

# **Administrator's Guide for SAS® Analytics Platform 1.4**



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### **Administrator's Guide for SAS® Analytics Platform 1.4**

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# Overview

## Introduction

The SAS Analytics Platform provides a common application framework for analytical applications such as SAS Enterprise Miner, SAS Forecast Server, and SAS Inventory Policy Studio. Centralizing common application functionality into one installable component simplifies the overall installation and administration process for these applications, especially when one takes advantage of the server functionality of the Analytics Platform.

Most analytics applications that use the SAS Analytics Platform require the platform to be run as a mid-tier server, which provides access to its installed applications via remote clients. However, some applications also allow you to run the SAS Analytics Platform as an embedded service, so that running a mid-tier server is not necessary. Running the SAS Analytics Platform in this way is commonly referred to as a *Personal Workstation* deployment, and is useful for users who prefer to have the entire application (client, remote, and foundation components) available on one machine, without any dependency on the availability of a network connection.

The SAS Analytics Platform provides applications a common access point to the SAS Foundation Services, the SAS Metadata Server, and the various SAS workspace servers defined in the metadata server. Generally, manual configuration is not necessary after running the SAS Analytics Platform installation, since the post-install process will look after the initial configuration based on values which you provide. Once the SAS Analytics Platform is installed, individual applications install themselves into its *applications* directory without further configuration.

## File System Layout

The SAS Analytics Platform installs into a directory called `SASAPCore`, whose location is determined at install time. This directory contains a number of sub-directories:

- `_uninstAPL` – contains the SAS Analytics Platform uninstall program.
- `apps` – the *applications directory* into which individual applications are installed, each within their own subdirectory.
- `bin` – the *executables* directory where the various launch scripts and executables are kept. This is the directory from which you will launch SAS Analytics Platform Server start/stop, configuration and monitoring commands.
- `conf` – the *configuration directory* where configuration files are maintained.
- `Config` – this is used by the SAS Software Navigator's Configuration Wizard, and is only used at install time.
- `doc` – contains the SAS Analytics Platform on-line help files.
- `lib` – this directory contains the Java library files needed by the SAS Analytics Platform Server and its various applications.
- `logs` – this directory will contain log files that are created when running the Windows executable versions of the server scripts.
- `work` – used by the internal Web server when enabled.



## Configuring the SAS Analytics Platform

**Note:** You should verify the values specified for the SAS Analytics Platform configuration by running the SAS Analytics Platform Configuration wizard before starting the SAS Analytics Platform server for the first time.

Most of the SAS Analytics Platform configuration is maintained within two text files in the `conf` sub-directory of `SASAPCore`:

- `server.config` – contains the SAS Analytics Platform Server configuration
- `login.config` – contains the Java authentication module plug-in configuration.

These files are managed by the SAS Analytics Platform Configuration Wizard which is described in “Starting the SAS Analytics Platform Configuration Wizard” on page 4.

Typically, it is not necessary to manually configure the SAS Analytics Platform after installation. However, if you need to synchronize your SAS Administrator password, disable certain features, or need to update the references to machine names, then the Configuration Wizard will assist you in doing so.

**Note:** Any changes made to the configuration will not be recognized until the SAS Analytics Platform Server has been restarted, or, in the case of a personal workstation application, until the application has been restarted.

## Configuring the SAS Analytics Platform to use JSSE (Optional)

**Important:** If you are going to enable the SAS Analytics Platform to secure its RMI services using Secure Socket Layer (SSL) encryption, you should read and follow the instructions in this section **before** starting the SAS Analytics Platform Configuration Wizard.

The SAS Analytics Platform application provides client applications a capability to remotely invoke operations on services which use the Java Remote Method Protocol (JRMP). The SAS Analytics Platform may be configured to use Java Secure Socket Extension (JSSE) to secure all, some or none of its remote services. While running the Configuration Wizard you are prompted to select the level of security you desire.

There are three choices for the security level:

- **None** if SSL should not be used for any RMI services. This is the default.
- **All** if SSL should be used for all RMI services.
- **Some** if SSL should selectively be used for some RMI services.

Server authentication is the most common use case and allows for a client to authenticate the server offering remote Java services. This allows a user to confirm the server's identity. In this scenario, the location of the keystore file and the keystore password are specified during configuration of the SAS Analytics Platform. Prior to running the configuration, the following tasks must be completed:

1. Create a server keystore.
2. Export the self-signed certificate from the server's key store.
3. Import the self-signed server's certificate into both the client's and SAS Analytic Platform's trust store.

**Note:** Step 3 should be performed on each client machine that will be connecting to the SAS Analytics Platform.

For more information on performing these tasks, refer to the `jsse_index.html` file in the `<installdir>/SASAPCore/jsse` folder.

**Note:** The Analytics Platform and its Enterprise Miner application provide a capability to secure their RMI services using JSSE.

## Starting the SAS Analytics Platform Configuration Wizard

### Windows

Use **Start → Programs → SAS → SAS Analytics Platform → AP Server Advanced Configuration**.

### UNIX

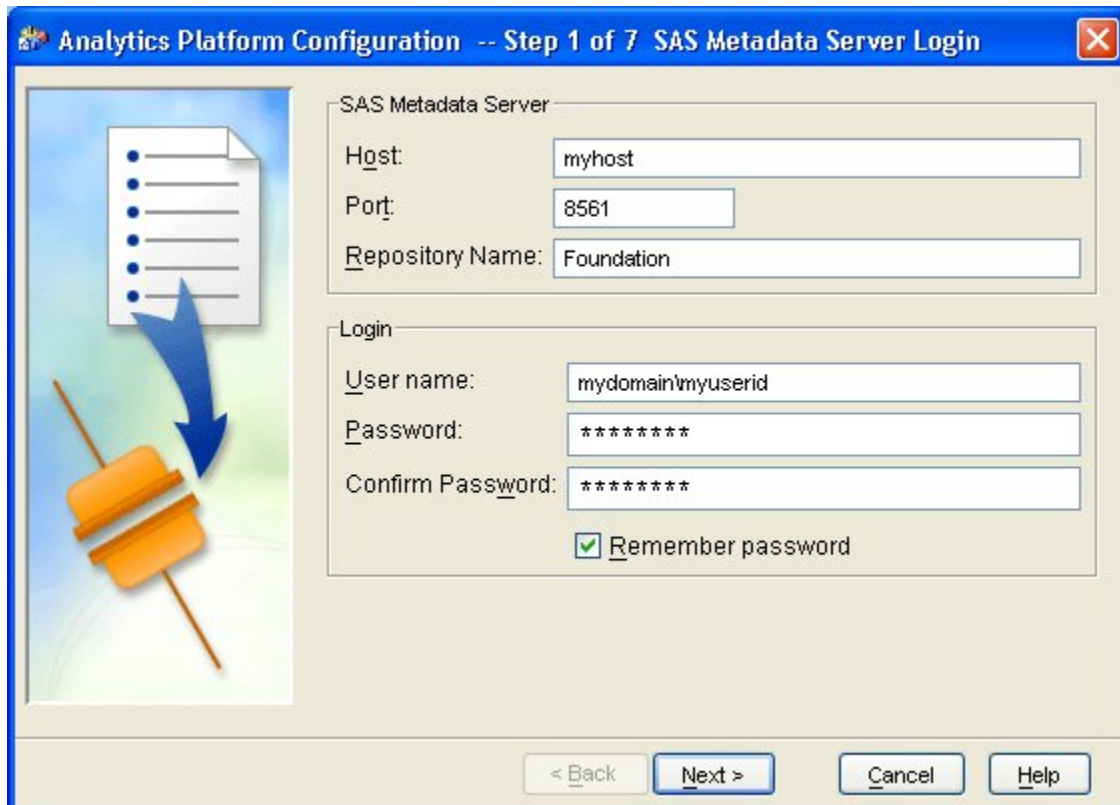
Open a terminal session, make sure you have an X server running and available, and change to the `SASAPCore/bin` directory. Issue the following command:

```
./apserver config
```

## SAS Analytics Platform Configuration Wizard — Step 1 of 7

After starting the Configuration Wizard, you are presented the **SAS Metadata Server Login** dialog box with a prompt for the SAS Metadata Server host name, port, repository name, and your user name and password for that server. Please refer to the sample window on the next page.

**Note:** If you are running the SAS Analytics Platform as a server where multiple clients will be connecting, use the `sasadm` account. If you are running the SAS Analytics Platform as an embedded process (for instance, a SAS Enterprise Miner for Desktop configuration or running in "personal workstation" mode), use your own account.



Analytics Platform Configuration -- Step 1 of 7 SAS Metadata Server Login

SAS Metadata Server

Host: myhost

Port: 8561

Repository Name: Foundation

Login

User name: mydomain\myuserid

Password: \*\*\*\*\*

Confirm Password: \*\*\*\*\*

☒ Remember password

< Back Next > Cancel Help



You can optionally store the password with the configuration. The password will be stored in encoded format. If you choose to not store the password, you will be prompted for it when you start the SAS Analytics Platform Server. Please note that you may want to secure the contents of this directory to prevent unauthorized access or modification. After entering the required information, click **Next** to proceed to the **Services** dialog box.

## SAS Analytics Platform Configuration Wizard — Step 2 of 7

In this dialog box you control which Foundation Services deployment to use, and, if you plan to run the SAS Analytics Platform as a server, which ports it uses for its various functions.

### **Foundation Services Deployment**

A Foundation Services deployment is a configuration set stored in the SAS Metadata Server's foundation repository, and identified by name. It is used by the SAS Foundation Services layer to control functions such as logging, authentication, user profiles, etc. By default, the SAS Analytics Platform creates a new deployment called **Analytics Platform – Foundation Services** the first time the server is started. However, you can choose an alternate name here, or an existing deployment. The Foundation Services deployment is managed through the Foundation Services Manager plug-in to the SAS Management Console.

### **Port Assignments and Discovery**

The remaining options on this dialog box are only used when the SAS Analytics Platform is run as a server.

### ***RMI Registry Port***

The RMI registry port is the port to assign to the RMI registry, which acts like a directory service for Java applications. SAS Analytics Platform clients only need to know the host name and RMI registry port to locate the SAS Analytics Platform Server. This step is simplified even further if the discovery service is enabled (see below), which allows clients to discover the available set of SAS Analytics Platform Servers within an organization.

When the SAS Analytics Platform Server first starts, it attempts to locate an already running RMI registry at that port location. If none is found, the server will create its own instance internally and use that for its registration. Thus is it possible for you to reuse an existing RMI registry if you have other RMI-based applications deployed at your site.

### ***Shared Platform Port***

The shared platform port is the port used by the SAS Analytics Platform Server's RMI services which are not using JSSE.

### ***Shared Platform SSL Port***

The shared platform port is the port used by the SAS Analytics Platform Server's RMI services which have been secured using JSSE.

### ***Web Server***

By default, the SAS Analytics Platform Server will run an embedded Web server. This provides you with the ability to monitor the SAS Analytics Platform Server using your Web browser as discussed in the section on monitoring above.

The Web server also allows applications to leverage the Web environment for their own feature set enrichment. Both SAS Forecast Server and SAS Enterprise Miner can be launched from the SAS Analytics Platform monitor page using Java Web Start without any formal installation or configuration on the client machines. SAS Analytics Platform requires that client machines have Java 1.4.2\_09 installed.

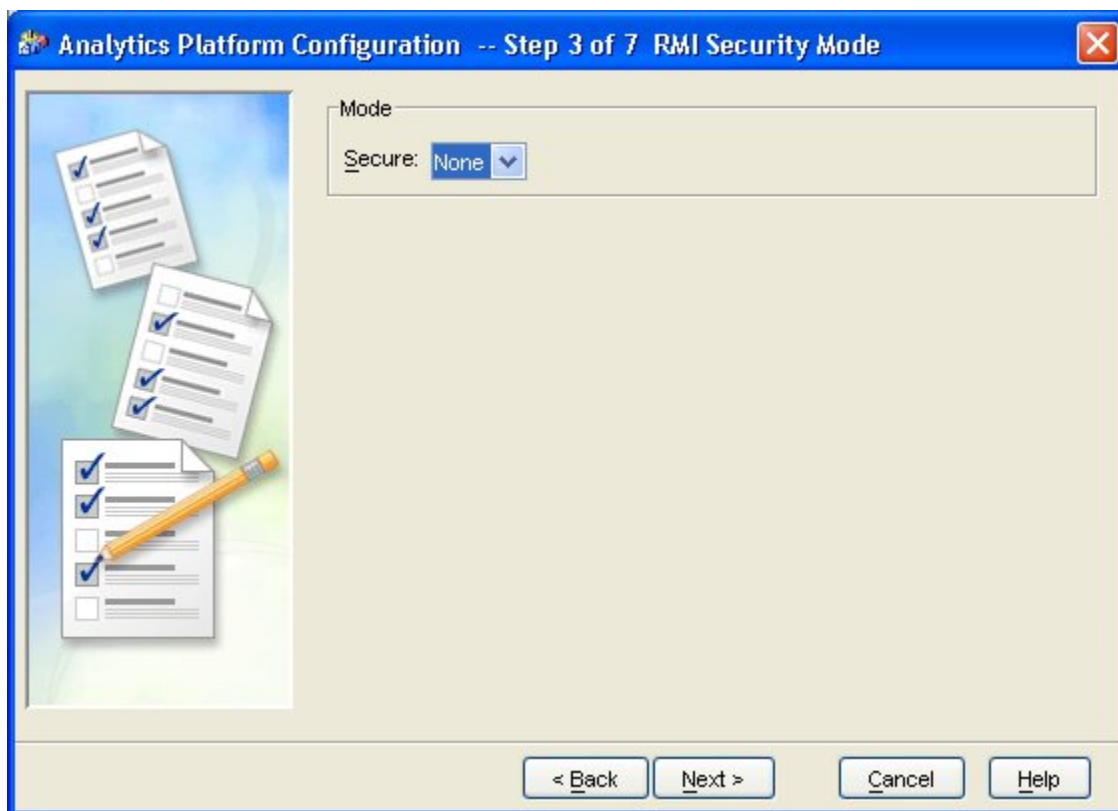
You can control the port assignment for Web server through the field provided.

Note: Enterprise Miner can work with a later 1.4.2 version but Forecast Studio only works with 1.4.2\_09.

### ***Discovery***

Enabling the discovery option allows clients to discover this server without needing to know the host name and port in advance. SAS Analytics Platform applications provide a "Search for Servers" feature in their primary logon window to perform the discovery.

## SAS Analytics Platform Configuration Wizard — Step 3 of 7



There are three choices for **Secure** mode:

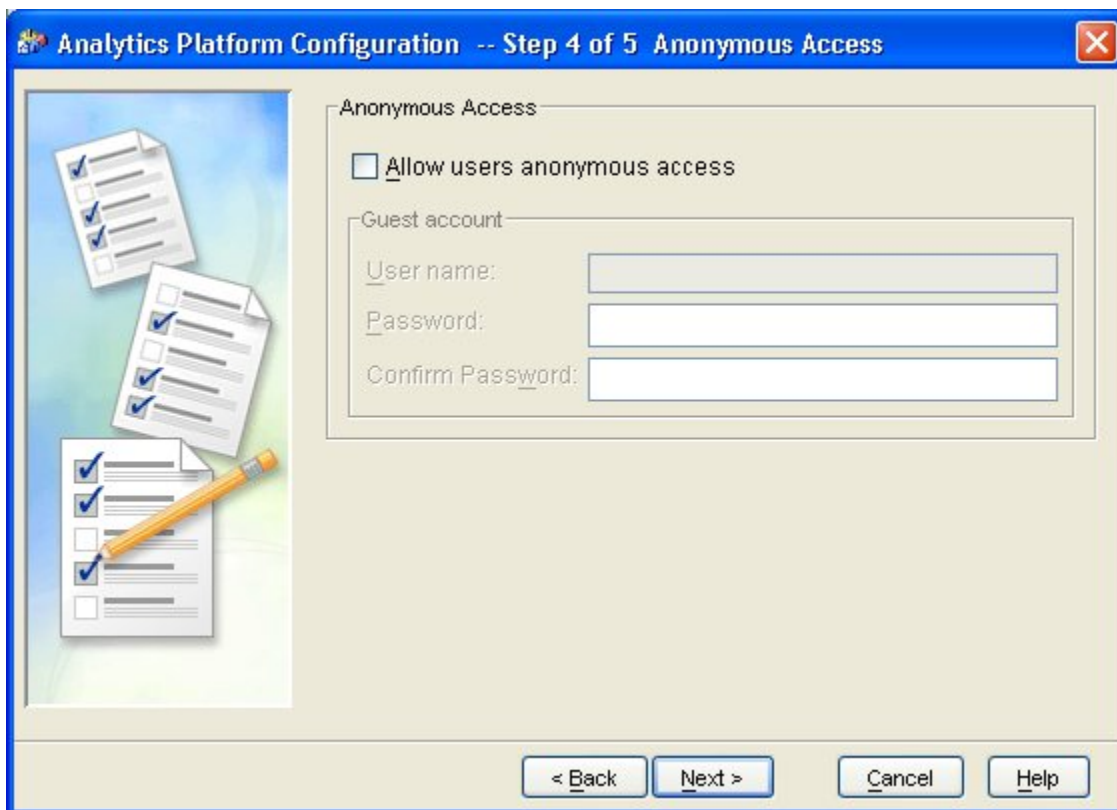
- **None** — if SSL should not be used for any RMI service. This is the **default**. Follow the directions in “Secure Mode – None – Steps 4 to 5 of 5” below.
- **All** — if SSL should be used for all RMI services. Follow the directions in “Secure Mode – All – Steps 4 to 6 of 6” on page 8.
- **Some** — if SSL should selectively be used for some RMI services. If SAS Analytics Platform is used to configure some of its remote services, an additional screen is presented during the configuration in order to make the selection. This information is stored in the `jsse_selection.config` file in the `<installdir>\SASAPCore\conf` folder. Follow the directions in “Secure Mode - Some – Steps 4 to 7 of 7” on page 11.

The number of and appearance of the remaining SAS Analytics Platform Configuration Wizard screens vary based upon the option you choose for Secure mode. Follow the appropriate directions for your choice as indicated previously.

### **Secure Mode – None – Steps 4 to 5 of 5**

If you choose **None** for Secure mode in Step 3, there are two screens remaining to complete the SAS Analytics Platform Configuration Wizard.

## SAS Analytics Platform Configuration Wizard — Step 4 of 5



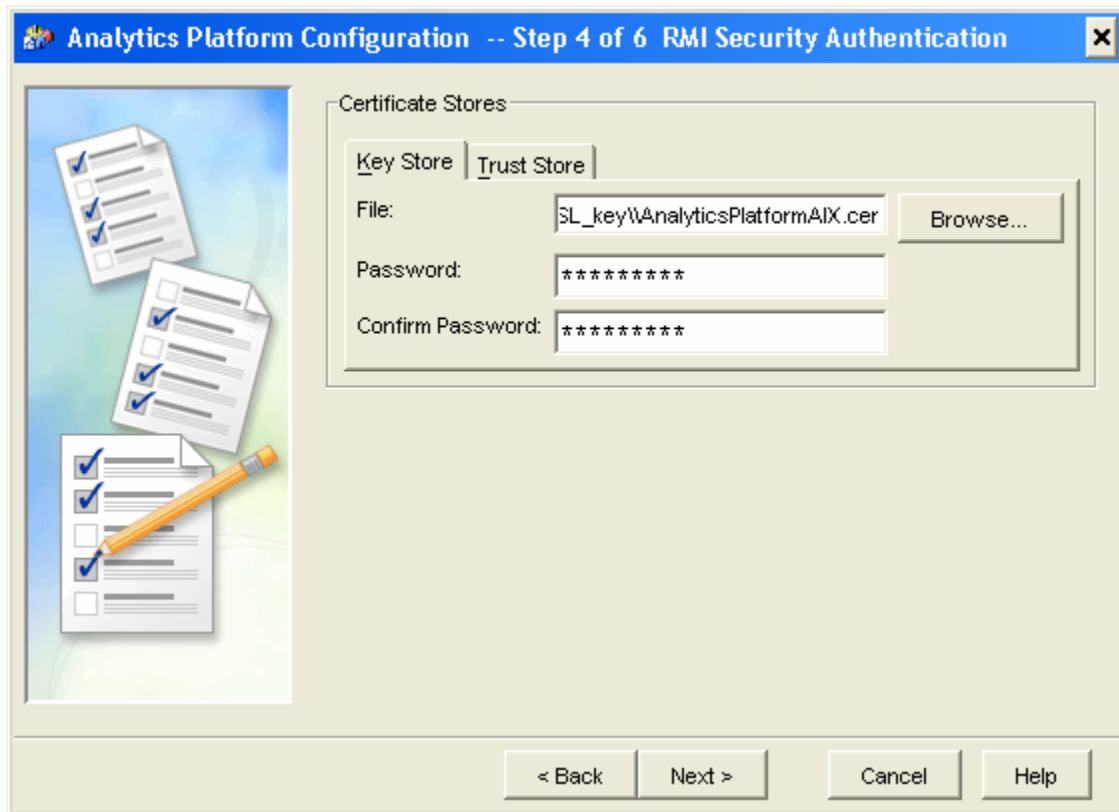
With this option enabled, users do not need to provide a user name or password when they log on to any of the SAS Analytics Platform applications. This same account will be used by all users in separate user sessions. Other than, perhaps, by tracing the IP addresses for clients as displayed in the monitoring tools, you will not be able to tell who is logged on to your system.

This option is disabled by default.

To complete your configuration, go to “SAS Analytics Platform Configuration Wizard — Final Step” on page 14.

### **Secure Mode – All – Steps 4 to 6 of 6**

If you choose **All** for Secure mode in Step 3, there are three screens remaining to complete the SAS Analytics Platform Configuration Wizard.

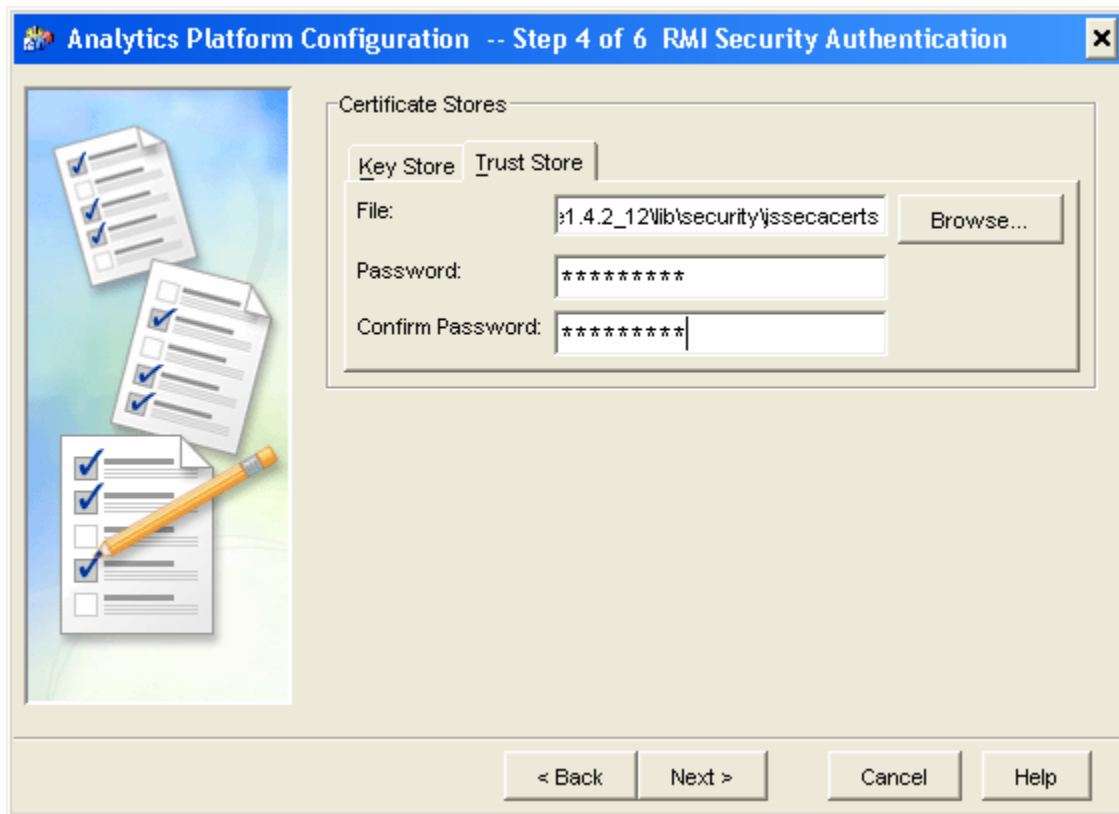
**SAS Analytics Platform Configuration Wizard — Step 4 of 6**

The **Key Store File** value should point to the location of the server keystore file that was previously created.

The **Password** should match the password specified when that keystore was created.

More information on creating the server key store can be found in  
...SASAPCore\jsse\jsse\_index.html

The following screen shows the options for the **Trust Store** tab.



The **Trust Store File** value should point to the location of the server trust store file that was previously created.

In most cases this will point to the `jssecacerts` file stored within the SAS private JRE `lib\security` folder.

`C:\Program Files\SAS\Shared Files\JRE\1.4.2_09\lib\security\jssecacerts`

The **Password** should match the password specified when that trust store was created.

## SAS Analytics Platform Configuration Wizard — Step 5 of 6

This next screen gives you the option of specifying a guest account through which users can log on anonymously. This account must exist as a system account and must already be registered in the SAS Metadata Server. All of the requirements for SAS Metadata Server accounts apply.

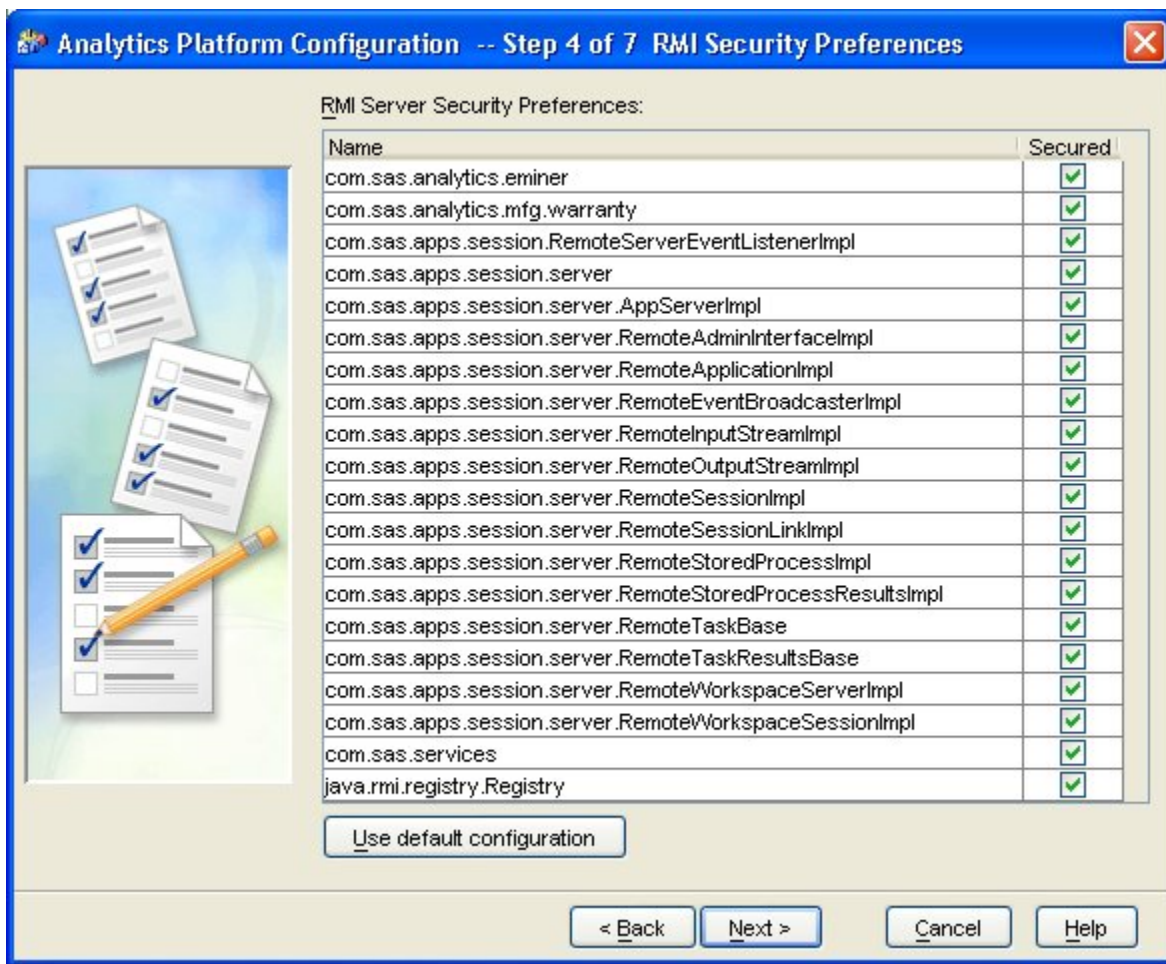
With this option enabled, users do not need to provide a user name or password when they log on to any of the SAS Analytics Platform applications. This same account will be used by all users in separate user sessions. Other than, perhaps, by tracing the IP addresses for clients as displayed in the monitoring tools, you will not be able to tell who is logged on to your system.

This option is disabled by default.

To complete your configuration, go to “SAS Analytics Platform Configuration Wizard — Final Step” on page 14.

## Secure Mode - Some – Steps 4 to 7 of 7

If you choose **Some** for Secure mode in Step 3, there are four screens remaining to complete the SAS Analytics Platform Configuration Wizard.

**SAS Analytics Platform Configuration Wizard — Step 4 of 7**

**Note:** The values selected here are stored in the file `jsse_selection.config` which resides in the `SASAPCore\conf` folder.

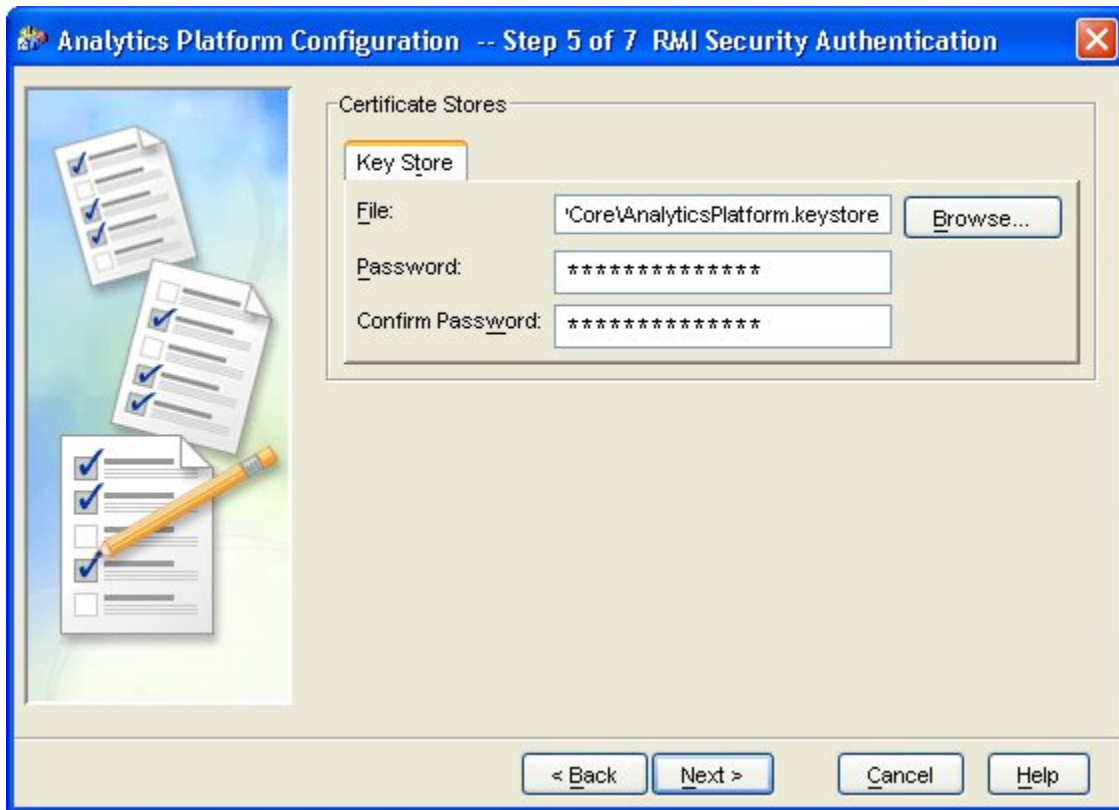
Step 5 in the **JRE setup for Server Authentication** example in the `jsse_index.html` says:

Optionally, specify the classes requiring security in the configuration file

`<ap-home>\conf\jsse_selection.config`

Making the selection on this screen automatically populates that `jsse_selection.config` so no additional manual steps are required.



**SAS Analytics Platform Configuration Wizard — Step 5 of 7**

Analytics Platform Configuration -- Step 5 of 7 RMI Security Authentication

Certificate Stores

Key Store

File: Core\AnalyticsPlatform.keystore Browse...

Password: \*\*\*\*\*

Confirm Password: \*\*\*\*\*

< Back Next > Cancel Help

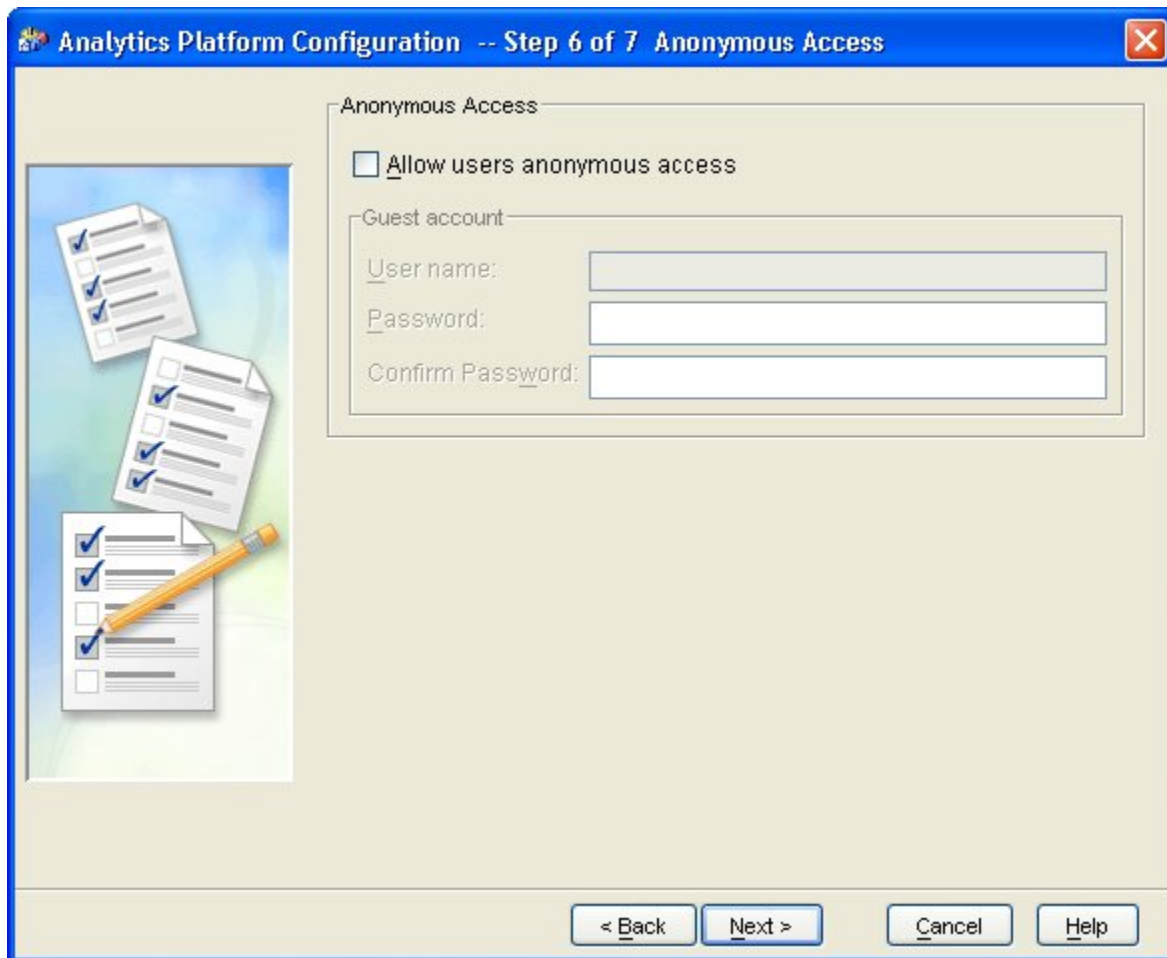
The **Key Store File** value should point to the location of the server keystore file that was previously created.

The **Password** should match the password specified when that keystore was created.

More information on creating the server key store can be found in  
...SASAPCore\jsse\jsse\_index.html

This next screen gives you the option of specifying a guest account through which users can log on anonymously. This account must exist as a system account and must already be registered in the SAS Metadata Server. All of the requirements for SAS Metadata Server accounts apply.

### SAS Analytics Platform Configuration Wizard — Step 6 of 7



Analytics Platform Configuration -- Step 6 of 7 Anonymous Access

Anonymous Access

☐ Allow users anonymous access

Guest account

User name:

Password:

Confirm Password:

< Back Next > Cancel Help

With this option enabled, users do not need to provide a user name or password when they log on to any of the SAS Analytics Platform applications. This same account will be used by all users in separate user sessions. Other than, perhaps, by tracing the IP addresses for clients as displayed in the monitoring tools, you will not be able to tell who is logged on to your system.

This option is disabled by default.

### SAS Analytics Platform Configuration Wizard — Final Step

The last dialog box (5 of 5, 6 of 6, or 7 of 7) displays a summary of your configuration. Click **Finish** to write the changes to the configuration. After doing so, you will need to restart the SAS Analytics Platform Server.

Now that you have finished configuring your SAS Analytics Platform Server, refer to the section entitled "Starting and Running the SAS Analytics Platform" on page 15 for additional information.

## Starting and Running the SAS Analytics Platform

**Note:** You should have completed the steps outlined in "Configuring the SAS Analytics Platform" on page 3 before starting the SAS Analytics Platform for the first time.

### Running the SAS Analytics Platform as a Mid-Tier Server

The SAS Analytics Platform can run as a mid-tier server to provide remote access by clients to the set of applications installed into the SAS Analytics Platform applications directory.

**Note for SAS Enterprise Miner Users:** SAS Enterprise Miner offers the ability to run as a personal workstation. Therefore, it is not necessary to run the SAS Analytics Platform as a server if you only intend to run SAS Enterprise Miner in this mode.

A personal workstation application will have the SAS Analytics Platform installed on the client machine, but will run it internally as its exclusive "client."

However, if you intend to have multiple clients share a common access point that is centrally administered, then it is necessary to dedicate one machine as the SAS Analytics Platform Server. Using this mid-tier also allows individual applications to realize benefits beyond centralized administration.

### Running SAS Analytics Platform Client/Server Applications through a Firewall

The applications whose middle tier is provided by the SAS Analytics Platform can have clients access the SAS Analytics Platform Server through a firewall. To enable this, it is necessary to permit client computers to access the RMI registry port, the Shared Platform port and the Shared Platform SSL port bidirectionally. These ports are explained in "Configuring the SAS Analytics Platform" on page 3 and default to 5099, 6099 and 7099 respectively.

The following table summarizes the port requirements based upon the options which were selected for RMI Services:

Port	Status
5099	Must be open bi-directionally
6098	When SAS Analytics Platform was configured, if the box was checked to "Enable Web server," port 6098 also needs to be open bi-directionally
6099	Must be open bi-directionally
7099	When SAS Analytics Platform was configured, if you selected to secure "Some" or "All" RMI Services, then port 7099 also needs to be open bi-directionally

Windows XP (at Service Pack 2 level) contains a firewall that is often enabled. The Security Center Windows Firewall exceptions must include the following for SAS Analytics Platform family products (including SAS Enterprise Miner, SAS Forecast Studio, SAS Inventory Management Studio, and SAS Model Management Studio) clients to be able to access the SAS Analytics Platform Server, and for other SAS Java applications. Default paths are shown.

SAS Analytics Platform 1.4, SAS Enterprise Miner 5.3, SAS Forecast Studio and SAS Analytics Platform family products use the SAS private JRE version 1.4.2\_09 or later 1.4.2.

C:\Program Files\SAS\Shared Files\JRE\1.4.2\_09\bin

SAS Analytics Platform family product Java Web Start clients use the publicly installed Sun Java library, which must be at version 1.4.2\_09 or later 1.4.2 release. A typical install would locate the library in varying locations, but the default is:

```
C:\j2sdk1.4.2_09\jre\bin
```

or

```
C:\Program Files\Java\j2re1.4.2_09\bin
```

Entries in the firewall exception list are usually set up automatically by the security center, but if there is no entry for the SAS private JRE's `java.exe` you must add one. The XP security center tested a program-type exception named "Java," and when edited showed the path to the SAS private JRE's `java.exe` in the "Path:" field of the exception properties.

Testing indicates this is the only exception entry necessary. You must change the "scope" of the program entry (there's no "port" entry involved) following these steps:

1. Launch the Security Center (from Control Panel) and enter Windows Firewall.
2. Select the **Exceptions** tab and the Java entry in the list.
3. Click **Edit**. The path will contain the path to the Java library noted above.
4. Click the **Change scope** button.
5. The tightest security is obtained by selecting the **Custom list** and entering the IP address of the client machine itself, a comma, the IP address of the machine on which the SAS Analytics Platform 1.3 or SAS Enterprise Miner 5.1 shared platform (mid-tier) server runs, a slash, and a full mask. For example,

```
192.168.9.73,192.168.9.83/255.255.255.255
```

The alternative is to either select the radio button that says **My network (subnet) only** if the server is in the same subnet, or to select **Any computer (including those on the internet)**. Since these options apply only for the SAS private copy of Java and only SAS Enterprise Miner will use it, there's minimal risk in allowing either option.

6. Click **OK** recursively to exit the firewall dialog and the settings are active immediately.

This will allow that Java program to communicate on any port with anything running on either machine. The firewall will protect that program from receiving anything on any port from any other machine if you used the **Custom list** option.\

## Starting the SAS Analytics Platform Server

The SAS Analytics Platform is started by the use of a script or a set of executable files (Windows). When the SAS Analytics Platform first starts, it needs to connect to the SAS Metadata Server in order to initialize its runtime environment. By default, the server is configured to use a persisted set of credentials in order to connect to the SAS Metadata Server. However, it is possible to instead have a prompt appear for user ID and password when the server starts (see the section on configuration below).

All installed applications are discovered during this initialization phase. Thus, if you install other SAS Analytics Platform applications, it is first necessary to stop the server, and then restart it so that the new application will be recognized.

The SAS Analytics Platform Server does not automatically start after installation, so you will need to either start it manually, or install it as a system service. A script is provided to facilitate the installation as a Windows service. The sections below detail the steps required to start the SAS Analytics Platform for each supported OS environment.

## Starting the SAS Analytics Platform Server under Windows

By default, the server is configured to use a persisted set of credentials in order to connect to the SAS Metadata Server. However, it is possible to instead have a prompt appear for user ID and password when the server starts (see the section on configuration below).

### DOS Console Output

Use

**Start → Programs → SAS → SAS Analytics Platform → Start AP Server**

to start the server. This will start the SAS Analytics Platform Server in a DOS console window. The server is ready to receive clients when the message “Waiting for clients” appears at the bottom of the screen.

You can also open a DOS window and change to the `SASAPCore\bin` directory and type:

```
apserver.bat start
```

or

```
apserver.bat start > ..\logs\mylogfile.txt
```

This lets you control the name of the log file used to capture the various system messages.

### Log File Output

Alternatively, you can start the SAS Analytics Platform Server using the `apstart.exe` Windows executable located in the `bin` folder of your `SASAPCore` install location (for example, `c:\Program Files\SAS\SASAPCore\bin`). This will start the server and cause the log messages to appear in a new log file that will be automatically created for you in the logs directory under `SASAPCore`.

## Starting the SAS Analytics Platform Server under UNIX

Under UNIX, you will need to open a terminal session and change to the `SASAPCore/bin` directory. Issue the command:

```
./apserver start
```

The server is ready to receive clients when the message “Waiting for clients...” appears at the bottom of the screen.

By default, system log messages are sent to `stdout`, so you can use common UNIX shell syntax to redirect these messages to a log file:

```
./apserver start > ../logs/log1.txt
```

If you are running the SAS Analytics Platform Server in a non-graphical environment you should perform the following steps:

1. Ensure that the SAS Analytics Platform Server userid and password are saved via the SAS Analytics Platform Configuration Wizard (that is, the **Save Password** option must be checked).
2. Add the `-headless` switch when invoking the `apserver` script. For example,  

```
./apserver -headless start
```

## Monitoring the SAS Analytics Platform Server

The SAS Analytics Platform Server provides some monitoring tools that help you when running the SAS Analytics Platform as a mid-tier server.

### Console Application

The console application provides the ability to view some basic status and configuration information for the server plus the list of installed applications. It also provides dynamic information such as a list of the number of client sessions currently attached to the server, and the number of active SAS workspace sessions that have been initiated via this server, as well as a means for you to shut down the server.

### Starting the SAS Analytics Platform Console

Before starting the SAS Analytics Platform console, you must have already started the SAS Analytics Platform Server on the same machine where you plan to run the console.

#### Windows

Use **Start → Programs → SAS → SAS Analytics Platform → AP Server Console**

#### UNIX

Open a terminal session, make sure you have an X server running and available, and change to the `SASAPCore/bin` directory. Issue the command:

```
./apserver console
```

#### Problems

- If, instead of the console window, you see a message that says “Could not reach the Analytics Platform Server” or “Server is not running,” it means that no SAS Analytics Platform Server is running on this machine. Check the SAS Analytics Platform log files to see why the server may not have started successfully.
- (UNIX) if you see a message that says “A graphical screen environment is required to run the console.” it means that your X environment is not setup correctly. Make sure you have set the `DISPLAY` environment variable to point back to the client machine you are using for your terminal session.

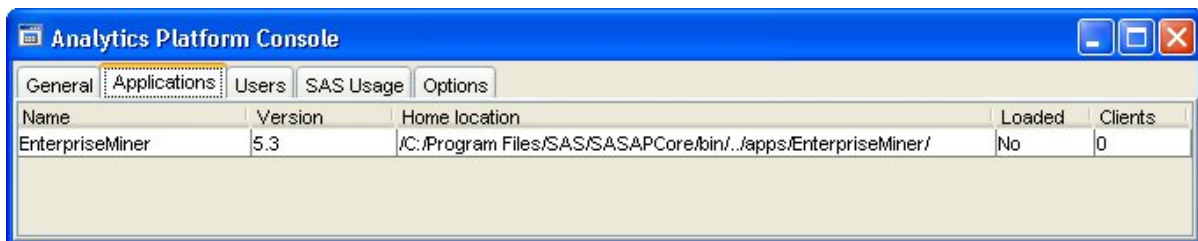
## Using the SAS Analytics Platform Console

The **Analytics Platform Console** window uses a tabbed layout to organize its information. The first tab, **General**, displays an overview of the overall status of the system.



Name	Value
Started	Oct 23, 2007 2:55:49 PM
Status	Waiting for clients
Users	0
Registered Applications	1
Loaded Applications	0
SAS Workspace Sessions	0
Metadata host	myhost.sas.com
Metadata port	8561
Foundation Services Deployment	Analytics Platform - Foundation Services
Version	1.4.0.0.20071022.59556
RMI Registry Port	5099
RMI Port	6099
RMI SSL Port	7099
RMI Security Mode	RMI services are not secured.
Authentication Domain	DefaultAuth
Operating System	Windows XP
Operating System Version	5.1
Java version	1.4.2_09-b05
Java runtime	Java(TM) 2 Runtime Environment, Standard Edition
Java classpath	..lib\sas_launcher.jar

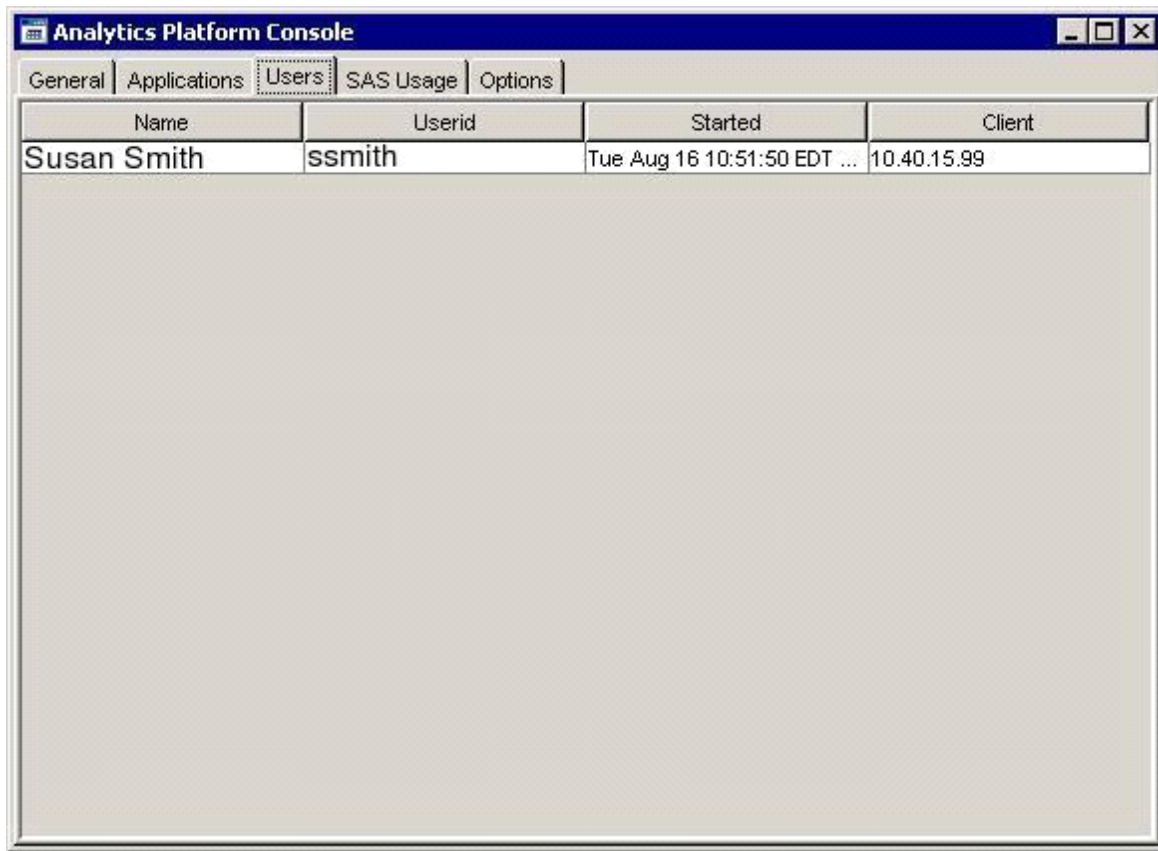
The second tab, **Applications**, displays the list of installed applications, whether they have been loaded, and the number of clients using that application.



Name	Version	Home location	Loaded	Clients
EnterpriseMiner	5.3	/C:/Program Files/SAS/SASAPCore/bin/./apps/EnterpriseMiner/	No	0

**Note:** If “Yes” appears in the **Loaded** column for an application, it means that the application Mid-Tier software has been loaded into memory. This happens when that application is requested by a user since the AP server was first started.

The third tab, **Users**, displays who is on-line, when their session started, and from which IP address they are connected.

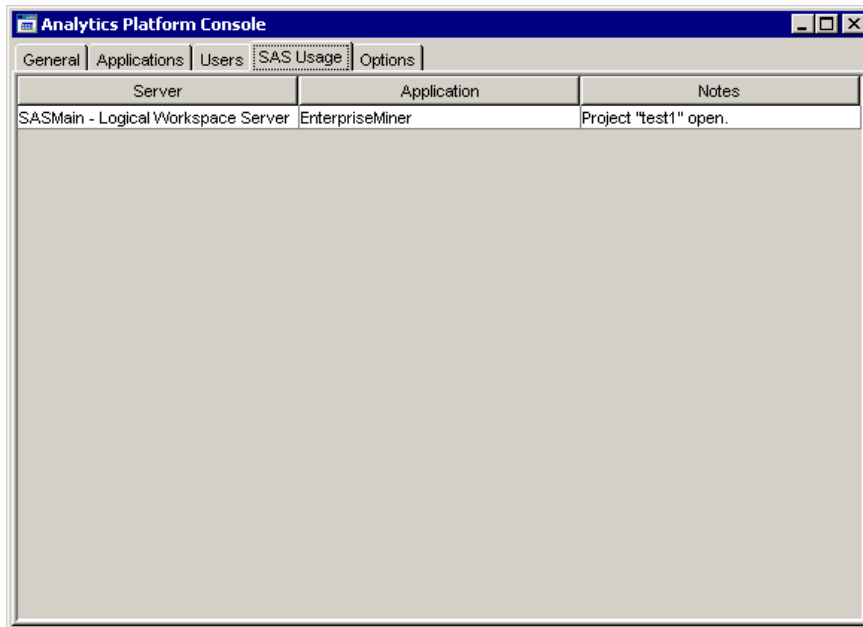


The screenshot shows a web application window titled "Analytics Platform Console". It has a tabbed interface with four tabs: "General", "Applications", "Users", and "SAS Usage". The "Users" tab is currently selected. Below the tabs is a table with four columns: "Name", "Userid", "Started", and "Client". The table contains one row of data for a user named "Susan Smith" with userid "ssmith", who started their session on "Tue Aug 16 10:51:50 EDT ..." from the client IP "10.40.15.99".

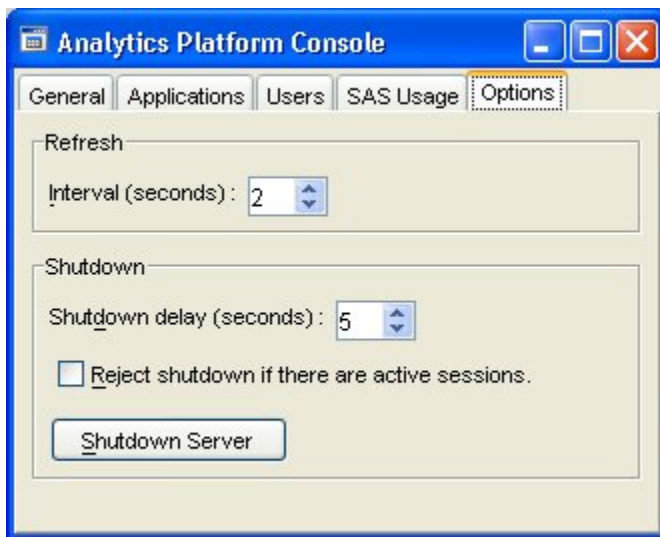
Name	Userid	Started	Client
Susan Smith	ssmith	Tue Aug 16 10:51:50 EDT ...	10.40.15.99



The fourth tab, **SAS Usage**, displays a list of active SAS workspace sessions.



The fifth tab, **Options**, lets you control the refresh rate of the console window, and provides you with a button which can be used to shut down the server (when you invoke this action, the console application will exit).



## Monitoring Using Your Web Browser

It is possible to monitor the SAS Analytics Platform Server remotely using your Web browser. The information provided via your Web browser, and the information provided by the console application overlap to a large degree. However, it is **not** possible to shutdown the server using the Web interface, and you must manually refresh the information using your browser's refresh button.

**Note:** *This remote monitoring facility is only available when the embedded HTTP server is enabled. By default, the SAS Analytics Platform is installed with this feature enabled. However, it is possible to disable this feature by turning off the HTTP service using the SAS Analytics Platform Configuration Wizard. See the section on configuration below.*

Once you have started the SAS Analytics Platform Server, use your Web browser to point to the server machine, remembering to add the port to the URL. By default, this port is 6098, but you can change this port assignment via the Configuration Wizard.

For example, if the machine on which you are running the SAS Analytics Platform Server is called myhost.mydomain.com, then you can point your Web browser to:

`http://myhost.mydomain.com:6098`

If everything is running correctly, you will see a page similar to the following:

SAS Analytics Platform  
Server Status-October 14, 2005 2:30:46 PM EDT

Activity Configuration

### Summary

Started	October 10, 2005 3:21:52 PM EDT
Status	Waiting for clients
SAS Workspace Sessions	4
Total Users	3
Registered Applications	1
Loaded Applications	1

### Users

Userid	Name	Session Started	Client Address
jdoe	John Doe	October 14, 2005 2:30:01 PM EDT	10.40.12.45
fjones	Frank Jones	October 14, 2005 2:30:42 PM EDT	10.40.12.43
ssmith	Susan Smith	October 14, 2005 2:30:42 PM EDT	10.40.12.44

### SAS Workspace Sessions

User	Server	Application	Status
John Doe	SASMain - Logical Workspace Server	EnterpriseMiner	Running diagram "home equity" in project "loan analysis".
John Doe	SASMain - Logical Workspace Server	EnterpriseMiner	Project "loan analysis" open.
Susan Smith	SASMain - Logical Workspace Server	EnterpriseMiner	Project "loan analysis" open.
Frank Jones	SASMain - Logical Workspace Server	EnterpriseMiner	Project "credit" open.

Done

The page is organized into two tabs. The first, **Activity**, displays dynamic system information such as the time that the server started, the number of users on-line, the number of active SAS workspace sessions, etc.

The second tab, **Configuration**, displays configuration information and lists set of installed applications. Some applications may provide links to their own Web pages. Others may provide a Launch link which lets clients start the application on their client machine using Java Web Start technology. Java Web Start lets clients which have Java 1.4.2 or later installed run applications from a Web page without ever needing to run a separate install program.

The screenshot shows the 'Server Status' page for the SAS Analytics Platform. The top navigation bar includes 'Activity' and 'Configuration' tabs, with 'Configuration' being the active tab. The page title is 'Server Status • October 23, 2007 3:01:45 PM EDT'. The 'Applications' section contains a table with one application, 'EnterpriseMiner', which has a 'Launch' link. The 'Configuration' section is divided into two expandable sections: 'Analytics Platform Server' and 'SAS Foundation'. The 'Analytics Platform Server' section lists various settings such as Host, Root location, Version, Discovery Enabled, and RMI ports. The 'SAS Foundation' section lists settings for Foundation Services Deployment, Metadata Host, Metadata Port, SAS Metadata Repository, and Authentication Domain. The 'Environment' section at the bottom shows the Operating System as 'Windows XP'. The browser's address bar shows 'Local intranet'.

**SAS Analytics Platform** XML

**Server Status • October 23, 2007 3:01:45 PM EDT**

Activity **Configuration**

**Applications**

Name	Version	Loaded	Clients	Java Webstart
<a href="#">EnterpriseMiner</a>	5.3	No	0	<a href="#">Launch</a>

**Configuration**

**Analytics Platform Server**

Host	myhost.sas.com
Root location	/C:/Program Files/SAS/SASAPCore/bin/..
Version	1.4.0.0.20071022.59556
Discovery Enabled	No
RMI Registry Port	5099
RMI Port	6099
RMI SSL Port	7099
RMI security	RMI services are not secured.

**SAS Foundation**

Foundation Services Deployment	Analytics Platform - Foundation Services
Metadata Host	d14858.na.sas.com
Metadata Port	8561
SAS Metadata Repository	Foundation
Authentication Domain	DefaultAuth

**Environment**

Operating System	Windows XP
------------------	------------

Local intranet

## Java Web Start Client Considerations

Automatic downloads of client files can be accomplished using Java Web Start. Deploying client files in this manner eliminates the need to install the client application manually on each desktop machine. It also eliminates the possibility of the client application version not matching the server version. When you launch the application in this manner, all of the required JAR files are automatically downloaded to the desktop. You might be prompted a few times for security purposes and asked if you want to create a desktop icon. If a new version is installed on the server, then the updated version automatically installs before the client application is invoked.

Clients for SAS Enterprise Miner and SAS Forecast Studio can be launched by the Java Web Start facilities enabled within the SAS Analytics Platform Server. The clients can be launched by clicking the link for the client found in the Applications section of the **Configuration** tab of the AP Server Status page. The clients can also be launched by a direct URL reference or shortcut:

<http://server.domain.com:6098/EnterpriseMiner/main.jnlp>

for SAS Enterprise Miner or

<http://server.domain.com:6098/Forecasting/main.jnlp>

for SAS Forecast Studio.

SAS Analytics Platform family product Java Web Start clients use the publicly installed Java JRE library, which must be at version 1.4.2\_09 or later 1.4.2 release. These products are available from Sun Microsystems, IBM, or Hewlett Packard, depending on the platform of the client workstation. The most common workstation is the Windows platform, and Sun's Java install automatically updates the Java Web Start launching mechanism within Web browsers installed on Windows.

Publicly installed Java 1.4.2\_09 and later versions on Windows often get automatically upgraded to Java 1.5 (also known as "5.0"). SAS Enterprise Miner and SAS Forecast Studio clients deployed by SAS Analytics Platform through Java Web Start (JWS) will not run successfully on Java 1.5.x. SAS Enterprise Miner requires a 1.4.2\_09 or later 1.4.2 release to execute properly. SAS Forecast Studio will only work with 1.4.2\_09.

To run JWS clients of these products on the client machines, the user must disable Java 1.5 in the application runtime settings of the Java Web Start Application Manager. Here's the procedure:

1. Launch the Java Web Start Application Manager. There may be a shortcut under

**Start → Programs → Java Web Start**

or alternatively you can execute

`c:\Program Files\Java\jre1.5.x_nn\javaws.exe`

2. Click **Edit → Preferences** and select the **Java** tab.
3. Click the **View** button in the **Java Application Runtime Settings** section.
4. Uncheck the **Enabled** checkbox for any version 1.5 entries.
5. Click **OK** twice and close the application manager.

## Stopping the SAS Analytics Platform Server

Occasionally it may be necessary to stop the server, such as in the case when you need to restart it after installing a new application, or after running the SAS Analytics Platform Configuration Wizard. You can either use the scripts provided to issue the shutdown command (see below), or use the console window's shutdown feature as discussed above.

### Stopping the SAS Analytics Platform under Windows

Use **Start → Programs → SAS → SAS Analytics Platform → Stop AP Server**

This will cause the SAS Analytics Platform Server to stop after approximately 5 seconds. Alternatively, you can open a DOS window, navigate to the SASAPCore\bin directory and use the command:

```
apserver.bat stop -t seconds
```

where *seconds* is the amount of time to wait in seconds before shutdown.

## **Stopping the SAS Analytics Platform under UNIX**

Open a terminal session, make sure you have an X server running and available, and change to the SASAPCore/bin directory. Issue the command:

```
./apserver stop
```



# Installing and Running the SAS Analytics Platform as a Windows Service

You may choose to install the SAS Analytics Platform as a Windows service. By default, the SAS Analytics Platform Service is configured to include the SAS Metadata Server as a dependency. If you choose to run the metadata server on another machine, this dependency should be removed.

Note: Ensure that the SAS Analytics Platform Server userid and password are saved via the SAS Analytics Platform Configuration Wizard (that is, the **Save Password** option must be checked).

## Dependency Configuration

If you choose to run the SAS Metadata server on a different machine you will need to remove the dependency defined in the configuration file:

1. Navigate to the `SASAPCore\conf` directory.
2. Use your favorite text editor to edit the file `wrapper.conf`.
3. Comment out this line (located near the end of the file):  
`wrapper.ntservice.dependency.1=SAS Lev1 MS - 9.1`  
by adding a '#' character at the start of the line as follows:  
`# wrapper.ntservice.dependency.1=SAS Lev1 MS - 9.1`

Otherwise, you'll need to modify the service name to match what was installed on your machine:

1. Navigate to the `SASAPCore\conf` directory.
2. Use your favorite text editor to edit `wrapper.conf`.
3. Modify the `wrapper.ntservice.dependency.1` property to match the name of the SAS Metadata Server service name installed on your computer. For example:  
`wrapper.ntservice.dependency.1=My Metadata Server - Lev1`

## Installation

Follow these steps:

1. Open a command window.
2. Navigate to the `SAS\SASAPCore\bin` directory.
3. Run the command:

```
AnalyticsPlatformService install
```

This will install and register the SAS Analytics Platform as a Windows service.

## Service Administration

Normally you will not need to worry about the service once it is configured and installed. Windows will manage it for you. However, there are additional commands available should you wish to use them:

To start the service from the command line, use:

```
AnalyticsPlatformService start
```

To stop the service from the command line, use:

```
AnalyticsPlatformService stop
```

To restart the service from the command line, use:

```
AnalyticsPlatformService restart
```

To remove the service from windows, use:

```
AnalyticsPlatformService remove
```



# Installing and Running the SAS Analytics Platform as a UNIX Background Service

With the default configuration on UNIX platforms, the SAS Analytics Platform server, which is used by SAS Enterprise Miner and SAS Forecast Studio, will terminate when the X Window session that starts the server is closed. In order for the SAS Analytics Platform server to continue to run once the X Window session is closed, complete the following steps:

1. Run the SAS Analytics Platform Configuration wizard, making sure to check the box **'Remember password'**, by running the following script:

**./apserver config**

**Note:** The apserver script is typically found in:

{pathtoSASdirectory}/SASAPCore/bin

2. Edit the apserver script. Add the **nohup** command to the beginning of the Java command. Add an ampersand (&) at the end of the java command.

An example of the original command follows. The values shown in these examples may differ slightly from the values in the script at your site.

**Note:** Ignore the line-wrapping in the text below which is a result of the layout of this document. All text should be entered on one line.

# was \$JAVACMD

/SAS\_9.1/sasjre/1.4.2/bin/java \$CLOPTS

-Djava.rmi.server.hostname=10.16.150.72 -Dap.home="\${AP\_HOME}"

\$OPTIONS com.sas.apps.session.server.Main"\$@"

**An example of the revised command:**

# was \$JAVACMD

nohup /SAS\_9.1/sasjre/1.4.2/bin/java \$CLOPTS

-Djava.rmi.server.hostname=10.16.150.72 -Dap.home="\${AP\_HOME}"

\$OPTIONS com.sas.apps.session.server.Main"\$@" &

3. Stop and restart the Analytics platform server to pick up the changes. Once restarted, the Analytic platform server will remain active even when the X Window session closes. In addition to the changes within the script, you must also add the '-headless' switch when invoking the apserver script.

**./apserver -headless start**

**Note:** Depending on the protocol in which your UNIX session was established, you may find that the SAS Analytics Platform still shuts down when your UNIX session is closed. In this case, it may be necessary to unset your display prior to starting the SAS Analytics Platform.

For example:

**unset DISPLAY**

**./apserver -headless start**



## Troubleshooting Common Problems

### **Problem: Users can no longer log on after you have run the Configuration Wizard**

If you have changed the name of the SAS Metadata Server host in the Configuration Wizard's first dialog box, after having already run the SAS Analytics Platform at least once, you will probably need to adjust one of the SAS Foundation Services settings using the SAS Management Console.

If, for example, you have changed the reference to the metadata server host from "myhost" to "myhost.mydomain.com" in the Configuration Wizard, then follow these steps to ensure that the Foundation Services are synchronized:

1. Note the new host name and the name of the Foundation Services deployment used by the Analytics Platform.
2. Start the SAS Management Console and log on to the metadata server using the new host name.
3. In the left pane, expand the **Foundation Services Manager** branch, and then expand the branch that corresponds to the name of your Foundation Services deployment. The default is **Analytics Platform – Foundation Services**.
4. Expand the **Core Services** folder and select the **User Service** icon.
5. Use the right mouse button to raise the pop-up menu, and select **Properties**.
6. In the **Properties** window, select the **Service Configuration** tab and click **Edit Configuration**.
7. In the **User Service Configuration** window, select the **global** profile and click **Edit**.
8. Change the domain URL so that the host name matches the new name used in your SAS Analytics Platform configuration. Using the example names above, change:

```
omi://myhost:8561 to
```

```
omi://myhost.mydomain.com:8561
```

It is important that the host names match exactly.

9. Click **OK** to save your changes and close each window until you are back to the main SAS Management Console window.
10. Restart the SAS Analytics Platform Server.

### **Problem: Remote clients unable to connect to the SAS Analytics Platform Server running under UNIX**

Under some networking environments it is necessary to modify the **apserver** launch script on a UNIX system so that the RMI registry can be used by remote clients.

1. Edit the **apserver** launch script located in the executables directory (SASAPCore/bin) using a text editor such as *vi*.
2. Modify the last line that looks like this:

```
JAVALOC $CLOPTS -Dap.home="${AP_HOME}" $OPTIONS  
com.sas.apps.session.server.Main "$@"
```

to include the following

```
JAVALOC $CLOPTS -Djava.rmi.server.hostname=ip-address-of-this-machine -Dap.home="${AP_HOME}" $OPTIONS  
com.sas.apps.session.server.Main "$@"
```

For example:

```
JAVALOC $CLOPTS -Djava.rmi.server.hostname=10.40.12.43 -  
Dap.home="{AP_HOME}" $OPTIONS com.sas.apps.session.server.Main "$@"
```

**Note:** Ignore the line-wrapping in the text above which is a result of the layout of this document. All text should be entered on one line.

3. Restart the SAS Analytics Platform Server.

**Problem: The “Search for Servers” feature of the application log on window fails to locate the SAS Analytics Platform Server**

This can be caused by three factors:

- The Discovery Service has not been enabled on the SAS Analytics Platform Server. Use the Configuration Wizard to enable this feature by selecting the **Allow clients to discover this server** checkbox. Restart the SAS Analytics Platform Server.
- The client is running from behind a firewall. In this setting, the Search for Servers feature will fail. Enter the server location in the Server field and click **Log On**.
- The client is installed with an earlier \release of the SAS Analytics Platform Java files. You can either enter the server location in the Server field, (as in Step 2 above) or copy the Java file `sas.apps.session.jar` from the server's `SASAPCore\lib` location to where it has been previously installed on your client. It is recommended that you first backup any files before overwriting them.

**Problem: When clicking the Java Web Start launch link, a prompt appears to save a `jnlp` file, instead of launching the application.**

The SAS private JRE does not install the Java plug-in for Internet Explorer. Therefore, you have the following options:

**Windows Platforms - Internet Explorer**

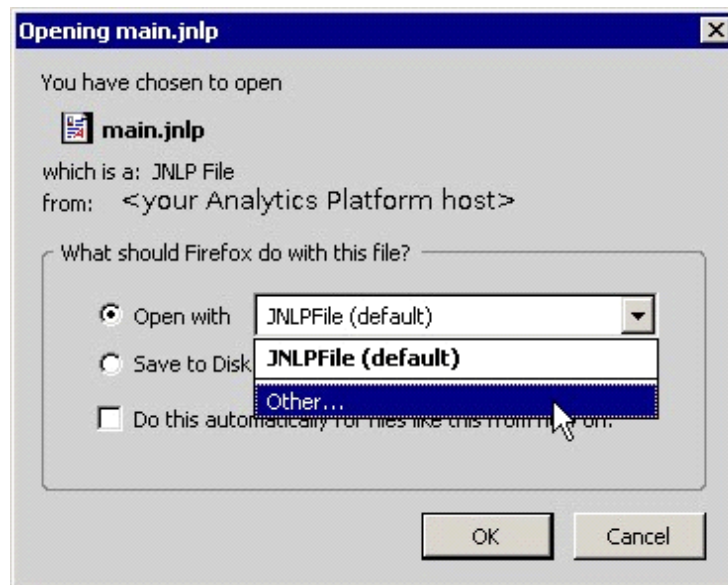
1. Install the full Java runtime environment by visiting  
[http://java.sun.com/products/archive/j2se/1.4.2\\_07/index.html](http://java.sun.com/products/archive/j2se/1.4.2_07/index.html).  
This will install the Java plug-in.
2. Restart Internet Explorer and revisit the Java Web Start link for your application.

**Using Firefox (All Platforms)**

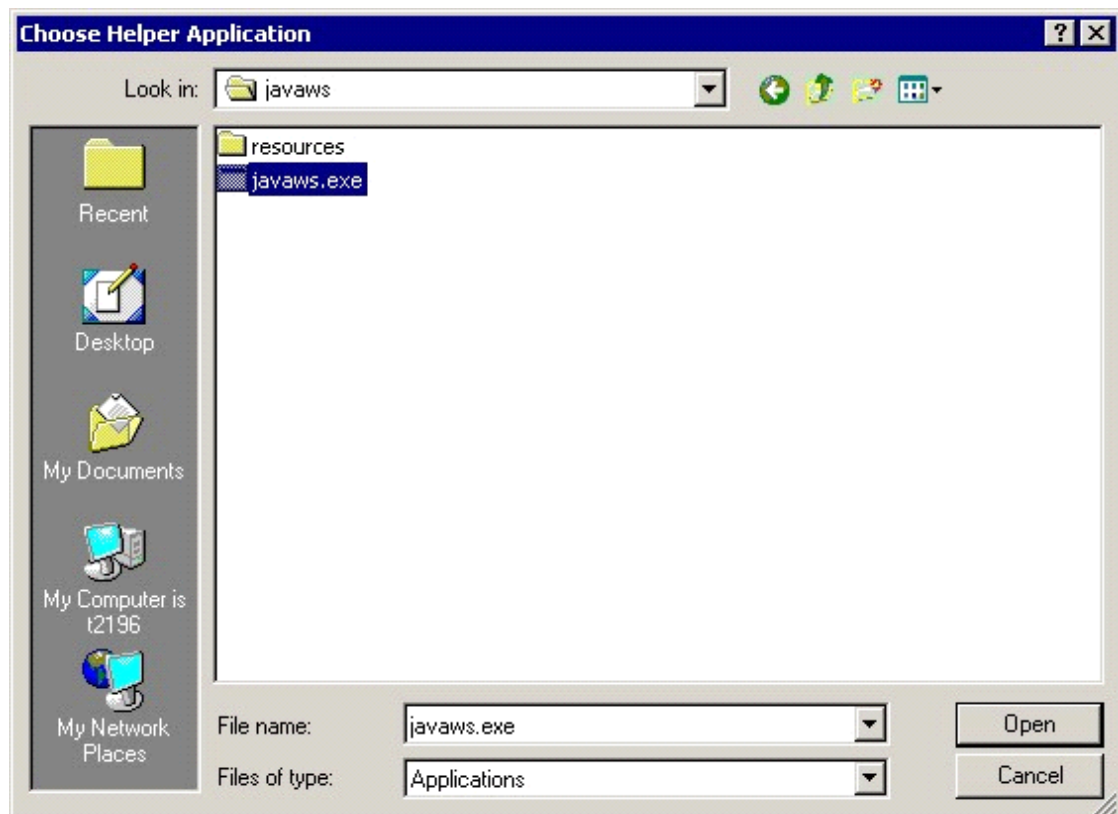
Use a different browser, such as Mozilla Firefox. Firefox allows you to associate an application with a file type. To configure Firefox for Java Web Start, do the following:

1. Install Firefox from <http://www.mozilla.org/products/firefox/>.
2. Start Firefox and visit the Java Web Start launch link for your application.

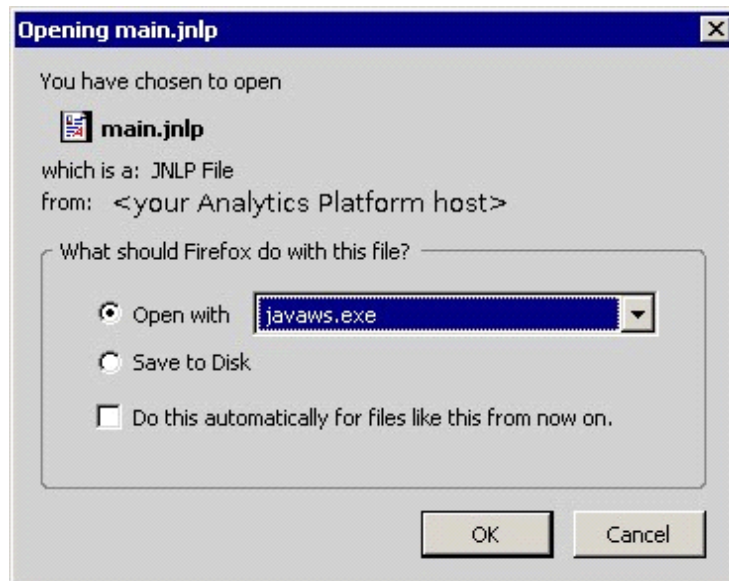
- When prompted with choices on what to do with the file, select **Other** from the **Open with** drop-down list.



- Navigate to where the SAS private JRE has been installed. For example, `c:\Program Files\SAS\Shared Files\JRE\1.4.2_09`.
- Navigate further down into the directory named `javaws`. Select `javaws.exe` and click **Open**.



6. Click **OK**.







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