



Sun Java™ System

Application Server 8.1  
Platform Edition

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Troubleshooting Guide

2005Q1

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U.S.A.

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# Preface

This guide describes common problems encountered when using the Sun Java™ System Application Server Server 8.1 Standard and Enterprise Editions, and how to solve them.

## Who Should Use This Book

The *Troubleshooting Guide* is intended for developers and administrators who use the Sun Java™ System Application Server to assemble and deploy distributed and Web-based applications.

- Java APIs as defined in the Java™ Servlet, JavaServer Pages™ (JSP™), Enterprise JavaBeans™ (EJB™), and Java™ Database Connectivity (JDBC™) specifications
- The SQL structured database query languages
- Relational database concepts

## How This Book Is Organized

This book describes workarounds for some problems you may encounter when configuring, using, or deploying applications with the Sun Java™ System Application Server 8.1 EE or PE. The following table summarizes the content of this book.

**Table 1**    How This Book Is Organized

Chapter	Description
Chapter 1, Overview	Provides a general overview of the troubleshooting process.
Chapter 2, Common Problems	Covers the most common problems you may encounter when using the product.
Chapter 4, Security Problems	Covers problems related to security settings.
Chapter 5, Frequently Asked Questions	Covers commonly asked questions about Application Server software.

# Conventions Used in This Book

The tables in this section describe the conventions used in this book.

## Typographic Conventions

The following table describes the typographic changes used in this book.

**Table 2**    Typographic Conventions

Typeface	Meaning	Examples
AaBbCc123 (Monospace)	API and language elements, HTML tags, web site URLs, command names, file names, directory path names, onscreen computer output, sample code.	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. % You have mail.
<b>AaBbCc123</b> (Monospace bold)	What you type, when contrasted with onscreen computer output.	% <b>su</b> Password:
<i>AaBbCc123</i> (Italic)	Book titles, new terms, words to be emphasized.  A placeholder in a command or path name to be replaced with a real name or value.	Read Chapter 6 in the <i>User's Guide</i> .  These are called <i>class</i> options.  Do <i>not</i> save the file.  The file is located in the <i>install-dir/bin</i> directory.

## Symbols

The following table describes the symbol conventions used in this book.

**Table 3** Symbol Conventions

Symbol	Description	Example	Meaning
[ ]	Contains optional command options.	ls [-l]	The -l option is not required.
{   }	Contains a set of choices for a required command option.	-d {y n}	The -d option requires that you use either the y argument or the n argument.
-	Joins simultaneous multiple keystrokes.	Control-A	Press the Control key while you press the A key.
+	Joins consecutive multiple keystrokes.	Ctrl+A+N	Press the Control key, release it, and then press the subsequent keys.
>	Indicates menu item selection in a graphical user interface.	File > New > Templates	From the File menu, choose New. From the New submenu, choose Templates.

## Default Paths and File Names

The following table describes the default paths and file names used in this book.

**Table 4** Default Paths and File Names

Term	Description
<i>IdentityServer-base</i>	Represents the base installation directory for Identity Server. The Identity Server 2004Q2 default base installation and product directory depends on your specific platform: Solaris™ systems: /opt/SUNWam Linux systems: /opt/sun/identity
<i>DirectoryServer-base</i>	Represents the base installation directory for Sun Java System Directory Server. Refer to the product documentation for the specific path name.
<i>ApplicationServer-base</i>	Represents the base installation directory for Sun Java System Application Server. Refer to the product documentation for the specific path name.

**Table 4** Default Paths and File Names (*Continued*)

Term	Description
<i>WebServer-base</i>	Represents the base installation directory for Sun Java System Web Server. Refer to the product documentation for the specific path name.

## Shell Prompts

The following table describes the shell prompts used in this book.

**Table 5** Shell Prompts

Shell	Prompt
C shell on UNIX or Linux	<i>machine-name</i> %
C shell superuser on UNIX or Linux	<i>machine-name</i> #
Bourne shell and Korn shell on UNIX or Linux	\$
Bourne shell and Korn shell superuser on UNIX or Linux	#
Windows command line	C:\

## Related Documentation

The <http://docs.sun.com><sup>SM</sup> website enables you to access Sun technical documentation online. You can browse the archive or search for a specific book title or subject.

## Books in This Documentation Set

The Sun Java System Application Server Standard and Enterprise Edition manuals are available as online files in Portable Document Format (PDF) and Hypertext Markup Language (HTML).

The following table lists tasks and concepts described in the Sun Java™ System Application Server manuals. The manuals marked (*updated for 8 2004Q5*) have been updated for the Sun Java System Application Server Standard and Enterprise Edition 8 2004Q5 release. The manuals not marked in this way have not been updated since the version 8 Enterprise Edition release.

**Table 6** Books in This Documentation Set

Book Title	Description
<i>Release Notes</i>	Late-breaking information about the software and the documentation. Includes a comprehensive, table-based summary of the supported hardware, operating system, JDK, and JDBC/RDBMS.
<i>Quick Start Guide</i>	How to get started with the Sun Java System Application Server product.
<i>Installation Guide</i>	Installing the Sun Java System Application Server software and its components.
<i>Deployment Planning Guide</i>	Evaluating your system needs and enterprise to ensure that you deploy Sun Java System Application Server in a manner that best suits your site. General issues and concerns that you must be aware of when deploying an application server are also discussed.
<i>Developer's Guide</i>	Creating and implementing Java™ 2 Platform, Enterprise Edition (J2EE™ platform) applications intended to run on the 2004Q4 Beta Sun Java System Application Server that follow the open Java standards model for J2EE components and APIs. Includes general information about developer tools, security, assembly, deployment, debugging, and creating lifecycle modules.
<i>J2EE 1.4 Tutorial</i>	Using J2EE 1.4 platform technologies and APIs to develop J2EE applications and deploying the applications on the Sun Java System Application Server.
<i>Administration Guide</i>	Configuring, managing, and deploying the Sun Java System Application Server subsystems and components from the Administration Console.
<i>High Availability Administration Guide</i>	Post-installation configuration and administration instructions for the high-availability database.
<i>Administration Reference</i>	Editing the Sun Java System Application Server configuration file, <code>domain.xml</code> .
<i>Upgrade and Migration Guide</i>	Migrating your applications to the new Sun Java System Application Server programming model, specifically from Application Server 6.x and 7. This guide also describes differences between adjacent product releases and configuration options that can result in incompatibility with the product specifications.
<i>Performance Tuning Guide</i>	Tuning the Sun Java System Application Server to improve performance.
<i>Error Message Reference</i>	Solving Sun Java System Application Server error messages.
<i>Reference Manual</i>	Utility commands available with the Sun Java System Application Server; written in manpage style. Includes the <code>asadmin</code> command line interface.

## Other Server Documentation

For other server documentation, go to the following:

- Directory Server documentation  
[http://docs.sun.com/coll/DirectoryServer\\_04q2](http://docs.sun.com/coll/DirectoryServer_04q2)
- Web Server documentation  
[http://docs.sun.com/coll/S1\\_websvr61\\_en](http://docs.sun.com/coll/S1_websvr61_en)
- Application Server documentation  
[http://docs.sun.com/coll/s1\\_asseu3\\_en](http://docs.sun.com/coll/s1_asseu3_en)
- Web Proxy Server documentation  
<http://docs.sun.com/prod/s1.webproxys#hic>

## Accessing Sun Resources Online

For product downloads, professional services, patches and support, and additional developer information, go to the following:

- Download Center  
<http://www.sun.com/software/download/>
- Professional Services  
<http://www.sun.com/service/sunps/sunone/index.html>
- Sun Enterprise Services, Solaris Patches, and Support  
<http://sunsolve.sun.com/>
- Developer Information  
<http://developers.sun.com/prodtech/index.html>

## Contacting Sun Technical Support

If you have technical questions about this product that are not answered in the product documentation, go to <http://www.sun.com/service/contacting>.

## Related Third-Party Web Site References

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# Overview

This chapter provides a description of the tools, methods, and information sources available for troubleshooting the Sun Java™ System Application Server Server 8.1 Platform Edition. Guidelines for evaluating and investigating a problem are included.

- [Planning Ahead](#)
- [Identifying the Problem](#)
- [Seeking a Solution](#)

## Planning Ahead

As applications get deployed, undeployed, and redeployed, and as you experiment with different server configuration settings, there may be times when your server gets into a confused or unstable state. In such cases, it is useful to have a previously saved working configuration on which to fall back. This is not problem solving, per se, but rather a way to avoid problems in the first place.

The Application Server `asadmin` command includes a `backup-domain` option that backs up the domain(s) you specify. Use this option to take periodic “snapshots” of your server configuration. Then, if necessary, use the `restore-domain` option to restore one or more domains to a known working state.

Refer to the *Application Server 8.1 Administration Guide* for complete instructions on using the `asadmin backup-domain` and `restore-domain` options. Briefly, however, for the purposes of this Troubleshooting Guide, use the following procedure to backup and restore a server configuration:

1. Start the Application Server.

```
install_dir/bin/asadmin start-domain domain_name
```

2. Stop the domain.

```
install_dir/bin/asadmin stop-domain domain_name
```

3. Back up the domain.

```
install_dir/bin/asadmin backup-domain domain_name
```

Backed up directories are stored by default in the *install\_dir/backups* directory.

4. Make changes to the Application Server configuration and/or domain(s), as desired.

5. If necessary, restore the server and/or domain configuration to the state saved in Step 3, above.

```
install_dir/bin/asadmin restore-domain --filename backup_file domain_name
```

## Identifying the Problem

J2EE application servers are typically deployed in complex and highly sophisticated operating environments. The Sun Java™ System Application Server covers a broad range of technologies, including Java, Java servlets, XML, JSP, JDBC data sources, EJB technology, and more. Other products and tools associated with the Application Server are LDAP, Web Server, Sun ONE Message Queue, deployment and migration tools, and so on. Understanding and diagnosing complex issues involving so many disparate components requires thorough knowledge and a careful diagnostic process.

Gathering any or all of the following information will make it easier to classify a problem and search for solutions. Note that operating system utilities, such as `pkginfo` and `showrev` on Solaris and `rpm` on Linux, are helpful in gathering system information.

1. What are the exact version numbers of the operating system and products installed?
2. Have any patches been applied? If so, specify product and operating system patch numbers.
3. How is the system configured?
4. What system resources does the system have (memory, disk, swap space, and so on)?

5. How many application servers, web servers, and directory servers are installed?
6. How is the web server connected to Application Server? On the same machine or not?
7. How is the Application Server connected to the directory server?
8. Are Sun Java™ Systems in a cluster or not?
9. Was any upgrade done? If so, what were source and target versions?
10. Was a migration done? If so, what were source and target versions?
11. Have any new applications been deployed?
12. Is SSL enabled or not?
13. What versions of the HADB and the backend database are being used?
14. What JDBC driver is being used to access the database?
15. What JDK version is being used?
16. What are the JVM heap, stack, and garbage collection-related parameters set to?
17. What are the JVM options?
18. What third-party technologies are being used in the installation?
19. Are the interoperating component versions in compliance with the compatibility matrix specified in the release notes?

After gathering this information:

- Collect web server error and access log data (web server instance-specific).
- Collect any Application Server stack traces. Note that a fresh set of logs associated with the specific problem should be run. This avoids scanning gigabytes of irrelevant log information.
- Determine the sequence of events that occurred when the problem first appeared, including any steps that may already have been taken to resolve the problem.

# Seeking a Solution

After identifying the problem and formulating a preliminary hypothesis of what may be wrong, you are ready to do some investigation.

The following topics are addressed in this section:

- [Verify System Configuration](#)
- [Evaluate Messages](#)
- [Examine Log Files](#)
- [See if the Problem has been Solved Before](#)
- [Search the Product Documentation](#)
- [Search the Knowledge Base](#)
- [Search or Participate in the Online Forum](#)
- [Contact Support](#)

## Verify System Configuration

Sometimes the most obvious solutions are overlooked, and so the first step is to verify the system configuration. Refer to the *Sun Java™ System Application Server 8.1 Release Notes* for the most up-to-date system requirements and dependencies.

## Evaluate Messages

Messages generally include information about the attempted action, the outcome of the action, and, if applicable, the cause of jeopardy or failure.

### Types of Messages

The log files contain the following general types of message entries:

- **Error** – These messages mark critical failures that cause status to be reported as Failed. Error messages generally provide detailed information about the nature and the cause of the problem that occurred.
- **Warning** – These messages mark non-critical failures. Warning messages generally contain information about the cause and the nature of the failure, and also provide possible remedies.

- **Information** – These messages mark normal completion of particular tasks.

## Error Messages

A problem is often accompanied by an error message that prevents the application from proceeding.

- In some cases, the message is very clear about what is wrong and what needs to be done, if anything, to fix it. For example, if you start a domain using the `asadmin start-domain` command, then inadvertently issue the same command again after the domain has started, the following message is displayed:

```
userD:\Sun\studio5_se\appserver8\bin>asadmin start-domain
Domain already started : domain1
Domain domain1 Started.
```

In this case, the message gives clear guidance and the problem can be disregarded.

- Sometimes an error message gives only general information about the problem or solution, or suggests multiple possibilities. For example:

```
[16/Jun/2003:22:20:50] SEVERE ( 2204): WEB0200: Configuration error in
web module [JAXBProjectStudio] (while initializing virtual server
[server1])
```

```
com.ipplanet.ias.config.ConfigException: Failed to load deployment
descriptor for: JAXBProjectStudio cause: java.io.FileNotFoundException:
```

In this case, the problem is not obvious, or there might be multiple things wrong. You might have to consider various possibilities and perhaps a number of solutions. If the proposed fix is time consuming or costly, take steps to ensure that the fix is likely to be correct before actually doing anything.

- Some error messages are either not helpful or provide little guidance; for example:

```
[23/Jun/2003:16:50:45] WARNING ( 1972): for host 127.0.0.1 trying to GET
/SupplierServiceClient1/SupplierServiceClient1_SOAP.html, send-file
reports: HTTP4144: error sending
D:/Sun/studio5_se/appserver8/domains/domain1/server1/applications/j2ee-
modules/SupplierServiceClient1_1/SupplierServiceClient1_SOAP.html
(Overlapped I/O operation is in progress.) status=1:5
```

In this case, there is very little information to go on. It is especially important to identify the exact situation that caused the error, and what the symptoms are before proceeding.

For descriptions of all the Application Server error messages, refer to the *Sun Java™ System Application Server Error Messages Reference* at the following location:

[http://docs.sun.com/db/coll/ApplicationServer8\\_04q4](http://docs.sun.com/db/coll/ApplicationServer8_04q4)

## Examine Log Files

A number of the Application Server subsystems create log files and log their events to these files. The primary purpose of these log files is to provide troubleshooting information.

In addition to the message text, a logged message provides the following information:

- Date and time of the event
- Log level for the event – Application Server-specified log level ID or name
- Process identifier (PID) – PID of the Application Server process
- (optional) Virtual server identifier (VSID) – VSID that generated the message
- Message identifier (MID) – subsystem and a four digit integer
- Message data

The specific logs associated with each Application Server problem area are discussed in the associated chapters of this manual.

## Log Levels

The Application Server has many log levels that can be set in the Administration interface (FINEST, FINER, FINE, CONFIG, INFO, WARNING, SEVERE, ALERT, and FATAL). All messages are logged when the log level is set to FINEST and only serious error messages appear if the log level is set to FATAL.

Note that the more detailed log levels (FINEST, FINER, FINE) can generate high volumes of log information for certain events, which may make it appear at first glance that there is an error condition when in fact there is not.

All messages with a log level less than the default level of INFO (FINEST, FINER, FINE, and CONFIG) provide information related to debugging and must be specifically enabled. Instructions for doing this are contained in the *Sun Java™ System Application Server Administrator's Guide*.

In addition to the standard JDK log levels, the Application Server has added log levels designed to map more intuitively to the Application Server log file (`server.log`) and to tightly integrate with Solaris. The log levels `ALERT` and `FATAL` are specific to the Application Server and are not implemented in the JDK1.4 logging API.

## Log Options

The Administration interface provides the following two logging options:

- **Option 1** – Log `stdout` (`System.out.print`) content to the event log
- **Option 2** – Log `stderr` (`System.err.print`) content to the event log

When these options are set, `stdout` and `stderr` messages are written to the `server.log` file. (The event log is a `syslog` daemon on Solaris.)

If the above options are not set:

- Anything written to `stdout` or `stderr` (that is, using `System.out` or `System.err`) will not appear in the logs.
- Messages logged with the JDK logger will appear in the logs.
- Messages written to `stdout` or `stderr` appear with the `INFO` level, but do not have a message ID.

## Client Side Logging

The Application Client Container (ACC) has its own log service and can only log to a local file. The ACC typically runs in its own process, on a different host from the Sun ONE Application Server. It has its own logging infrastructure and its own log file. The `sun-acc.xml` file contains the ACC configuration. Refer to the *Sun Java™ System Application Server Developer's Guide to Clients* for more information.

## Obtaining a Thread Dump

This section explains how to obtain a thread dump for Application Server 8.1. By default, the server dumps a core file and restarts with the `-Xrs java-option` flag in the `server.xml` file.

1. Verify that the `server.xml` file for the affected server instance does not include the `-Xrs java-option` flag. Remove the `-Xrs java-option` flag if it exists.
2. If the option is changed, restart the server instance.
3. Use the `ps` command to determine the `java` and/or `appservDAS` processes under which the application server is running.

4. Run the following command on the application server instance:

```
kill -3 pid
```

The `kill` command redirects the thread dump to the `server.log` file for server the instance.

## See if the Problem has been Solved Before

A good initial step is to scan this *Troubleshooting Guide* to see if the problem is addressed here. If so, select the appropriate solution. Many of the solutions contain references to other documents in the Application Server document collection for additional details, explanations, or examples.

## Search the Product Documentation

Start by reading the Release Notes for the version of the product you are troubleshooting.

The documentation for this Application Server product release is available at:

<http://docs.sun.com/db/coll/ApplicationServer81>

Descriptions of the Application Server manuals are listed in “[Conventions Used in This Book.](#)”

## Search the Knowledge Base

The Knowledge Base is a collection of articles on product issues that provide information helpful for troubleshooting. To access the Knowledge Base:

1. Go to SunSolve.  
<http://sunsolve.sun.com/pub-cgi/show.pl?target=home>
2. Under SunSolve Collections, click the Search Collections link.
3. Select the checkbox for the collection(s) to search.
4. Click Next.
5. Enter the search criteria.
6. Click Go.

## Search or Participate in the Online Forum

Browse directly in any of the online forums, or log in and register to start posting messages. The Application Server online forum is available at:

<http://swforum.sun.com/jive/index.jsp?cat=7>

## Contact Support

When necessary, gather together the information you have acquired and contact technical support, as described in “[Contacting Sun Technical Support](#).”



# Common Problems

This section covers the most common problems you may encounter when using the Application Server:

- `asadmin start-domain` Command Fails
- Automatically Restarting a Domain or Node Agent on Reboot
- Cannot Find Log Files
- Accessing Local Server Fails (`http://localhost:8080`)
- Accessing Remote Server Fails
- Cannot Access the Administration Console
- Cannot Access a Server Application
- Server Will Not Start on Windows (Port Conflict)
- Port Conflicts Debugging Multiple Instances on the Same Server
- Two Server Instances Bind to Same Port on Windows
- Error: "System cannot find the path specified"
- Application Generates `java.lang.UnsupportedOperationException: persistence.support.JDODataStoreException`
- Using `asadmin set` Command May Produce Unexpected Results
- Cannot Undeploy Or Redeploy Application With Open Streams to Jar Files (Windows Only)
- Cannot Reinstall Application Server After Manual Deletion of Directories
- Cannot Produce a JVM Thread Dump After Server Crash

# asadmin start-domain Command Fails

The command `asadmin start-domain` fails with one of the following errors:

- **Error: "CLI143 There is more than one domain..."**
- **Error: "Could Not Start Domain"**

## Error: "CLI143 There is more than one domain..."

### Description

When issued with no arguments, the command `asadmin start-domain` fails with the error:

```
CLI143 There is more than one domain in C:\Sun\AppServer\domains.  
Please use operand to specify the domain.  
CLI156 Could not start the domain null.
```

This error occurs when there is more than one domain in the domains directory, none of them is named `domain1`, and no domain is specified with the `start-domain` command.

### Solution

Specify the domain when issuing the `start-domain` command:

```
asadmin start-domain domain1
```

## Error: "Could Not Start Domain"

### Description

This message comes from Application Server 8. The full message looks like either:

```
Could not start the domain.  
There are no domains.
```

*or*

```
Could not start the domain.  
No default domain. Need to enter a domain.
```

This error occurs when Application Server 8 is installed on the same system, and its `asadmin` command (at `/usr/sbin`) is found on the `PATH` before the `asadmin` command for Application Server 8 at `install_dir/bin`. The situation is especially likely to occur on Solaris/Linux systems when `.` is not specified as part of the `PATH` variable. Without `.` in the `PATH`, the `asadmin` command in `/usr/sbin` is found first, even when the current directory is `install_dir/bin`.

## Solution

Make sure `install_dir/bin` is in the `PATH` ahead of `/usr/sbin`, or that `.` is in the `PATH` ahead of `/usr/sbin` if you access `asadmin` by changing directories to `install_dir/bin`. Alternatively, if you do change to `install_dir/bin` to run `asadmin`, be sure to include `./` in the command name; for example:

```
cd install_dir/bin
./asadmin
```

# Automatically Restarting a Domain or Node Agent on Reboot

If your domain or node agent is stopped unexpectedly (for example, if you need to restart your machine), you can configure your system to automatically restart the domain or node agent on reboot.

- [Restarting Automatically on UNIX Platforms](#)
- [Restarting Automatically on the Microsoft Windows Platform](#)

## Restarting Automatically on UNIX Platforms

### Restarting a Domain

To restart your domain on a UNIX platform, add a line containing the appropriate `asadmin start-domain` command to your `/etc/inittab` file. If you use `/etc/rc.local`, or your system's equivalent, place a the desired `asadmin` command in `/etc/rc.local`.

For example, to restart `domain1` for an Application Server installed in the `/opt/SUNWappserver` directory, using a password file called `password.txt`, add the following line to `/etc/inittab` or `/etc/rc.local`:

```
das:3:respawn:/opt/SUNWappserver/bin/asadmin start-domain --user admin
--passwordfile /opt/SUNWappserver/password.txt domain1
```

Be sure to put the text on one line. The first three letters are a unique designator for the process and can be altered.

## Restarting a Node Agent

To restart a node agent, the syntax is similar. For example, to restart agent1 for an Application Server installed in the /opt/SUNWappserver directory using a password file called password.txt, add the following line to /etc/inittab or /etc/rc.local:

```
das:3:respawn:/opt/SUNWappserver/bin/asadmin start-node-agent --user admin
--passwordfile /opt/SUNWappserver/password.txt agent1
```

## Restarting Automatically on the Microsoft Windows Platform

To restart automatically on Microsoft Windows, create a Windows Service. Use the appservService.exe and appservAgentService.exe executables shipped with Sun Java™ System Application Server in conjunction with the Service Control command (sc.exe) provided by Microsoft.

- The sc.exe command comes with Windows XP and is either located in the C:\windows\system32 directory or C:\winnt\system32 directory.
- As of this writing, the Windows 2000 sc.exe is available for download at: <ftp://ftp.microsoft.com/reskit/win2000/sc.zip>. For more information on using sc.exe, see:

[http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dndllpro/html/msdn\\_scmslite.asp](http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dndllpro/html/msdn_scmslite.asp).

Use appservService.exe and appservAgentService.exe as follows:

```
C:\winnt\system32\sc.exe create service_name binPath=
\"fully_qualified_path_to_appservService.exe \"fully_qualified_path_to_asadmin.bat start_command\"
\"fully_qualified_path_to_asadmin.bat stop_command\" start= auto DisplayName=
\"display_name\"
```

## Starting and Stopping a Domain

To create a service called `SunJavaSystemAppServer DOMAIN1` that starts and stops `domain1` using password file `C:\Sun\AppServer\password.txt`, run the following command:

```
C:\windows\system32\sc.exe create domain1 binPath=
"C:\Sun\AppServer\lib\appservService.exe
\"C:\Sun\AppServer\bin\asadmin.bat start-domain --user admin --passwordfile
C:\Sun\AppServer\password.txt domain1\" \"C:\Sun\AppServer\bin\asadmin.bat
stop-domain domain1\" start= auto DisplayName= "SunJavaSystemAppServer
DOMAIN1"
```

## Starting and Stopping a Node Agent

To create a service that starts and stops the node agent `agent1`, run the following command:

```
C:\windows\system32\sc.exe create agent1 binPath=
"C:\Sun\AppServer\lib\appservAgentService.exe
\"C:\Sun\AppServer\bin\asadmin.bat start-node-agent --user admin
--passwordfile C:\Sun\AppServer\password.txt agent1\"
\"C:\Sun\AppServer\bin\asadmin.bat stop-node-agent agent1\" start= auto
DisplayName= "SJESAS_SE8.1 AGENT1"
```

---

### NOTE

The start and stop commands entered as part of the `binPath=` parameter must have the correct syntax. To test, run the commands from the command prompt. If the commands do not properly start or stop the domain or node agent, the service will not work correctly.

Also, do not use a mixture of `asadmin` start and stop commands and service start and stops. Mixing the two can cause the server status to be out of sync. For example, the service might not show that the component has started even though the component is not running. To avoid this situation, always use the `sc.exe` command to start and stop the component when using services.

---

## Security for Automatic Restarts

Handle the password and master password required when starting in one of the following ways:

- On Microsoft Windows, configure the service to ask the user for the password.
  - a. In the Services Control Panel, double-click the service you created.

- b. In the Properties window, click the Log On tab.
- c. Check “Allow service to interact with desktop” to prompt for the required passwords when starting the component.

You have to log in to see the prompts, and entries are not echoed back as you type them. This method is the most secure way to use the services option, but user interaction is required before the service becomes available.

If the “interact with desktop” option is not set, the service stays in a “start-pending” state and appears to hang. Kill the service process to recover from this state.

- On Windows or UNIX, create a domain using the `--savemasterpassword=true` option and create a password file to store the admin password. When starting the component, use the `--passwordfile` option to point to the file that contains the password. The admin password can also be added by using the `--password` option with the `asadmin start` command. Be aware that this method is less secure because the admin password is stored in clear text.

For example:

- a. Create a domain with a saved master password. Using this syntax, you are prompted for the admin password and master password:

```
asadmin create-domain --adminport 4848 --adminuser admin
--savemasterpassword=true --instanceport 8080 domain1
```

- b. On Windows, create a service using a password file to populate the admin password:

```
C:\windows\system32\sc.exe create domain1 binPath=
"C:\Sun\AppServer\lib\appservService.exe
\"C:\Sun\AppServer\bin\asadmin.bat start-domain --user admin
--passwordfile C:\Sun\AppServer\password.txt domain1\"
\"C:\Sun\AppServer\bin\asadmin.bat stop-domain domain1\"
start= auto DisplayName= "SJESAS_PE8.1 DOMAIN1"
```

The path to the password file `password.txt` is `C:\Sun\AppServer\password.txt`. It contains the password in the following format:

```
AS_ADMIN_password=password
```

For example, for a password `adminadmin`:

```
AS_ADMIN_password=adminadmin
```

- c. On UNIX, use the `--passwordfile` option in the line you add to the `inittab` file:

```
das:3:respawn:/opt/SUNWappserver/bin/asadmin start-domain
--user admin --passwordfile /opt/SUNWappserver/password.txt domain1
```

The path to the password file `password.txt` is `/opt/SUNWappserver/password.txt`. It contains the password in the following format:

```
AS_ADMIN_password=password
```

For example, for a password `adminadmin`:

```
AS_ADMIN_password=adminadmin
```

- Creating a service using a password that is populated from a command line option:

```
C:\windows\system32\sc.exe create domain1 binPath=
"C:\Sun\AppServer\lib\appservService.exe
\"C:\Sun\AppServer\bin\asadmin.bat start-domain --user admin --password
adminadmin domain1\" \"C:\Sun\AppServer\bin\asadmin.bat stop-domain
domain1\" start= auto DisplayName= "SJESAS_PE8.1 DOMAIN1"
```

## Cannot Find Log Files

The following Application Server logs are useful for troubleshooting installation problems:

- **Server log file** – For troubleshooting server configuration and deployment problems
- **HTTP server access logs** – For troubleshooting HTTP server problems, and for tracing the activity of HTTP requests entering the Application Server instances

Both the installation and uninstallation programs create log files and log all installation and uninstallation events to these files. The primary purpose of these log files is to provide troubleshooting information.

In addition to installation program messages and log files, operating system utilities such as `pkginfo` and `showrev` on Solaris and `rpm` on Linux can be used to gather system information.

Log file entries include information about the attempted action, the outcome of the action, and, if applicable, the cause of failure. The log files contain the following types of message entries:

- **INFO** – These messages mark normal completion of a particular installation tasks.
- **WARNING** – These messages mark non-critical failures. Warning messages generally contain information about the cause and the nature of the failure, and also provide possible remedies.
- **ERROR** – These messages mark critical failures that cause installation or uninstallation status to be reported as Failed. Error messages generally provide detailed information about the nature and the cause of the problem that occurred.

The application server logs are located in *install\_dir*/domains/domain1/logs/.

## Accessing Local Server Fails (<http://localhost:8080>)

Things to check for this error include the following:

- [Did the Server Start?](#)
- [Was the Server Started at the Expected Port?](#)

### Did the Server Start?

#### Description

If the console window is still open, the expected message is:

```
Domain domain Started
```

where *domain* is the name of the default domain. This indicates that the default domain was started successfully.

If the console window is already closed, check for messages in the log file:

```
install_dir/domains/domain1/logs/server.log
```

If startup was successful, the expected message is similar to that on the console, and appears at the end of the log file:

```
[INFO][...][...][date&time][Application server startup complete .]
```

## Was the Server Started at the Expected Port?

### Description

The server might be running at a different port number than expected, either because it was intentionally installed there, or because another server was already running on the default port when the server was installed.

To determine which port number the server is actually using:

1. Examine the server's configuration file:

```
install_dir/domains/domain1/config/domain.xml
```

2. Find the `http-listener` element.
3. Inspect the value of the `port` attribute.

Be sure to enter the correct port number when invoking the server.

---

### NOTE

The server's default port number is 8080, however, there are a number of ways in which the expected value can change:

- A different port number was specified during installation.
  - A previous installation exists.
  - If the specified port number is already taken by another application when the server is started, the port number rolls forward to the next available number. For example, if a server is already running on the default 8080 port, the new Application Server instance uses port number 8081. If two servers are running, the port number rolls to 8082, and so on.
- 

## Accessing Remote Server Fails

When attempting to open the start page of the Application Server, the initial screen does not appear.

Things to check include the following:

- [Is the Server Available Locally?](#)
- [Is the Proxy Setting Causing a Problem?](#)

## Is the Server Available Locally?

### Description

If the server cannot be accessed from the web, but it is running locally, then the server is actually running.

### Solution

To verify that the server is running locally:

1. Log on to the machine where the server is running.
2. Go to the local web page. For example, if 8080 is the default port, go to:

```
http://localhost:8080/
```

If the start page does appear, there is a problem with the web connection that prevents accessing the server remotely. If the start page does not appear, see [“Did the Server Start?” on page 18](#).

## Is the Proxy Setting Causing a Problem?

### Description

The server should be accessible directly from the host on which it is running (localhost); for example, using the default port, 8080:

```
http://localhost:8080/
```

### Solution

A server instance running on localhost may not be accessible if the server host machine is connected to the web through a proxy. To solve this problem, do one of the following:

- Set the browser to bypass the proxy server when accessing localhost. Refer to the browser's help system for information on how to do this.
- Use the fully-qualified host name or IP address of your system; for example:

```
http://myhost.mydomain.com:8080/
```

---

<b>NOTE</b>	To find the hostname and domain for the localhost machine: <ul style="list-style-type: none"><li>• <b>On Microsoft Windows</b> – On the desktop, right-click My Computer and select Properties from the pop-up menu. A System Properties dialog is displayed. Click Network Identification to see the computer name.</li><li>• <b>On Solaris or Linux</b> – Type <code>hostname</code> at the command prompt.</li></ul>
-------------	---

---

## Cannot Access the Administration Console

The Administration Console provides an interface for administrative functions. If the Administration Console is not accessible, it might be for one of several reasons.

- [Is the Application Server Running?](#)
- [Is the Administration Console Running on the Expected Port?](#)
- [Is the Security Manager Disabled?](#)

### Is the Application Server Running?

#### Description

The server must be running before the Administration Console can be accessed.

#### Solution

Review the information in [“Did the Server Start?” on page 18](#) to determine if the server is running.

## Is the Administration Console Running on the Expected Port?

### Description

The default port number for the EE and SE Administration Console is 4849; for the PE Administration Console it is 4848. Also note that the URL for the EE and SE console requires secure HTTP (`https://servername:4849/`), whereas the PE console uses standard HTTP (`http://servername:4848/`). However, it could be running on a different port number than expected, either because it was intentionally installed there, or because that port was taken when the server was started.

### Solution

Refer to [“Was the Server Started at the Expected Port?” on page 19](#) for guidelines on verifying the port on which the Administration Console is running, and be sure to enter the correct port number and HTTP protocol when invoking the Administration Console.

## Is the Security Manager Disabled?

### Description

According to the *J2EE 1.4 Specification*, the Security Manager is not optional; it must be enabled in the Application Server. Since there is no configuration interface in the Application Server for disabling the Security Manager, it can only be disabled by directly modifying the `domain.xml` configuration file in such a way that the following line is removed:

```
<jvm-option>-Djava.security.policy=yourPolicy</jvm-option>
```

### Solution

The `-Djava.security.policy=yourPolicy` option must be present in the `domain.xml` file to access the Administration Console.

# Cannot Access a Server Application

If a particular application cannot be accessed through the Application Server, some things to check include the following:

- [Is the Application Server Running?](#)
- [Was Application Deployment Successful?](#)

## Is the Application Server Running?

### Description

If the Application Server is not running, applications will not be accessible.

### Solution

Review the information in [“Did the Server Start?” on page 18](#) to determine if the server is running. The server must be running before a server application can be accessed.

## Was Application Deployment Successful?

### Description

An application must be successfully deployed before it can be accessed.

### Solution

Check the server's log file:

```
install_dir/domains/domain1/server.log
```

## Server Will Not Start on Windows (Port Conflict)

If a message similar to the following is displayed when starting the Application Server on Microsoft Windows, a server port conflict has occurred:

```
Address already in use
```

This error occurs when another application is running on the Application Server port (default 8080), or because a previous instance of the Application Server did not shut down cleanly.

Other things to check include the following:

- [Is Another Application Running on the Server's Port?](#)
- [Has an Ungraceful Shutdown Occurred on a Previously Running Server?](#)

## Is Another Application Running on the Server's Port?

If another application is using the server's port, stop the other application, then restart the Application Server.

---

<b>NOTE</b>	The installer attempts to avoid port conflicts by choosing the next available port when the default port is in use—but that only works if application using the default port was running when the Application Server was installed.
-------------	---

---

## Has an Ungraceful Shutdown Occurred on a Previously Running Server?

Use the `asadmin stop-domain` command to stop the server, or explicitly kill the Java process and then restart the Application Server.

# Port Conflicts Debugging Multiple Instances on the Same Server

### Description

Port conflict errors can occur when debugging multiple instances on the same server that are part of the same cluster.

## Solution

Modify the `domain.xml` file to remove the `address` attribute from the `-Xrunjdpw` option in the `java-config` element for the cluster. This results in the JVM choosing a random debug port for the instance. The port number chosen for the instance is displayed in the server log when it is started.

## Example

### *Before*

```
debug-options="-Xdebug
-Xrunjdpw:transport=dt_socket,server=y,suspend=n,address=9009"
```

### *After*

```
debug-options="-Xdebug -Xrunjdpw:transport=dt_socket,server=y,suspend=n"
```

# Two Server Instances Bind to Same Port on Windows

## Description

This problem only occurs on Windows 2000/XP systems with the Application Server EE (not PE) software, and is due to a known Windows security flaw rather than a problem with the Application Server itself.

The problem occurs when two or more instances of the Application Server are created using the same port number for the `instanceport` option; for example:

```
asadmin create-domain -adminport 5001 <options> -instanceport 6001 <domain>
asadmin create-domain -adminport 5002 <options> -instanceport 6001 <domain>
```

When the two domains are started on a UNIX/Linux system, a port conflict error is thrown and the second instance fails to start. However, when the two domains are started on Windows 2000/XP, no error is thrown, both server instances start, but only the first instance is accessible at the specified port. When that first server instance is subsequently shut down, the second instance then becomes accessible. Moreover, when both instance are running, the Windows `netstat` command shows the duplicate listeners as active, but only the first listener can respond to requests.

Error: "System cannot find the path specified"

### Solution

Be sure to use unique port numbers for all server instances on Windows systems.

## Error: "System cannot find the path specified"

This error message occurs when attempting to start the server after deleting the J2SE directory that was specified during installation. This situation generally occurs after being informed during the install that the J2SE platform needs an upgrade, and the upgrade takes place after the Application Server installation.

### Solution 1

To use the new J2SE for all domains, change the AS\_JAVA variable in `asenv.conf` (Solaris/Linux), or `asenv.bat` (Windows).

### Solution 2

The J2SE version can be changed on a per-domain basis by modifying the `java-home` attribute for the `java-config` element in the domain's `domain.xml` file.

```
<java-config ...  
  java-home="path"  
...>
```

### Solution 3

A more time-intensive solution is to uninstall and then reinstall the server.

## Application Generates Error `persistence.support.JDODataStoreException`

### Description

A `com.sun.jdo.api.persistence.support.JDODataStoreException` is generated by an application, with a nested `java.sql.SQLException` indicating a duplicate primary key.

Even if the application is checking for a `CreateException`, it does not see one. The Enterprise JavaBeans specification requires a `CreateException` to be thrown only if two beans with the same primary key are created in the same transaction, so a `CreateException` is not thrown on transaction rollback if two entity beans with duplicate primary keys are created.

### Solution

If an application creates an entity bean with a duplicate primary key, check to see if the primary key exists by calling `findByPrimaryKey` before calling `create`.

## Using `asadmin set` Command May Produce Unexpected Results

### Description

Unexpected results are returned when setting variables in a command, such as:

```
asadmin set name=${a-b}
```

In this case, `name` is set to `b`, not `{a-b}` because the shell syntax `${a=b}` is interpreted as “if the variable `a` is unset, substitute the value `b`, otherwise substitute the value of `a`.” This is standard shell behavior.

### Example

```
asadmin set default-config.http-service.http-listener.http-listener-1.port=
${http-listener-1-port}
```

In this case, `default-config.http-service.http-listener.http-listener-1.port` is set to `listener-1-port`, which is invalid.

## Cannot Undeploy Or Redeploy Application With Open Streams to Jar Files (Windows Only)

### Description

On Windows systems, after running an application, subsequent attempts to undeploy it or redeploy it throw exceptions about the server being unable to delete a file or rename a directory.

On Windows systems, an application may use `getClass().getResource` or `getResourceAsStream` methods to locate a resource inside the application, particularly in jar files that are in the application or accessible to it. If the streams remain open, subsequent attempts to redeploy or undeploy the application can fail. In addition, the Java runtime by default caches streams to jar files for performance reasons.

## Solution

Be sure to close streams opened by your applications. Also, if an application needs to be redeployed or undeployed repeatedly, and also needs to obtain a resource from a jar file using `getResource` or `getResourceAsStream`, consider using `getClass().getResource` which returns a URL object, then invoke the `url.setUseCaches` method to turn off caching for that jar file, and then use `url.getInputStream()` to obtain the stream.

Although turning off caching for accesses to the jar file can slow down performance, this approach does allow the application to be undeployed or redeployed. Note also that if the `getClass().getResourceAsStream` method is used instead, then the jar file in which the resource is located will be cached (this is the default Java runtime setting) and remain open until the server is stopped.

# Cannot Reinstall Application Server After Manual Deletion of Directories

## Description

If the Application Server directories are deleted manually rather than by means of the included `uninstall` the program, subsequent attempts to reinstall the Application Server in the same directory fail. This is because the installation directory information stored in `/tmp/productregistry` file remains even though the program directories have been removed.

## Solution 1

Remove Application Server directory information from the `<location>` property entries in the `/tmp/productregistry` file; for example, change:

```
<location>/opt/SUNWappserver/jdk</location>
```

to

```
<location></location>
```

## Solution 2

Reinstall the Application Server in a different directory.

# Cannot Produce a JVM Thread Dump After Server Crash

## Description

If the Application Server crashes, the server dumps a core file and, by default, restarts with the `-Xrs` flag, which prevents the dump of a JVM thread dump.

## Solution

1. Comment out the `-Xrs` flag in the `server.xml` file for the Application Server.
2. Kill the server process (`kill -3` on UNIX; Ctrl+Brk on Windows).







# Security Problems

This chapter covers problems that you may encounter as a result of security settings:

- [java.security.AccessControlException: Access Denied Error](#)
- [javax.ejb.AccessLocalException: Client Not Authorized Error](#)
- [Authentication is Not Working With the Solaris Realm](#)
- [Mutual Authentication Not Working With the Application Client](#)

## java.security.AccessControlException: Access Denied Error

### Description

The following error occurs from an application client or in the server.log:

```
java.security.AccessControlException: access denied  
(java.util.PropertyPermission name write...
```

There is a permissions issue in the policy files. Either the `client.policy` for the application client or the `server.policy` for server side components does not have permission to set the property.

### Solution

Add the permission in `client.policy` (for the application client), or in `server.policy` (for EJB/web modules) for the application that needs to set the property. By default, applications only have “read” permission for properties.

For example, to grant read/write permission for all the files in the codebase directory, add or append the following to `client.policy` or `server.policy`:

```
grant codeBase "file:../../build/sparc_SunOS/sec/-" {  
    permission java.util.PropertyPermission "*", "read,write";  
};
```

## javax.ejb.AccessLocalException: Client Not Authorized Error

### Description

Role-mapping information is available in Sun-specific XML (for example, `sun-ejb-jar.xml`), and authentication is okay, but the following error message is displayed:

```
[...INFO|sun-appserver-pe8.0|javax.enterprise.system.container.ejb|...|  
javax.ejb.AccessLocalException: Client not authorized for this invocation.  
at com.sun.ejb.containers.BaseContainer.preInvoke(BaseContainer.java:...  
at com.sun.ejb.containers.EJBObjectInvocationHandler.invoke(...)
```

### Solution

Check whether the EJB module (`.jar`) or web module (`.war`) is packaged in an application (`.ear`) and does not have role-mapping information in application level, Sun-specific, `sun-application.xml`. For any application (`.ear`), security role-mapping information must be specified in `sun-application.xml`. It is acceptable to have both module-level XML and application-level XML.

## Authentication is Not Working With the Solaris Realm

Check whether the installation and server startup was performed as a local user, instead of as the root user. Always start the Application Server as the root user, because the Solaris realm works only with the root user. It was not designed to work with any other local user. Note also that role mapping can happen on the local user.

# Mutual Authentication Not Working With the Application Client

## Description

This failure can occur when the keystore and truststore properties are not set properly.

## Solution

Set the following properties on the JVM:

```
javax.net.ssl.keyStore=  
    <keystore-file-path>; javax.net.ssl.trustStore=<truststore-file-path>
```

To use the application client, set the environment variable VMARGS to the following value:

```
-Djavax.net.ssl.keyStore=  
    ${admin.domain.dir}/${admin.domain}/config/keystore.jks  
-Djavax.net.ssl.trustStore=  
    ${admin.domain.dir}/${admin.domain}/config/cacerts.jks
```



# Frequently Asked Questions

This section covers some common questions asked about the Application Server:

- [What Happens When No Server Side Realm is Configured?](#)
- [Can I Use a Pkcs12 Certificate for My Client Certificate?](#)
- [Can I See the TLS/SSL Handshake Information for an SSL Client?](#)
- [Can I Change the Keystore Password?](#)
- [How Do I Maintain a Session in JAX-RPC?](#)
- [How Do I Access the Naming Service From a Standalone Java Client?](#)
- [Are RMI-IIOP Stubs Needed to Access Remote EJBs?](#)
- [How Do I Change the Log Level for an Application Logger?](#)

## What Happens When No Server Side Realm is Configured?

When the application is configured (within XML files), but no server side realm is configured, the application is authenticated in the default realm. No error is thrown that indicates “No such realm.”

## Can I Use a Pkcs12 Certificate for My Client Certificate?

Is there a way to use my PKCS12 certificate for an SSL the application client or standalone client during mutual authentication?

No. You cannot use a PKCS12 certificate directly, but you can write your own client using the JSSE, which supports `storetype=PKCS12` (read only, no write to keystore).

## Can I See the TLS/SSL Handshake Information for an SSL Client?

Yes. Set the Java debugging property on the JVM. To see the handshake information from the application client, append the following:

```
-Djavax.net.debug=ssl,handshake to the VMARGS variable.
```

## Can I Change the Keystore Password?

Yes. Use the following J2SE properties to change the keystore password:

```
-Djavax.net.ssl.keyStorePassword=password  
-Djavax.net.ssl.trustStorePassword=password
```

Note that the keystore password must match the individual key passwords to perform operations on the keys, so you will need to change the keystore password with the property mentioned above and then change the password to each key to match that password.

## How Do I Maintain a Session in JAX-RPC?

Clients cannot maintain sessions with JAX-RPC endpoints. There is a client and server aspect to sessions, and it is not obvious how to set this up.

The situation is that a client makes a call to the service, and the server responds and sets a cookie on the connection. From then on, the client sends back that same cookie with each call and the server can check it.

A JAX-RPC stub normally ignores the cookie that comes back. When the `SESSION_MAINTAIN_PROPERTY` is set to `true`, it sends back whatever cookie the server set on it.

On the server side, you need to add one field to your class and a method that sets it. The endpoint must implement `javax.xml.rpc.server.ServiceLifecycle`, and two methods must be added: `destroy()` (which can be empty) and `init(Object context)`.

Add a `ServletEndpointContext` object to the endpoint; for example `myServletEndpointContext`. The `init(Object context)` method can be set as follows:

```
myServletEndpointContext = (ServletEndpointContext) context;
```

From then on, the business methods can access to the `HttpSession` with `myServletEndpointContext.getHttpSession()`. The first call to `getHttpSession` creates the session, if one does not already exist.

With this model, any method the client calls can get the session, set session attributes, get values from it, and so on. From then on, the client will send back the same cookie information.

For more information on the `HttpSession` object, see <http://java.sun.com/j2ee/1.4/docs/api/javax/servlet/http/HttpSession.html>

## How Do I Access the Naming Service From a Standalone Java Client?

To access the naming service from an application client:

1. Include `appserv-rt.jar` in the `CLASSPATH` when starting the client Java VM.

The JNDI bootstrapping machinery looks for a file called `jndi.properties`, which is located in `appserv-rt.jar`. This file contains all the bootstrapping properties for the Application Server's naming service. It is better to have these properties read from `appserv-rt.jar` than to hard-code them in either the client startup script or in the application code.

2. When accessing remote EJBs from a standalone client, it is not necessary to retrieve the client JAR from the deployment or to put it in the client JVM's `CLASSPATH`, because static RMI-IIOP stubs are not needed when using the Application Server naming service. This removes a step that was required in previous releases. (See [Are RMI-IIOP Stubs Needed to Access Remote EJBs?](#) for more details).
3. Code the client to use the default constructor `InitialContext` that does not require an argument. For example:

```
InitialContext ic = new InitialContext();
```

It is a common misconception that the client should be coded to explicitly reference the `CosNaming` service. `CosNaming` is only used for some kinds of Application Server objects, so doing this will not provide access to many of the kinds of resources you might need in the client such as JMS queues, connection

factories, and so on. Furthermore, explicit use of CosNaming bypasses the Application Server's naming service code. This often means that the client cannot take advantage of desirable value-added behavior built in to the Application Server's naming service.

4. Use the global JNDI name of the target resource when doing the lookup. `java:comp/env` cannot be used from standalone Java clients, because by definition such clients run outside of a J2EE container. The only client component in which `java:comp/env` can be used is in a J2EE Application Client.
5. If the client is running on a different host machine than the server instance, set the following system property when starting the Java VM:

```
-Dorg.omg.CORBA.ORBInitialHost=hostname_of_target_server
```

This value defaults to `localhost` so it is only needed if the client and server instance are not colocated. For example:

```
java -Dorg.omg.CORBA.ORBInitialHost=server1 ... com.foo.MyMainClass
```

6. By default, the client attempts to contact port 3700 to access the naming service in the server. Since 3700 is the default naming service port used by the Application Server, there is no additional port configuration needed in the client. In some cases, due to port conflicts, the server instance uses a different naming service port. The naming service port used by the server instance is listed in the `<iiop-listener id="orb-listener-1" port="3700">` element in `domain.xml`.

To change the naming service port used by the client, set the following system property when starting the client java VM:

```
-Dorg.omg.CORBA.ORBInitialPort=naming_port_of_target_server
```

## Are RMI-IIOP Stubs Needed to Access Remote EJBs?

No. Unlike previous releases of the Application Server, the current version does not require static RMI-IIOP stubs at runtime.

Removing this requirement provides the following benefits:

- Faster deployment and redeployment time for applications containing remote EJBs or clients of remote EJBs
- Fewer runtime errors caused by stub `CLASSPATH` configuration problems

In addition, the Application Server achieves these benefits without significant impact on runtime performance, while maintaining full RMI-IIOP interoperability.

The only scenario where RMI-IIOP stubs are still required is for standalone clients that explicitly instantiate an `InitialContext` for the `CosNaming` naming service. This is *not* the recommended approach for using the naming service in the Application Server. However, to maintain compatibility for these kinds of standalone clients, there is a deployment-time option that forces the generation of RMI-IIOP stubs in a way that matches previous releases. To use it, set

```
--generateterminstubs=true
```

when deploying with `asadmin` or the Administration Console. The RMI-IIOP stubs are placed in the `client.jar` file, just as they were in previous releases.

## How Do I Change the Log Level for an Application Logger?

Each application uses its own application logger to log messages. To configure the log level for a particular application, use one of two options:

- In the Admin GUI Log Level configuration page add a property with a property name representing the logger name, and the value representing one of seven log levels (`FINEST`, `FINER`, `FINE`, `CONFIG`, `INFO`, `WARNING`, `SEVERE`) or `OFF`.

For example, to change the log level of application logger named `com.X.Y` to `FINEST`, the property name would be `com.X.Y` and the property value would be `FINEST`. The change is reflected in the `domain.xml` file, and takes effect immediately. No Server restart is required.

- Directly add the property to the `<module-log-levels>` element in `domain.xml`, as shown below.

```
<module-log-levels admin="INFO" classloader="INFO" cmp="INFO"
cmp-container="INFO" configuration="INFO" connector="INFO" corba="INFO"
deployment="INFO"
ejb-container="INFO" javamail="INFO" jaxr="INFO" jaxrpc="INFO"
jdo="INFO" jms="INFO" jta="INFO" jts="INFO" mdb-container="INFO"
naming="INFO" node-agent="INFO"
resource-adapter="INFO" root="INFO" saaj="INFO" security="INFO"
server="INFO" synchronization="INFO" util="INFO" verifier="INFO"
web-container="INFO">
  <property name="com.X.Y" value="FINEST" />
</module-log-levels>
```



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