", "List Folder Contents", and "Read" privileges.

For more information, browse to <http://forums.asp.net/331004/ShowPost.aspx>.

Create the Activity-Based Management Schemas

The next step for preparing the Oracle database server is to create the required Oracle schemas for the SAS Activity-Based Management databases.

1. On your Oracle database server, log into the **Oracle Enterprise Manager Console**. Choose the **Standalone** option and click **OK**.
2. Log into the **Oracle Enterprise Manager Console** using the credentials you established when it was installed.
3. On the left-hand side of the **Oracle Enterprise Manager Console**, select the **Database** node in the tree, right-click, and select **Add Database to Tree....** Select the option **Add a database manually**, and fill in the fields in dialog box as indicated below. When finished, click **OK**.

Hostname:	<i>the name of the computer hosting Oracle</i>
Port Number:	<i>use the port number you supplied when Oracle was installed</i>
SID:	<i>use the SID you supplied when Oracle was installed</i>
Net Service Name:	<i>sasabm_computername</i>

4. Log into the new database by selecting it in the tree list, right-click, and select **Connect....** The **Database Connect Information** dialog box displays. Log into the database using the values indicated below. When finished, click **OK**.

UserName:	<i>sys</i>
Password:	<i>the password you supplied when Oracle was installed</i>
Connect as:	<i>SYSDBA</i>

5. Expand the **Security** folder by right-clicking on the "+" sign next to the folder icon. Select the **Users** folder, right-click, and choose **Create....** The **Create User** dialog box displays.

6. In the **Create User** dialog box, select the **General** tab. Specify a user name and password. This user name and password will be used later while installing SAS Activity-Based Management.
7. Select the **Role** tab. Verify the following privileges have been added to the **Granted** field from the **Available** field:

CONNECT (or ALTER SESSION and CREATE SESSION)
8. Select the **System** tab. Verify the following privileges have been added to the **Granted** field from the **Available** field:

ALTER ANY PROCEDURE
ALTER ANY SEQUENCE
ALTER ANY TABLE
ALTER ANY TRIGGER
CREATE ANY INDEX
CREATE PROCEDURE
CREATE SEQUENCE
CREATE TABLE
CREATE TRIGGER
CREATE VIEW
DROP ANY PROCEDURE
DROP ANY SEQUENCE
DROP ANY TABLE
DROP ANY TRIGGER
DROP ANY VIEW
QUERY REWRITE
UNLIMITED TABLESPACE
9. Click **Create** to finish creating the user for Activity-Based Management schema.

Install Microsoft Analysis Services (MSAS)

SAS Activity-Based Management 6.3 does not support multidimensional analysis (or more commonly, cubes) using Oracle Express. If multidimensional analysis is desired within the SAS Activity-Based Management application, then MSAS must be used.

Note: Alternatively, SAS OLAP may be used to create and store cubes. SAS Activity-Based Management publishes the *metadata* necessary to ensure creating these cubes is a simple task.

1. Verify that the correct version of MSAS is installed. Refer to “Verify the Correct Version of Microsoft Analysis Services (MSAS)” on page 38.
2. After installing MSAS, it is recommended that the MSAS repository. Refer to “Migrate the MSAS Repository” on page 39.

Install the Oracle Client Tools and Create Service Names

If separate application and database servers are being used, then the Oracle client tools must be installed on the server hosting the Activity-Based Management application server.

Step	Wizard Name	Comment
1	Welcome	Click Next .
2	File Locations	The default locations may be changed if desired. Click Next .
3	Available Products	Choose the option Oracle Client 9.2.0.1.0 and click Next .
4	Installation Types	Keep the option Administrator (798MB) and click Next .
5	Oracle Service for MTS	The Port Number must be configured correctly for the Oracle MTS Recovery Service Configuration to connect to the Oracle server. Refer to the documentation for your Oracle installation. Click Next .
6	Summary	Click Install to install the Oracle.
7	Install	After processing is complete, the Configuration Tools step displays and will launch several Oracle tools. Click Next .
8	Configuration Tools	The Oracle Net Configuration Assistant wizard displays. Click Next .
9	Directory Usage Configuration	The Directory Usage Configuration wizard displays. Choose the option No, I want to defer this configuration to another time and click Next .
10	Naming Methods Configuration, Select Naming Methods	The Naming Methods Configuration, Select Naming Methods wizard displays. Choose only the option Host Name and click Next .
11	Net Service Name Configuration, Database Version	Choose the option Oracle8i or later database or service and click Next .
12	Net Service Name Configuration, Database Name	The Net Service Name Configuration, Database Name wizard appears. Click Next .
13	Naming Methods Configuration Done	Click Next .
14	Done	Click Finish to complete the Oracle Client installation. Click Exit .

Verify the Database Connections

After completing the Oracle Client installation, verify that the Application server can properly connect to the remote Database Server using the Oracle Enterprise Manager Console. Verify the connection by performing the following steps:

1. On your SAS Activity-Based Management server, log into the **Oracle Enterprise Manager Console**. Choose the **Standalone** option and click **OK**.
2. Log into the **Oracle Enterprise Manager Console** using the credentials you established when it was installed.

3. On the left-hand side of the **Oracle Enterprise Manager Console**, select the **Database** node in the tree, right-click, and select **Add Database to Tree...** Select the option **Add a database manually**, and fill in the fields in dialog box as indicated below. When finished, click **Ok**.

Hostname:	<i>the name of the computer hosting Oracle</i>
Port Number:	<i>use the port number you supplied when Oracle was installed</i>
SID:	<i>use the SID you supplied when Oracle was installed</i>
Net Service Name:	<i>sasabm_computername</i>

4. If the new database was successfully added, you have verified that the proper database connection exists. If not, continue with step 5.
5. Open the **Oracle Net Manager**. On the left-hand side of the screen, expand the **Local** node in the tree. Expand the **Service Naming** node in the tree.
6. Select the **Service Naming** node in the tree and click the green “+” sign along the left-hand side of the window.
7. The **Net Service Name Wizard** displays. Enter the name you want to use to refer to this service. Click **Next**.
8. Choose a protocol to attach to the Database Server. The default value of **TCP/IP (Internet Protocol)** is acceptable. Click **Next**.
9. Enter a **Host Name** and **Port Number**. The **Host Name** is the computer name that the Oracle server is installed on. You may need to include a domain prefix. Enter the **Port Number** you used when Oracle was installed. Click **Next**.
10. Enter the **Service Name** to use to attach to the Oracle server. Click **Next**.
11. Click **Test....** If the test is not successful, click **Change Login...** and verify the credentials that are being used to attach to the Oracle server.

Appendix D – Configuring SQL Server

Verify the Correct Microsoft SQL Server Version

1. Start **Computer Management** in the **Control Panel**.
2. Expand **Services and Applications**.
3. If you do not see **Microsoft SQL Servers**, it is not installed. Install it now, then continue with the installation.
4. Expand **Microsoft SQL Servers**.
5. Right-click the server name and select **Properties**. The **SQL Server Properties** dialog box opens.
6. On the **General** tab, verify that the **Product** and **Product version** meet the specifications in the System Requirements. The service pack number is listed in parentheses after the product version number.
7. If either is not correct, install or upgrade now, then continue with the installation.

Warning: *SAS Activity-Based Management requires that SQL Server have a case insensitive collating sequence.*

Special Considerations for Remote Databases

SAS Activity-Based Management can operate with its SQL Server database located on the Application Server or located on a remote (different) Database Server. When the SQL Server database is hosted on a remote Database Server, it is necessary to verify that the proper prerequisites are installed and the two servers are configured in order to facilitate proper communication.

On the Application Server (the server hosting SAS Activity-Based Management), it is necessary to install **SQL Server Client Tools**. These tools are available on the installation CD for Microsoft SQL Server.

If the Database Server (the server hosting the SAS Activity-Based Management SQL Server database) is running Windows 2003 Server, it is necessary to enable network transactions on the Database Server. By default, Windows 2003 disables network transactions.

1. Open **Administrative Tools** in the **Control Panel**.
2. Choose **Component Services**.
3. Select Component Services\Computers\My Computer, right-click, and choose **Properties**.
4. On the **MSDTC** tab choose the button labeled **Security Configuration**.
5. Verify that the box labeled **Network DTC Access** is selected.

For more information, browse to

<http://support.microsoft.com/default.aspx?scid=kb;en-us;329332>.

Additionally, it is necessary that the Application Server can resolve the Database Server's name, and vice-versa. This is necessary for the distributed transactions between the two computers to be handled properly and for the SQL Server Client Tools to communicate properly with the SQL Server instance running on the Database Server.

Verify the Microsoft SQL Server Mixed Mode Authentication

1. Complete the previous procedure to display the **SQL Server Properties** dialog box for SAS Activity-Based Management Server.
2. Click the **Security** tab.
3. In the **Security** section, for **Authentication**, select **SQL Server and Windows**.
4. In the **Startup service account** section, select **System account** (if it can start the SQL services) or **This account**.
5. If you select **This account**:, enter a login that has system administrator privileges and its password into the appropriate text boxes.

Verify the Correct Version of Microsoft Analysis Services (MSAS)

1. Select **Start**→**Programs**→**Microsoft SQL Server**→**Analysis Services**→**Analysis Manager**.
2. If you do not see **Analysis Services**, MSAS is not installed. Install it now, then continue with the installation.
3. In the **Analysis Manager**, right-click **Analysis Servers** and select **About Analysis Services**.
4. Verify that the **Version** meets the specifications in the System Requirements.
5. If the service pack is not installed, install it now, then continue with the installation.
6. Please note that if you plan on installing SAS Activity-Based Management with a remote database, MSAS must be installed on the Application Server, not on the Database Server.

Migrate the MSAS Repository

We recommend that you migrate the Analysis Services repository from the default Microsoft Access database to an SQL Server database. SQL Server is more reliable than Access, and it can be easily added to the backups you perform regularly for other SQL Server databases.

Use the Migrate Repository Wizard to migrate the repository to an SQL Server database on the same or another server. Later, you can use the wizard to migrate the repository to another SQL Server database.

Warning: After you migrate the repository to an SQL Server database, you cannot migrate the repository back to a Microsoft Access database.

Warning: Failure to migrate the MSAS repository will greatly reduce the scalability of the MSAS installation. This will degrade server performance.

Create a New Database to Which to Migrate the Repository

1. Start the SQL Server Enterprise Manager.
2. In the left pane, expand **Microsoft SQL Server**, then **SQL Server Group**, then the name of the SQL Server.
3. Right-click **Databases**, and select **New Database**. The **Database Properties** dialog box opens.

4. Type the **Name**.
5. Leave the defaults as they are.

Create a New SQL Server Login

1. In the left pane, under the name of the SQL server, expand **Security**.
2. Right-click **Logins**, and select **New Login**. The **SQL Server Login Properties - New Login** dialog box opens.
3. On the **General** tab, type a **Name**.
4. In the **Authentication** section, select **SQL Server Authentication**.
5. Type a **Password**.
6. In the **Defaults** section, select the **Database** you created in the “Create a New Database to Which to Migrate the Repository” section above.
7. On the **Server Roles** tab, in the **Server Role** list, select **System Administrators** and **Bulk Insert Administrators**.
8. On the **Database Access** tab, in the **Permit** column, select the database you created in the “Create a New Database to Which to Migrate the Repository” section above. A checkmark appears to the left of the entry.
9. In the **Permit in Database Role** list, select **public** and **db_owner**.

Migrate the Repository

1. Start the Analysis Manager.
2. In the left pane, expand **Analysis Servers**.
3. Select the server whose repository you want to migrate. This causes Analysis Manager to connect to the server.
4. Right-click the server and select **Migrate Repository**. The Migrate Repository Wizard opens.
5. Follow the steps in the wizard, supplying the following information:

For this information...	Do this...
Destination format	Select Analysis server native format .
SQL Server computer to use for the repository	Type the name of the SQL server. (The drop-down list does not include the server.)
How to connect to the SQL Server computer	Select SQL Server Authentication .
Login ID and Password	Type those you created in the “Create a New Database to Which to Migrate the Repository” section above.
SQL Server database to use for the repository	Select the Database you created in the “Create a New Database to Which to Migrate the Repository” section above.



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