

Installation Guide

Sun™ ONE Application Server

Version 7

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Contents

About This Guide	7
Who Should Use This Guide	7
How This Guide is Organized	8
Using the Documentation	9
Documentation Conventions	11
General Conventions	11
Conventions Referring to Directories	12
Product Support	13
For More Information	14
Chapter 1 Preparing to Install	15
About Sun ONE Application Server Installation	15
Installation Components	16
Sun ONE Application Server	16
Administration Client	18
Sun ONE Message Queue	18
PointBase	18
Sample Applications	19
Sun ONE Studio 4.0, Enterprise Edition for Java	19
Java 2 Software Development Kit (J2SE)	19
Installation Methods	20
Graphical Interface Method	20
Command-Line Interface Method	20
Silent Mode	21
Installation Distributions of the Product	21
Evaluation Distribution	21
Development (Non-Evaluation) Distribution	22

Installation Distribution Summary	23
Packaging Models and Directory Structure	24
Bundled Installation on Solaris 9	24
Package-Based Installation on UNIX	25
Microsoft Windows and Evaluation Installations	25
System Requirements	25
Platform Requirements	26
Solaris Patches Required	27
Other Requirements and Limitations	27
For All Platforms	28
For UNIX	28
For Solaris x86	29
For Solaris Bundled	29
For Microsoft Windows	30
Accessing the Documentation	30
Chapter 2 Installing for Evaluation	31
What You're Installing	32
Downloading from the Web Site	32
Downloading for UNIX	33
Downloading for Microsoft Windows	33
Installing the Evaluation Product	34
Installing in Silent Mode (Non-Interactive)	45
Chapter 3 Installing for Development	47
What You're Installing	48
Downloading from the Web	49
Downloading for UNIX	49
Downloading for Microsoft Windows	49
Installing the Development Product	50
Installing in Silent Mode (Non-Interactive)	63
How the Configuration File Is Created	63
Installing in Silent Mode	64
Chapter 4 Completing a Solaris 9 Bundled Installation	67
About Solaris 9 Installation	68
Creating an Administrative Domain	68
Starting the Administration Server	70
Creating an Application Server Instance	70
Chapter 5 Post-installation Tasks	73
Setting the PATH Environment Variable	73

Setting the PATH Variable on UNIX	74
Setting the Microsoft Windows Environment	75
Setting the Microsoft Windows PATH Variable	75
Setting the net Command	76
Viewing Man Pages	77
Starting and Stopping the Server	77
Using the Command-line Interface	77
Using start-domain and stop-domain	78
Using start-instance and stop-instance	79
Getting Helpful Information	79
Using the Administration Interface	80
Using the Microsoft Windows Program Group	81
Using Microsoft Windows Services	81
Implementing the Web Server Plug-in	82
Implementing the Web Services Client	83
Deciding Where to Install the Sun ONE Studio Plug-in	83
Accessing the Sample Applications	84
Chapter 6 Upgrading the Sun ONE Application Server Software	85
Preparing to Upgrade	85
Upgrade Components	86
Requirements and Restrictions	86
How the Upgrade Program Works	87
Backup Phase	88
Installation Phase	88
Reconfiguration Phase	88
Log Files	89
Upgrade Log File	89
Audit File	89
Upgrading the Sun ONE Application Server	89
Troubleshooting	91
To Restart or Interrupt an Upgrade	91
Error Situations	91
Chapter 7 Uninstalling the Sun ONE Application Server Software	93
What You're Uninstalling	93
Uninstalling the Sun ONE Application Server Software	93
Chapter 8 Troubleshooting	99
About Logs	99
Forgotten User Name or Password	100
Forgotten Admin Server Port Number	100

Connection Refused for Administration Interface	100
Server Won't Start: CGI Error Occurs	101
Set Limits on File Descriptions	101
Change Kernel Parameters	101
Uninstallation Failure Cleanup	102
On UNIX	102
On Microsoft Windows	103
For Microsoft Windows—SNMP Subagent Install Fails	104
For Microsoft Windows—Command Window with Startup Message Does Not Appear	104
Appendix A Licensing Information	105
About Licensing	105
Types of Licenses	106
Evaluation License	106
Development License	106
Platform Edition License	107
Standard Edition License	107
License Summary	107
Displaying License Information	108
Transitioning a License	109
For Package-Based UNIX Installations	109
For Unbundled Solaris Package-Based Installations	109
For Solaris 9 Bundled Installations	110
For Non-Packaged-Based UNIX Installations	110
For Microsoft Windows Installations	111
Index	113

About This Guide

This *Installation Guide* provides instructions for installing the Sun™ Open Net Environment (Sun ONE) Application Server 7, Upgrade 2 product.

The following topics are addressed here:

- [Who Should Use This Guide](#)
- [How This Guide is Organized](#)
- [Using the Documentation](#)
- [Documentation Conventions](#)
- [Product Support](#)

NOTE Sun ONE Application Server 7, Platform Edition is automatically installed with Solaris 9.

Users of the Solaris 9 bundled product should read “[Documentation Conventions](#)” on page 11. After completing basic installation, you should then proceed to “[Completing a Solaris 9 Bundled Installation](#)” on page 67 before reading the *Getting Started Guide* and *Administrator’s Guide* for information about configuring and using the Sun ONE Application Server product.

Who Should Use This Guide

This manual is intended for system administrators, network administrators, evaluators, application server administrators, web developers, and software developers who want to install the Sun ONE Application Server software.

This guide assumes you are familiar with the following:

- Installation of software products
- UNIX or Microsoft Windows, depending on your operating system
- Client/server programming model
- Internet and World Wide Web

How This Guide is Organized

This guide contains the following documentation components:

- [Chapter 1, “Preparing to Install” on page 15](#)—Provides an overview of the minimum requirements, and steps to be taken prior to installing Sun ONE Application Server software.
- [Chapter 2, “Installing for Evaluation” on page 31](#)—Provides quick-start instructions for installing the evaluation version of the Sun ONE Application Server software.
- [Chapter 3, “Installing for Development” on page 47](#)—Provides instructions for installing the development (non-evaluation) version of the Sun ONE Application Server software. Includes instructions for performing a non-interactive silent installation.
- [Chapter 4, “Completing a Solaris 9 Bundled Installation” on page 67](#)—Provides additional instructions specifically for Solaris 9 installation. Instructions for creating a domain are included.
- [Chapter 5, “Post-installation Tasks” on page 73](#)—Describes some additional tasks you may perform during or after installing the Sun ONE Application Server software.
- [Chapter 6, “Upgrading the Sun ONE Application Server Software” on page 85](#)—Provides instructions for upgrading an existing installation of the Sun™ Open Net Environment (Sun ONE) Application Server 7 software.
- [Chapter 7, “Uninstalling the Sun ONE Application Server Software” on page 93](#)—Provides instructions for uninstalling the Sun ONE Application Server software.
- [Chapter 8, “Troubleshooting” on page 99](#)—Provides solutions to problems you might encounter during or after installation.

- [Appendix A, “Licensing Information” on page 105](#)—Provides information about application server licensing, upgrading your license, and licensing commands.

Using the Documentation

The Sun ONE Application Server manuals are available as online files in Portable Document Format (PDF) and Hypertext Markup Language (HTML) formats, at:

<http://docs.sun.com/>

The following table lists tasks and concepts described in the Sun ONE Application Server manuals.

Table 1 Sun ONE Application Server Documentation Road Map

For information about	See the following
Late-breaking information about the software and the documentation	<i>Release Notes</i>
Supported platforms and environments	<i>Platform Summary</i>
Introduction to the application server, including new features, evaluation installation information, and architectural overview.	<i>Getting Started Guide</i>
Installing Sun ONE Application Server and its various components (sample applications, Administration interface, Sun ONE Message Queue).	<i>Installation Guide</i>
Creating and implementing J2EE applications that follow the open Java standards model on the Sun ONE Application Server 7. Includes general information about application design, developer tools, security, assembly, deployment, debugging, and creating lifecycle modules.	<i>Developer’s Guide</i>
Creating and implementing J2EE applications that follow the open Java standards model for web applications on the Sun ONE Application Server 7. Discusses web application programming concepts and tasks, and provides sample code, implementation tips, and reference material.	<i>Developer’s Guide to Web Applications</i>

Table 1 Sun ONE Application Server Documentation Road Map (*Continued*)

For information about	See the following
Creating and implementing J2EE applications that follow the open Java standards model for enterprise beans on the Sun ONE Application Server 7. Discusses EJB programming concepts and tasks, and provides sample code, implementation tips, and reference material.	<i>Developer's Guide to Enterprise JavaBeans</i>
Creating Web Services, RMI-IIOP, or other clients that access J2EE applications on the Sun ONE Application Server 7	<i>Developer's Guide to Clients</i>
J2EE features such as JDBC, JNDI, JTS, JMS, JavaMail, resources, and connectors	<i>Developer's Guide to J2EE Features and Services</i>
Creating custom NSAPI plugins	<i>Developer's Guide to NSAPI</i>
Performing the following administration tasks: Using the Administration interface and the command line interface	<i>Administrator's Guide</i>
Configuring server preferences	
Using administrative domains	
Using server instances	
Monitoring and logging server activity	
Configuring the web server plugin	
Configuring the Java Messaging Service	
Using J2EE features	
Configuring support for CORBA-based clients	
Configuring database connectivity	
Configuring transaction management	
Configuring the web container	
Deploying applications	
Managing virtual servers	
Editing server configuration files	<i>Administrator's Configuration File Reference</i>
Configuring and administering security for the Sun ONE Application Server 7 operational environment. Includes information on general security, certificates, and SSL/TLS encryption. Web-core-based security is also addressed.	<i>Administrator's Guide to Security</i>

Table 1 Sun ONE Application Server Documentation Road Map (*Continued*)

For information about	See the following
Configuring and administering service provider implementation for J2EE CA connectors for the Sun ONE Application Server 7. Includes information about the Administration Tool, DTDs and provides sample XML files.	<i>J2EE CA Service Provider Implementation Administrator's Guide</i>
Migrating your applications to the new Sun ONE Application Server 7 programming model from the Netscape Application Server version 2.1, including a sample migration of an Online Bank application provided with Sun ONE Application Server	<i>Migrating and Redeploying Server Applications</i>
Using Sun ONE Message Queue.	The Sun ONE Message Queue documentation at: http://docs.sun.com/db/prod/slmsgqu#hic

Documentation Conventions

This section describes the types of conventions used throughout this guide:

- [General Conventions](#)
- [Conventions Referring to Directories](#)

General Conventions

The following general conventions are used in this guide:

- **File and directory paths** are given in UNIX[®] format (with forward slashes separating directory names). For Microsoft Windows versions, the directory paths are the same, except that backslashes are used to separate directories.
- **URLs** are given in the format:

`http://server.domain/path/file.html`

In these URLs, *server* is the server name where applications are run; *domain* is your Internet domain name; *path* is the server's directory structure; and *file* is an individual filename. Italic items in URLs are placeholders.

- **Font conventions** include:
 - The `monospace` font is used for sample code and code listings, API and language elements (such as function names and class names), file names, path names, directory names, and HTML tags.
 - *Italic* type is used for code variables.
 - *Italic* type is also used for book titles, emphasis, variables and placeholders, and words used in the literal sense.
 - **Bold** type is used as either a paragraph lead-in or to indicate words used in the literal sense.
- **Installation root directories** for most platforms are indicated by *install_dir* in this document. Exceptions are noted in [“Conventions Referring to Directories” on page 12](#).

By default, the location of *install_dir* on **most** platforms is:

- Solaris 8 non-package-based evaluation installations:

user_home_directory/sun/appserver7

- Solaris unbundled, package-based installations:

/opt/SUNWappserver7

- Microsoft Windows, all installations:

C:\Sun\AppServer7

For the platforms listed above, *default_config_dir* and *install_config_dir* are identical to *install_dir*. See [“Conventions Referring to Directories” on page 12](#) for exceptions and additional information.

- **Instance root directories** are indicated by *instance_dir* in this document, which is an abbreviation for the following:

default_config_dir/domains/domain/instance
- **UNIX-specific descriptions** throughout this manual apply to the Linux operating system as well, except where Linux is specifically mentioned.

Conventions Referring to Directories

By default, when using the Solaris 8 and 9 package-based installation and the Solaris 9 bundled installation, the application server files are spread across several root directories. These directories are described in this section.

- **For Solaris 9 bundled installations**, this guide uses the following document conventions to correspond to the various default installation directories provided:
 - *install_dir* refers to `/usr/appserver/`, which contains the static portion of the installation image. All utilities, executable files, and libraries that make up the application server reside in this location.
 - *default_config_dir* refers to `/var/appserver/domains`, which is the default location for any domains that are created.
 - *install_config_dir* refers to `/etc/appserver/`, which contains installation-wide configuration information such as licenses and the master list of administrative domains configured for this installation.
- **For Solaris 8 and 9 package-based, unbundled installations**, this guide uses the following document conventions to correspond to the various default installation directories provided:
 - *install_dir* refers to `/opt/SUNWappserver7`, which contains the static portion of the installation image. All utilities, executable files, and libraries that make up the application server reside in this location.
 - *default_config_dir* refers to `/var/opt/SUNWappserver7/domains` which is the default location for any domains that are created.
 - *install_config_dir* refers to `/etc/opt/SUNWappserver7/`, which contains installation-wide configuration information such as licenses and the master list of administrative domains configured for this installation.

Product Support

If you have problems with your system, contact customer support using one of the following mechanisms:

- The online support web site at:
 - <http://www.sun.com/supporttraining/>
- The telephone dispatch number associated with your maintenance contract

Please have the following information available prior to contacting support. This helps to ensure that our support staff can best assist you in resolving problems:

- Description of the problem, including the situation where the problem occurs and its impact on your operation

- Machine type, operating system version, and product version, including any patches and other software that might be affecting the problem
- Detailed steps on the methods you have used to reproduce the problem
- Any error logs or core dumps

For More Information

Useful Sun ONE information can be found at the following Internet locations:

- Sun ONE products and services information
<http://www.sun.com/service/sunps/sunone/index.html>
- Sun ONE developer information
http://www.sun.com/software/product_categories/application_development.html
- Sun ONE learning solutions
<http://www.sun.com/software/training/>
- Sun ONE product data sheets
<http://www.sun.com/software/>
- Sun Microsystems product documentation
<http://docs.sun.com/>
- Sun ONE Application Server product downloads:
http://www.sun.com/software/download/app_servers.html
- Sun ONE Application Server product documentation
<http://docs.sun.com/db/prod/s1.asse#hic>

Preparing to Install

The Sun™ Open Net Environment (Sun ONE) Application Server 7, Upgrade 2 software can be distributed and installed in a number of different ways, depending on your systems, roles, and the needs of your site. This chapter explains the software components of the product, the scope and limitations of your choices, and the system requirements for the Sun ONE Application Server environment.

The following topics are addressed here:

- [About Sun ONE Application Server Installation](#)
- [System Requirements](#)
- [Accessing the Documentation](#)

Read the *Sun ONE Application Server Release Notes* for any late-breaking installation information.

For more information about configuring the Sun ONE Application Server software after installation, refer to the *Sun ONE Application Server Administrator's Guide*.

The following locations contain helpful information, including Tech Notes, Forum discussions, tools and utilities, and product downloads:

http://www.sun.com/software/products/appsrvr/home_appsrvr.html

http://www.sun.com/software/download/app_servers.html

About Sun ONE Application Server Installation

The Sun ONE Application Server product is made up of a number of software components that work together to create the Sun ONE Application Server experience. There are a number of choices you can make for your installation:

- You can install the Platform Edition or the Standard Edition edition of the product.
- You can install from the product CD or from the download site.
- You can install the evaluation distribution or the development distribution of the product.
- You can install from the command-line interface or the graphical interface.
- You can install interactively or in silent mode.

This section addresses the following topics.

- [Installation Components](#)
- [Installation Methods](#)
- [Installation Distributions of the Product](#)
- [Packaging Models and Directory Structure](#)

Installation Components

The Sun ONE Application Server installation components are described briefly in the following sections:

- [Sun ONE Application Server](#)
- [Administration Client](#)
- [Sun ONE Message Queue](#)
- [PointBase](#)
- [Sample Applications](#)
- [Sun ONE Studio 4.0, Enterprise Edition for Java](#)
- [Java 2 Software Development Kit \(J2SE\)](#)

Sun ONE Application Server

Includes the core components of the Sun ONE Application Server software product as described in this section. For more information on Sun ONE Application Server features, refer to the *Sun ONE Application Server What's New* document.

Editions

The following editions of the Sun ONE Application Server are offered to suit a variety of needs for UNIX and Microsoft Windows environments:

- Platform Edition
- Standard Edition

Platform and Standard Editions support both single machine and multi-machine, tiered deployments. While Platform Edition is limited to a single application server instance (that is, a single JVM process) per administrative domain, Standard Edition can be configured with multiple application server instances per administrative domain.

Standard Edition provides enhanced web tier support by allowing you to partition HTTP/S traffic arriving on the same web server instance to multiple application servers in the middle tier. Load balancing from the plugin is not supported in these editions. The Standard Edition evaluation version of the product has a sixty days trial period, after which it can be converted to a fully-licensed development version.

Administration

- Admin Server—Provides administration facilities (one Admin Server per domain).
- Administration interface—Graphical interface used for performing server administration tasks. Also called the *Admin Console*.
- Command-line interface—Performs the same tasks as the Administration interface.
- Multiple administrative domains—Mechanism that allows different administrators to create and manage their own sets of application server instances.

The Administration interface and the command-line interface are automatically installed when you install the Sun ONE Application Server component. When the Administration interface (also called the Admin Console) has been started, the initial page of the Sun ONE Application Server graphical interface is displayed.

Both the graphical and command-line administration (browser) clients allow you to manage and configure your servers and the applications hosted on them, as well as help you deploy your applications.

Full instructions for using the administration tools are contained in the *Sun ONE Application Server Administrator's Guide*, the Administration interface online help, and the `asadmin` man pages.

Administration Client

The administration client is the separate command-line component of the Sun ONE Application Server. It is installed automatically when the Sun ONE Application Server component is installed.

You can choose to install the command-line version of this client separately on a machine where the Sun ONE Application Server is *not* installed. Do this by selecting only the Sun ONE Administration Client component instead of the Sun ONE Application Server component during installation.

Sun ONE Message Queue

The Sun ONE Message Queue software is a production implementation of the Java Messaging Service (JMS) 1.0.2 specification. It is automatically installed when you install the Sun ONE Application Server software.

Sun ONE Message Queue consists of three primary components:

- Broker
- Client APIs
- Administration tool

For UNIX non-package-based distributions and for all Microsoft Windows distributions, the Sun ONE Message Queue software is automatically installed with the Sun ONE Application Server software here: *install_dir/imq*

PointBase

PointBase is the database supported by the Sun ONE Application Server platform. PointBase is a pure Java Relational Database Management System (RDBMS) for client-server networked applications. It provides a reliable and scalable database for e-commerce and application servers.

PointBase 4.2 is installed here: *install_dir/pointbase*

NOTE PointBase is not available in the Solaris™ 9 bundled version of Sun ONE Application Server.

Sample Applications

Sun ONE Application Server includes over sixty sample applications that are available when you install the Sun ONE Application Server software. All samples come with the source, schema, Ant build scripts, and EAR files. Any existing data associated with the database-related samples is available in the database. These sample applications are categorized as follows:

- Technology samples—Introduce you to various technical aspects of the Java™ 2 Platform, Enterprise Edition (J2EE™) specification as well as the value added features of the Sun ONE Application Server platform.
- Interoperability samples—Provide more detailed views on how these technologies come together on the Sun ONE Application Server platform.

The sample applications are installed here: *install_dir*/samples

More information about the samples can be obtained here:

install_dir/samples/index.html

Sun ONE Studio 4.0, Enterprise Edition for Java

Sun ONE Studio (formerly named Forte for Java Enterprise Edition 4.0) provides the ability to create and deploy Java-based web services that conform to the SOAP 1.1 specification.

The Sun ONE Application Server platform provides support for Sun ONE Studio 4.0, which means you can use the Sun ONE Application Server software with your existing Sun ONE Studio 4 installation. When installing Sun ONE Application Server, you are prompted to enter the path to your existing Sun ONE Studio 4.0 installation, if applicable.

The Sun ONE Studio 4 files are installed here: *install_dir*/studio4

Java 2 Software Development Kit (J2SE)

The Sun ONE Application Server product requires the J2SE 1.4.1_04 and leverages the performance and feature improvements that are part of the 1.4 platform.

During a development installation, you can choose to reuse a J2SE that is already installed on your system as long as the J2SE version is correct.

NOTE The Sun ONE Application Server 7 product is only certified to work with J2SE 1.4.1_04 from Sun Microsystems. Third-party J2SE development kits, even with appropriate version numbers, are not supported.

For UNIX evaluation distributions and all Microsoft Windows distributions, the J2SE is installed here: *install_dir*/jdk

For unbundled Solaris non-evaluation distributions and for Solaris 9 bundled distributions, the J2SE is installed here: */usr/j2se*.

Installation Methods

You can install the Sun ONE Application Server software using any of three methods:

- [Graphical Interface Method](#)
- [Command-Line Interface Method](#)
- [Silent Mode](#)

Graphical Interface Method

If you choose to use the graphical interface for installation, you are provided with a set of interactive graphical dialogs. This is the default mode when you invoke the installation program without options:

```
./setup
```

Full instructions for using the graphical interface method are contained in [“Installing for Evaluation” on page 31](#) and [“Installing the Development Product” on page 50](#).

Command-Line Interface Method

If you choose to use the command-line interface for installation, the steps are the same as for the graphical-interface installation, but a graphics-capable display is not provided. To activate the interactive command-line mode, invoke the installation program using the `-console` option:

```
./setup -console
```

If you are using Telnet to access a remote server, you can use the command-line interface to install the product in an interactive fashion.

Silent Mode

You can use silent mode to perform a scripted installation based on the presence of a parameter file that was created during a standard interactive installation (either using the graphical or command-line interface). In silent mode, the Sun ONE Application Server software is installed without any interaction by you. By referring to the parameter file, the components that were installed in the interactive model are automatically installed.

Instructions for using silent mode are contained in “[Installing in Silent Mode \(Non-Interactive\)](#)” on page 63.

Installation Distributions of the Product

The Sun ONE Application Server offers two types of installation distributions, depending on whether your particular usage is intended for evaluation or development.

NOTE Superuser privileges are required for most installation tasks, which means on UNIX you must have root privileges, and on Microsoft Windows you must have Administrator privileges.

This section discusses the following topics:

- [Evaluation Distribution](#)
- [Development \(Non-Evaluation\) Distribution](#)
- [Installation Distribution Summary](#)

You can install the product from the product CD or as a download from the web site. The various downloads available for the Sun ONE Application Server product can be found here:

http://www.sun.com/software/download/app_servers.html

Evaluation Distribution

If you are evaluating the Sun ONE Application Server software, or taking a “try-and-buy” approach to the product, install the evaluation version of the Sun ONE Application Server software. The evaluation version of the product does not allow you to select from installable components.

By default, the following components are automatically installed in the installation root directory when you choose the evaluation product:

- Sun ONE Application Server, including its graphical and command-line administrative tools
- Sun ONE Application Server Administration Client (command-line tool)
- Sun ONE Message Queue
- Java 2 Software Development Kit (J2SE)
- PointBase
- Sample Applications

An evaluation license automatically expires in 60 days. On Microsoft Windows, you can upgrade this license to the non-evaluation development license. See [“Licensing Information” on page 105](#) for instructions.

NOTE The evaluation installation is not available on the Solaris x86 platform.

Development (Non-Evaluation) Distribution

Developers and administrators will usually use the “non-evaluation” type of installation. This installation program is available as a download or on a CD-ROM on UNIX, and from a CD-ROM on Microsoft Windows.

The following installation components are included with the Sun ONE Application Server product:

- Sun ONE Application Server, including its graphical and command-line administrative tools
- Sun ONE Application Server Administration Client (command-line tool only)
- Sun ONE Message Queue
- Java 2 Software Development Kit (J2SE), Standard Edition
- PointBase Database Server and Type 4 JDBC driver (Not available in the Solaris 9 bundled version of Sun ONE Application Server.)
- Sample Applications
- Support for Sun ONE Studio 4.0, Enterprise Edition for Java

This license doesn't expire. Refer to [“Licensing Information” on page 105](#) for further information on licensing.

A non-evaluation type of installation on UNIX is always package-based. Refer to [“Packaging Models and Directory Structure” on page 24](#) for information on the various ways the Sun ONE Application Server software can be distributed.

Installation Distribution Summary

The following table summarizes the capabilities of the evaluation and the development distributions of the product.

Table 1-1 Installation Distribution Summary

Factor/Component	Evaluation	Non-Evaluation (Dev)
Sun ONE Application Server	Yes	Yes
Administration client	Yes	Yes
PointBase (not available in Solaris 9 bundled)	Yes	Optional
Sample applications	Yes	Optional
J2SE	Yes	Yes
Sun ONE Message Queue	Yes	Yes
Sun ONE Studio 4 plug-in	No	Optional
Download available	Yes	No: Windows Yes: UNIX
CD-ROM available	Yes: Solaris No: All other	Yes
Licensed for	60 days	Indefinite
Can upgrade license	Yes: Microsoft Windows No: UNIX	Yes
Must be superuser to install?	Yes: Microsoft Windows Yes: UNIX, package-based No: UNIX, non-package-based	Yes

Packaging Models and Directory Structure

Depending on the distribution of the product installed on your system, your Sun ONE Application Server software may either be installed under a single root directory path or be spread across several root directory paths.

- [Bundled Installation on Solaris 9](#)
- [Package-Based Installation on UNIX](#)
- [Microsoft Windows and Evaluation Installations](#)

Bundled Installation on Solaris 9

On Solaris, when using the Solaris package-based installation of the product and when installing the Sun ONE Application Server software as part of a Solaris 9 installation, the Sun ONE Application Server software is spread across several root directories as follows:

- `/usr/appserver` contains static portion of the installation image. All utilities, executables and libraries that make up the application server reside in this location. Only product patches and upgrades affect this area. Subdirectories in this location include:
 - `bin/` contains executables and utilities, some of which are symbolically linked from `/usr/bin`.
 - `include/` contains legacy header files.
 - `lib/` contains native and Java libraries.
- `/etc/appserver/` contains installation-wide configuration information such as licenses and the master list of administrative domains configured for this installation.
- `/var/appserver/domains` is the default area under which administrative domains are created.

NOTE Because installing the Sun ONE Application Server product as part of a Solaris 9 installation does not include initial domain creation, the domain directory does not exist until you create an initial domain. As administrative domains are created, they can be placed in any location on the system. This area acts only as the default location in which domains are created. Refer to [“Creating an Administrative Domain” on page 68](#) for guidelines.

Package-Based Installation on UNIX

On UNIX, the package-based model installs the components as packages.

By default, when using the package-based installation of the Sun ONE Application Server product, the installation locations are spread across three directory roots in a similar fashion to the bundled installation case.

- `/opt/SUNWappserver7` contains the static portion of the installation image. All utilities, executables and libraries of the Sun ONE Application Server software reside in this location.

NOTE Only product patches and upgrades affect `/opt/SUNWappserver7`.

- `/etc/opt/SUNWappserver7/config` contains installation-wide configuration information such as licenses and the master list of administrative domains configured for this installation.
- `/var/opt/SUNWappserver7/domains` is the default area under which administrative domains are created.

Microsoft Windows and Evaluation Installations

On Microsoft Windows, and for any installation of the evaluation product (without packages), the Sun ONE Application Server installation is rooted under a single directory path. Default directories are as follows:

- For Microsoft Windows:

`c:\Sun\AppServer7`

- For UNIX evaluation distributions without packages:

`home_dir/sun/appserver7`

In these cases, the `/config` and `/domains` directories are positioned under the installation directory root.

System Requirements

This section lists the requirements that must be met before installing the Sun ONE Application Server product.

- [Platform Requirements](#)

- [Solaris Patches Required](#)
- [Other Requirements and Limitations](#)

Platform Requirements

The following table summarizes the Sun ONE Application Server 7, Update 2 requirements.

Table 1-2 Platform Requirements for Sun ONE Application Server

Operating System	Architecture	Minimum Memory	Recommended Memory	Minimum Disk Space	Recommended Disk Space
UNIX					
Sun Solaris 8 or 9 for SPARC	32 and 64 bit	256 MB without Sun ONE Studio	512 MB	250 MB free	500 MB free
Solaris x86, Version 9	32 bit	512 MB with Sun ONE Studio			
Red Hat Linux 7.2 and 7.3					
Red Hat Enterprise Linux 2.1					
Microsoft Windows					
Windows 2000 Advanced Server, SP2	Intel 32 bit	256 MB	256 MB without Sun ONE Studio	250 MB free	500 MB free
Windows 2000 Server, SP2			512 MB with Sun ONE Studio		
Windows 2000 Professional, SP2					
Windows XP Professional					

On UNIX, you can check your operating system version using the `uname` command. Disk space can be checked using the `df` command.

For the latest information about supported directory servers, web servers, web browsers, and so on, information can be found in the *Sun ONE Application Server Platform Summary* here:

<http://docs.sun.com/db/prod/s1.asse#hic>

Solaris Patches Required

For Solaris 8 systems, the following Solaris patches or their equivalents must be installed:

- 109326-06
- 108993-23
- 110934 (for packaged-based installation only)

The patches required for Solaris 8 can be retrieved from the patch finder page here:

<http://sunsolve.sun.com/pub-cgi/show.pl?target=patches/patch-access>

It is recommended that Solaris 8 users have the “Recommended Patch Cluster” installed, which includes the three patches required for Solaris 8 (109326-06, 108993-23, and 110934). This patch cluster is available under Patch Portal, Recommended and Security Patches here:

<http://sunsolve.sun.com/>

Other Requirements and Limitations

The following additional requirements should be met before installing the Sun ONE Application Server software:

- [For All Platforms](#)
- [For UNIX](#)
- [For Solaris x86](#)
- [For Solaris Bundled](#)
- [For Microsoft Windows](#)

For All Platforms

- Free space—Your temporary directory must have a minimum of 100 MB free. On UNIX, you can check your disk space using the `df` command.
- Available ports—On all platforms, you must have four unused ports available.
 - You'll assign one for the Admin Server and another for the HTTP server default instance during installation.
 - The installation program will detect used ports and assign two others for you: Sun ONE Message Queue (by default, 7676), and IIOP (by default, 3700). If either of these default port numbers are in use, the installation program will assign the next available port (for example, 7677 or 7678, and so on).
- Using the `uninstall` program—If you need to remove the Sun ONE Application Server from your system, it is important to use the `uninstall` program that is installed with the Sun ONE Application Server software. If you attempt to use another method, problems will arise when you try to reinstall the same version, or when you install a new version.

For UNIX

- Root privileges—For UNIX package-based installations, you must have root privileges on your target machine. (Root privileges are not required to install a non-package-based evaluation version of the Sun ONE Application Server.)

When installing as root, note the following:

- For non-package-based versions of the product—You can install more than one Sun ONE Application Server as root as long as each installation is in a different installation directory.
- For package-based versions of the product—You can have only one installation per system. However, one non-evaluation installation can co-exist with any number of evaluation installation(s) on the same system, as long as the installation directories are different for each.
- For both evaluation and non-evaluation distributions—You can have multiple instances running within the same installation.

- Hardened operating system—This is an operating system stripped of some features for the purpose of enhancing security. Such an operating system usually doesn't allow GUI-based applications to be run in the environment. The following two libraries are required to install and use Sun ONE Application Server 7 in a hardened operating environment:
 - libC.so.5
 - libCrun.so.1

These libraries can be obtained by installing the `SUNWlibC` (Sun Workshop Compilers Bundled libC) package which is part of the Solaris distribution in the end-user package cluster (not in the core).

- Starting previously-installed servers—If there are previously-installed application servers or web servers on the target machine, you must start them before you begin the Sun ONE Application Server installation process. This allows the installation program to detect ports that are in use and avoid assigning them for other uses.

For Solaris x86

- Sun ONE Studio plug-in—The Sun ONE Studio Plug-in is not part of the Sun Solaris x86 release because Sun ONE Studio is not available on the x86 platform.
- Web server (reverse proxy) plug-in—The reverse proxy plug-in is supported only with Apache Web Server, not with Sun ONE Web Server because the Sun ONE Web Server is not available on the Solaris x86 platform.
- Solaris support—The Solaris x86 release is only supported on Solaris 9, Update 2 onward, not on any earlier version of Solaris.
- No evaluation—There is no evaluation version of the installation program for Solaris x86.

For Solaris Bundled

- Shared Message Queue broker—If your machine has the Solaris 9 bundled version of the Sun ONE Application Server software installed, and you install the unbundled version of the server, the Message Queue broker for these application server installations will be shared.

Therefore, if you fail to uniquely name your domains and instances, you may receive the following errors when starting up the second instance with the same domain or instance name:

```
SEVERE: JMS5024: JMS service startup failed
```

```
SEVERE: CORE5071: An error occurred during initialization
```

To avoid these errors, see the JMS Support chapter in the *Sun ONE Application Server Administrator's Guide*.

For Microsoft Windows

- Administrator privileges—You must have administrator privileges to install the Sun ONE Application Server software on Microsoft Windows. This applies to both types of installation, evaluation or non-evaluation.
- SNMP—You must install the SNMP service before you install the Sun ONE Application Server software or installation of the SNMP subagent will fail.
- Firewall or anti-virus shutdown—You must stop any firewall or anti-virus software before installing the Sun ONE Application Server software, since some of this software disables all ports by default. The Sun ONE Application Server installation program must be able to accurately determine which ports are available.
- On a given Microsoft Windows machine, you can only install one Sun ONE Application Server.

Accessing the Documentation

The Sun ONE Application Server documentation is provided in a number of ways:

- Manuals—You can view Sun ONE Application Server manuals and release notes in HTML and in printable PDF downloads at:
<http://docs.sun.com/db/prod/s1.asse#hic>
- Online help—Click the Help button in the graphical interface to launch a context-sensitive help window.
- Man pages—To view man pages at the command line, you must first add *install_dir/man* to your MANPATH environment variable (Solaris unbundled only). After setting the variable, you can access man pages for the Sun ONE Application Server commands by typing `man command_name` on the command line. For example:

```
man asadmin
```

Installing for Evaluation

This chapter provides instructions for installing the Sun™ Open Net Environment (Sun ONE) Application Server 7, Upgrade 2 software for evaluation purposes. This is a quick installation that allows you to try the product without having to do a full operational installation.

NOTE The evaluation installation is not available on the Solaris x86 platform.

The following topics are addressed here:

- [What You're Installing](#)
- [Downloading from the Web Site](#)
- [Installing the Evaluation Product](#)
- [Installing in Silent Mode \(Non-Interactive\)](#)

You should be familiar with the information in “[Preparing to Install](#)” on page 15 before beginning installation.

For any late-breaking updates to these instructions, read the *Sun ONE Application Server Release Notes*.

The following locations contain product downloads in addition to other useful information:

http://www.sun.com/software/download/app_servers.html

http://www.sun.com/software/products/appsrvr/home_appsrvr.html

What You're Installing

The purpose of the Sun ONE Application Server evaluation installation is to allow users and potential users to try the Sun ONE Application Server software without committing to purchasing. You can install this evaluation version of the product interactively or you can use silent mode to replicate an installation scenario on multiple machines.

On UNIX, the evaluation version allows you to have multiple installations of the Sun ONE Application Server on the same system at the same time. Pre-existing versions of the Sun ONE Message Queue and J2SE are allowed but are not used.

You cannot select from installable components during an evaluation installation. The evaluation installation program automatically installs the following components:

- Sun ONE Application Server, including its administrative tools and utilities
- Sun ONE Application Server Administration Client (command-line tool)
- Java 2 Software Development Kit (J2SE), Standard Edition 1.4.1_04
- Sun ONE Message Queue 3.0.1 SP2
- PointBase Database Server and Type 4 JDBC driver (Not available in the Solaris 9 bundled version of Sun ONE Application Server.)
- Sample Applications

You can chose to install the evaluation version of the Sun ONE Application Server that includes support for Sun ONE Studio (formerly Forte for Java 4.0). If you do, the following component is also installed:

- Sun ONE Studio 4 plugin (Not available for Solaris x86).

For descriptions of the components, see [“Installation Components” on page 16](#).

Downloading from the Web Site

This section provides instructions for downloading the Sun ONE Application Server installation files from the web site.

Downloading for UNIX

1. Select the download from the following Sun ONE Application Server download site and save it in a temporary directory on your UNIX machine.

http://www.sun.com/software/download/app_servers.html

2. Navigate to the directory where you downloaded the file. For example:

```
cd /temp_dir/as7download/
```

3. Unzip the .gz file using the `gunzip` command in this format:

```
gunzip filename.tar.gz
```

4. Untar the unzipped file using the `tar -xvf` command in this format:

```
tar -xvf filename.tar
```

This process may take a little time. When the files are unpacked, you will see the `sun-appserver7` directory, which contains the `setup` file and the package directory.

Downloading for Microsoft Windows

1. Select the download from the following Sun ONE Application Server download site and save it in a temporary directory on your Microsoft Windows machine.

http://www.sun.com/software/download/app_servers.html

A progress indicator bar tells you when the download has completed.

NOTE On Microsoft Windows—You will receive an email notification providing you with a non-expiring license key (free for developer use) that you can use to upgrade your evaluation license. You will be given the opportunity to upgrade your license at the end of the Sun ONE Application Server installation process.

2. Navigate to the directory where you downloaded the installation zip file.

3. Unzip the installation zip file by opening the file and extracting its contents to your chosen folder. When the extraction is complete, you should see the following in your `sun-appserver7` folder directory:

```
\package folder  
  
3RD-PARTY-LICENSE.txt file  
  
appserv.class file  
  
LICENSE.txt file  
  
README.txt file  
  
setup.exe script
```

Installing the Evaluation Product

After you have verified that your system meets the requirements specified in [“System Requirements” on page 25](#), perform the steps in this section to install Sun ONE Application Server for evaluation.

If you choose to use the command-line interface, the steps are identical. However, in place of graphics-based installation screens, text-based screens are displayed.

NOTE On Microsoft Windows—You must have administrator privileges to install the Sun ONE Application Server 7 software. You cannot install more than one Sun ONE Application Server on a single Microsoft Windows machine.

1. If you are not in the directory already, navigate to the directory where you unpacked the installation files. You will see the `setup.exe` file.

NOTE On Microsoft Windows—You can navigate using Microsoft Windows Explorer to the directory where you unzipped the files and doubleclick the `setup` file to invoke the graphical interface of the installation program.

2. Select your installation method as follows:

- To run the installation using the graphical interface, type the following at the command prompt:

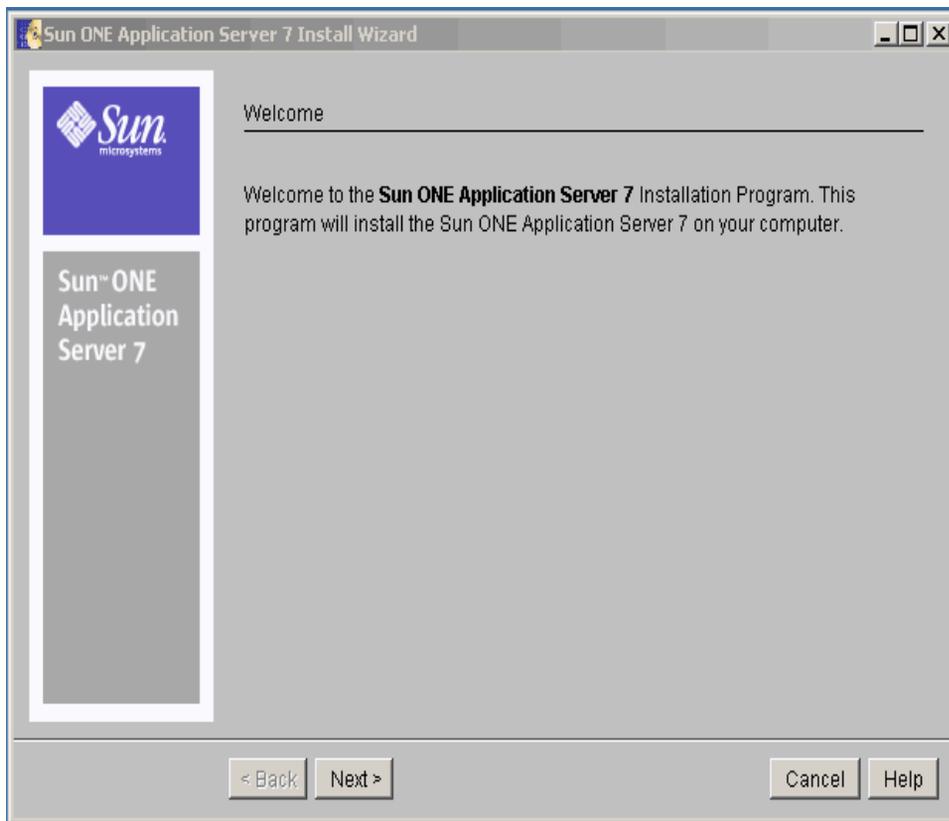
```
./setup
```

NOTE On UNIX—If you are installing the Sun ONE Application Server software remotely using the graphical interface, you must enable the display configuration on the machine where you are installing the product. Do this by setting the DISPLAY environment variable. DISPLAY contains the name of the server and display using this format: *host_name.domain_name.com:0.0*

- To run the installation using the command-line interface, type the following at the command prompt:

```
./setup -console
```

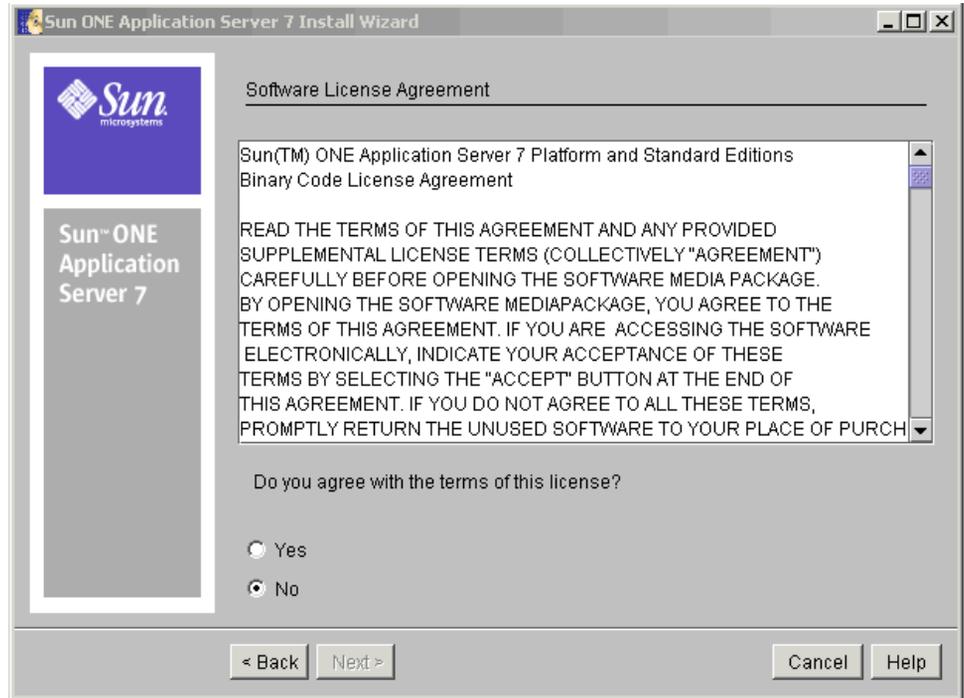
The Welcome page of the installation program is displayed as follows.



NOTE Click the Help button to display context-sensitive information for a page.

3. Read the Welcome page and click Next.

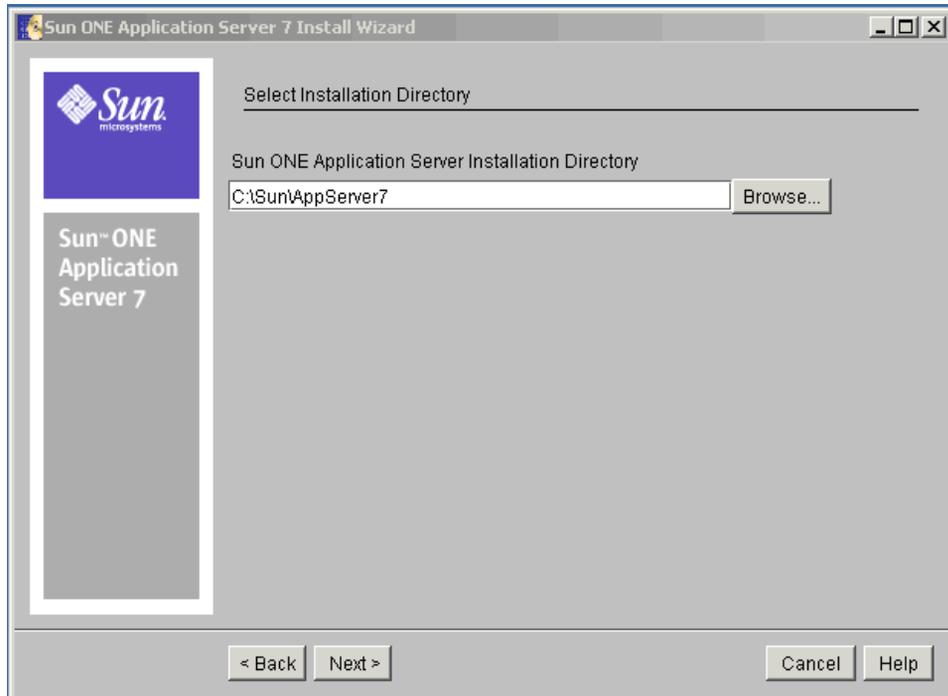
The following License Agreement page is displayed.



4. Read the License Agreement and click Yes to agree to the terms of the license, then click Next (or type Yes at the command line).

NOTE You must accept the license agreement to continue with the installation.

After you accept the License Agreement, the following Select Installation Directory page is displayed.



5. Specify the path to your Sun ONE Application Server installation directory.
 - Click Browse to browse for a directory (or press Enter at the command line to accept the default installation directory).
 - If you enter a directory name that does not already exist, the Create New Directory? dialog is displayed.
 - Click Create Directory (or type 1 at the command line) to create a new directory.
 - Click Choose New (or type 2 at the command line) to return to the Select Installation Directory page.

The following Server Configuration Information page is displayed.

Sun ONE Application Server 7 Install Wizard

Sun
microsystems

Sun ONE
Application
Server 7

Server Configuration Information

Supply the admin user's password and override any of the other initial configuration settings as necessary.

Admin User:

Admin User's Password (8 chars minimum):

Re-enter Password:

Admin Server Port:

HTTP Server Port:

< Back Next > Cancel Help

6. On the Server Configuration Information page (or at the command line), enter the following values:
- Admin User—Name of the user who administers the server (for example, admin).
 - Admin User's Password—Password to access the Admin Server. Minimum number of characters is 8. For example, adminadmin. Re-enter the password to confirm your choice.
 - Admin Server Port—Port number to access the Admin Server.

A default port number is displayed (for example 4848, if that port is not in use on your machine). Change the default number if necessary. The installation program will check port numbers for validity and availability when you click Next.

- HTTP Server Port—Port number to access the default server instance.

A default port number is displayed (for example 1024, if that port is not in use on your machine). Change the default number if necessary. The installation program will check port numbers for validity and availability when you click Next.

NOTE The installation program automatically detects ports in use and suggests currently unused ports for the default settings. By default, if you are installing as root on UNIX, or are on Microsoft Windows, the initial default ports are 80 for the HTTP server and 4848 for the Admin Server. If you are installing as non-root on UNIX, the HTTP server port defaults to 1024.

If an initial default port is being actively used on your system, the installation program will suggest an alternative port number.

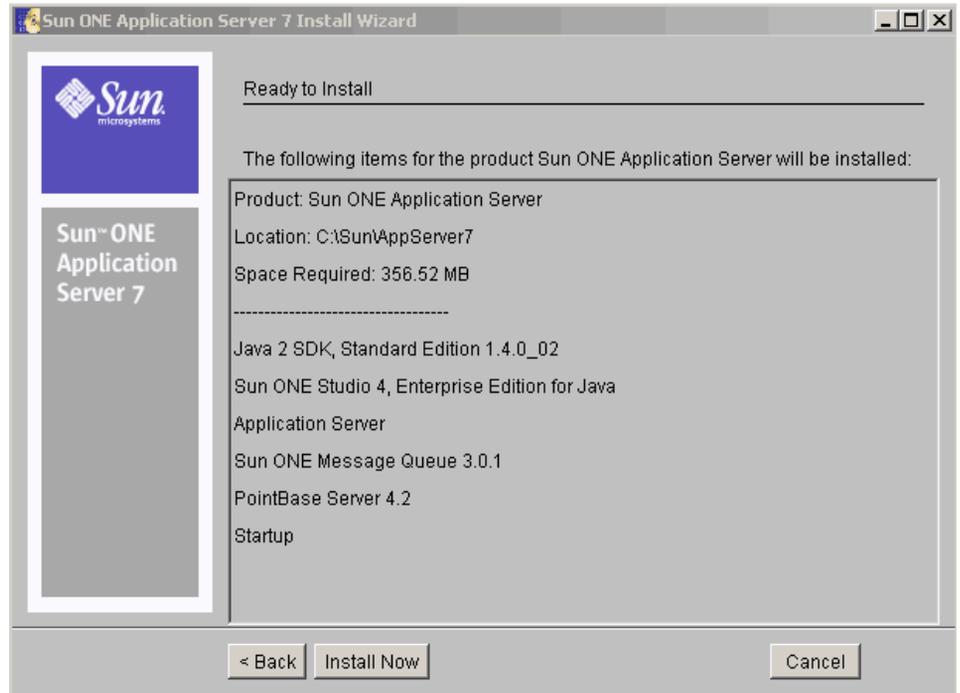
7. Click Next.

The installation program proceeds to verify that you have enough disk space to install the product. The Checking Disk Space progress indicator bar is displayed.

- If you do not have enough disk space, an error message is displayed.

You will need to exit the installation program, create enough space, and restart the installation. Information on space requirements is contained in [“Platform Requirements” on page 26](#).

- If you have enough disk space, a Ready to Install page similar to the following is displayed.

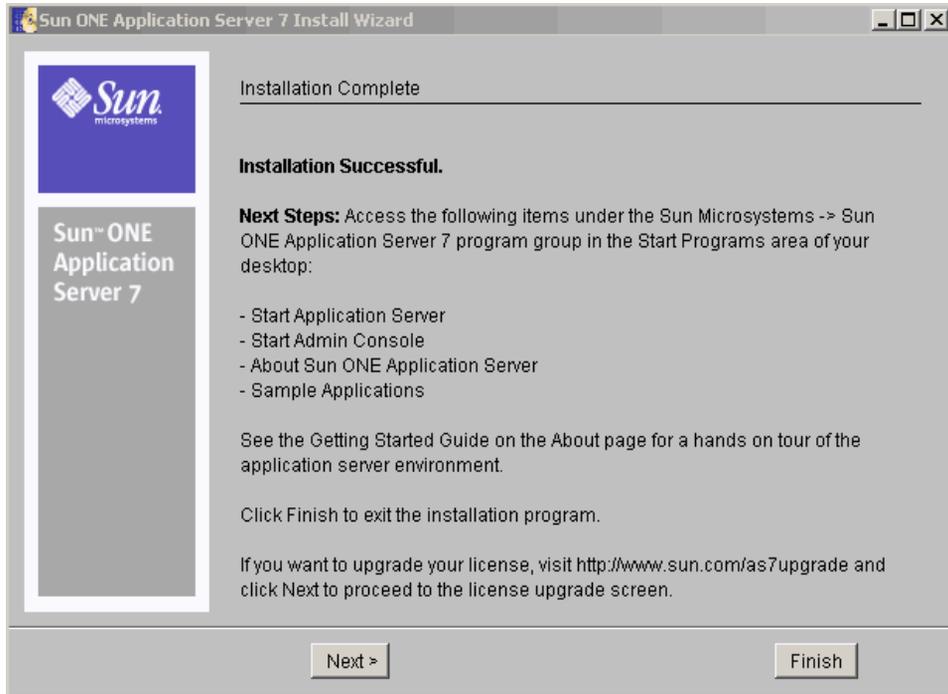


8. You have the following choices:

- Click Back if you want to return to the Server Configuration Information page. Disk space is rechecked if you do this.
- Click Install Now (or type 1 at the command line) to start the installation process.
- Click Cancel to exit the installation program.

An Installation progress indicator bar is displayed.

When installation finishes, an Installation Complete page similar to the following is displayed.



9. On Microsoft Windows, you can now decide to upgrade your license.
 - a. Click Next to display the following Upgrade License page.



If you change your mind about transitioning, click Back to return to the previous screen.

NOTE You can transition your license later by following the instructions in [“Transitioning a License” on page 109](#).

- b. To upgrade your license, enter the license number and click Apply.
The License Upgrade Successful dialog displays.
 - c. Click OK.
- 10.** Click (or type) Finish to complete the installation.
The About Sun ONE Application Server page is displayed.

11. Set the PATH environment variable.

You will need to configure your environment to include the *install_dir/bin* directory of the Sun ONE Application Server. Instructions for doing this are contained in [“Setting the PATH Environment Variable” on page 73](#).

12. The Sun ONE Application Server environment is not automatically started, so you will need to start it to verify that installation was successful. Instructions for various methods of starting the Sun ONE Application Server are contained in [“Starting and Stopping the Server” on page 77](#).

Under the Sun Microsystems, Sun One Application Server program group in the Start Programs area of your desktop, do the following:

a. Start Application Server.

A screen similar to the following indicates that the Sun ONE Application Server has started:

```

Sun ONE Application Server: server1
INFO: CORE5076: Using [Java HotSpot(TM) Server VM, Version 1.4.0_02] from [Sun M
icrosystems Inc.]
INFO: JMS5023: JMS service successfully started. Instance Name = domain1_server1
. Home = [C:\Sun\appserver7\img\bin]
INFO: JTS5014: Recoverable JTS instance, serverId = [100]
INFO: RAR5060: Install JDBC Datasources ...
INFO: JMS5015: Install JMS resources ...
INFO: HTTP3072: HTTP listener http-listener-1 [http://immdocs1:80] ready to acce
pt requests
startup: server started successfully
INFO: CORE3274: successful server startup
INFO: CORE5053: Application onReady complete.

```

b. Start Admin Console.

When the Administration interface (also known as the Admin Console) has been started, the initial page of the Sun ONE Application Server graphical interface is displayed as follows.

The screenshot shows the Sun ONE Application Server management console. The breadcrumb navigation is 'Home' > 'Documentation' > 'Help'. The main header is 'Sun ONE Application Server'. The left sidebar shows a tree view with 'Domains > domain1' expanded, containing 'Admin Server', 'App Server Instances', 'goliath', and 'server1'. The main content area is titled 'App Server Instances' and features a 'New...' button and a table with the following data:

Name	Application Root	Status
goliath	C:/Sun/AppServer7/domains/domain1/goliath/applications	not running
server1	C:/Sun/AppServer7/domains/domain1/server1/applications	not running

13. You can determine whether the Sun ONE Application Server has started successfully by accessing the application server instance's HTTP server listener. Using a browser, access the following location:

`http://host_name:port_number`

where *port_number* is the HTTP server port number specified during installation. The default HTTP server port number is 80, but it may be different based on the ports in use during installation.

Refer to “[Troubleshooting](#)” on page 99 for information on resolving problems.

Installing in Silent Mode (Non-Interactive)

If you want to perform your evaluation installation in silent mode, follow the instructions in “[Installing in Silent Mode \(Non-Interactive\)](#)” on page 63.

Installing in Silent Mode (Non-Interactive)

Installing for Development

This chapter provides instructions for installing the Sun™ Open Net Environment (Sun ONE) Application Server 7, Upgrade 2 product for development and operational purposes. You can install this non-evaluation version of the product interactively or you can use silent mode to replicate an installation scenario on multiple machines.

The following topics are addressed here:

- [What You're Installing](#)
- [Downloading from the Web](#)
- [Installing the Development Product](#)
- [Installing in Silent Mode \(Non-Interactive\)](#)

You should be familiar with the information in “[Preparing to Install](#)” on page 15 before beginning the tasks in this chapter.

For any late-breaking updates to these instructions, check the *Sun ONE Application Server Release Notes*. For more information about configuring your application server after installation, refer to the *Sun ONE Application Server Administrator's Guide*.

The following locations contain product downloads in addition to other useful information:

http://www.sun.com/software/download/app_servers.html

http://www.sun.com/software/products/appsrvr/home_appsrvr.html

What You're Installing

In general, you are installing the basic components that provide the functionality of the Sun ONE Application Server product. You can choose *not* to install some of the components (indicated as optional below). Later, if you want to add a component that you initially chose not to install, you can do an *incremental installation*. This allows you to add a component to your installation.

Only one Sun ONE Application Server installation can reside on a single machine for a non-evaluation installation. If an installation of the Sun ONE Application Server already exists on your system, the installation program will not overwrite it, but the pre-existing installation will be detected and you will not be allowed to proceed with the installation. For instructions on removing the product from your system, refer to [“Uninstalling the Sun ONE Application Server Software” on page 93](#).

NOTE If you need to remove the Sun ONE Application Server from your system, it is important to use the uninstall program. If you attempt another method, problems will arise when you try to reinstall the same version, or when you install a new version.

The following installation components are included with the Sun ONE Application Server product:

- Sun ONE Application Server, including its graphical and command-line administrative tools
- Sun ONE Application Server Administration Client (command-line tool only)

NOTE You can choose to install the administration client command-line version separately on a machine where the Sun ONE Application Server is not installed. Do this by selecting only the Administration Client component during installation.

- Sun ONE Message Queue 3.0.1 SP2
- Java 2 Software Development Kit (J2SE), Standard Edition 1.4.1_04
- PointBase Database Server and Type 4 JDBC driver (Not available in the Solaris 9 bundled version of Sun ONE Application Server.)
- Sample Applications

- Support for Sun ONE Studio 4.0, Enterprise Edition for Java (Not available for Solaris x86.)

See “[Installation Components](#)” on page 16 for descriptions of the Sun ONE Application Server components.

Downloading from the Web

This section provides instructions for downloading the Sun ONE Application Server installation files from the web site.

Downloading for UNIX

1. Select the download from the following Sun ONE Application Server download site and save it in a temporary directory on your UNIX machine.

http://www.sun.com/software/download/app_servers.html

2. Navigate to the directory where you downloaded the file. For example:

```
cd /temp_dir/as7download/
```

3. Unzip the .gz file using the `gunzip` command in this format:

```
gunzip filename.tar.gz
```

4. Untar the unzipped file using the `tar -xvf` command in this format:

```
tar -xvf filename.tar
```

This process may take a little time. When the files are unpacked, you will see the `sun-appserver7` directory, which contains the `setup` file and the `pkg` directory.

Downloading for Microsoft Windows

The development version of Sun ONE Application Server is only available on CD for Microsoft Windows.

However, you can upgrade your evaluation license either during installation of the Microsoft Windows evaluation version, or after installation by following the instructions in “[Restart the Sun ONE Application Server software.](#)” on page 111.

NOTE On Microsoft Windows—During evaluation download, you will receive an email notification providing you with a non-expiring license key (free for developer use) that you can use to upgrade your evaluation license. You will be given the opportunity to upgrade your license at the end of the Sun ONE Application Server installation process.

Installing the Development Product

The section provides instructions for installing the Sun ONE Application Server software using graphical-interface. If you choose to use the command-line interface, the steps are identical. However, in place of graphics-based installation screens, text-based screens are displayed.

The following steps apply to all platforms:

NOTE You must have superuser privileges to install the non-evaluation version of the Sun ONE Application Server 7 software.

1. Verify that you have superuser privileges and that system requirements have been met. See [“System Requirements” on page 25](#) for information on requirements.
2. Start all the processes on your system that use ports and are expected to run at the same time as the Sun ONE Application Server software. This allows the installation program to detect what ports are in use and avoid assigning them for other purposes.
3. If you are not in the directory already, navigate to the directory where you unpacked the installation files. You will see the `setup.exe` file.

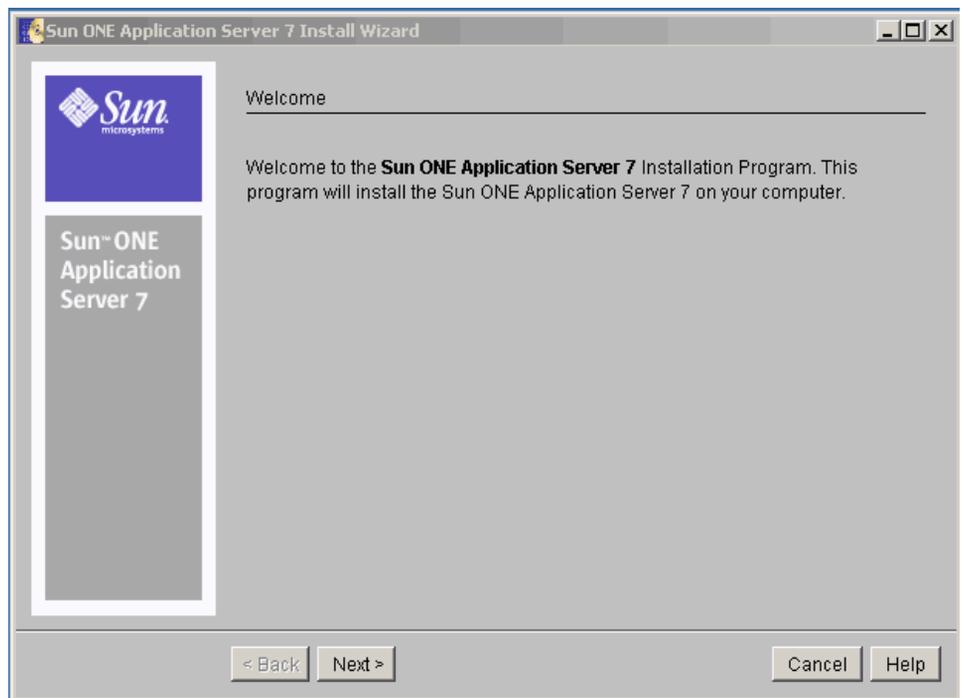
NOTE On UNIX—If you are installing the Sun ONE Application Server software remotely using the graphical interface, you must enable the display configuration on the machine where you are installing the product. Do this by setting the DISPLAY environment variable. DISPLAY contains the name of the server and display using this format: `host_name.domain_name.com:0.0`

4. Select your installation method as follows:
 - To run the installation using the graphical interface, type the following at the command prompt (in Microsoft Windows, you can double-click the `setup.exe` file):

```
./setup
```
 - To run the installation using the command-line interface, type:

```
./setup -console
```

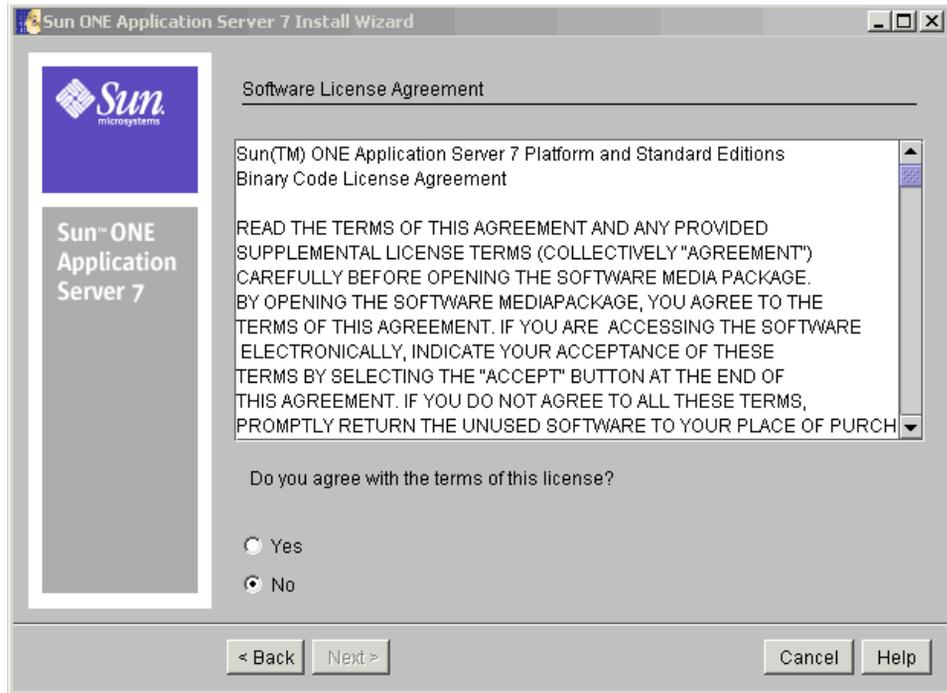
The Welcome page of the installation program is displayed as follows.



NOTE Click the Help button to display context-sensitive information for a page.

5. Read the Welcome page and click Next.

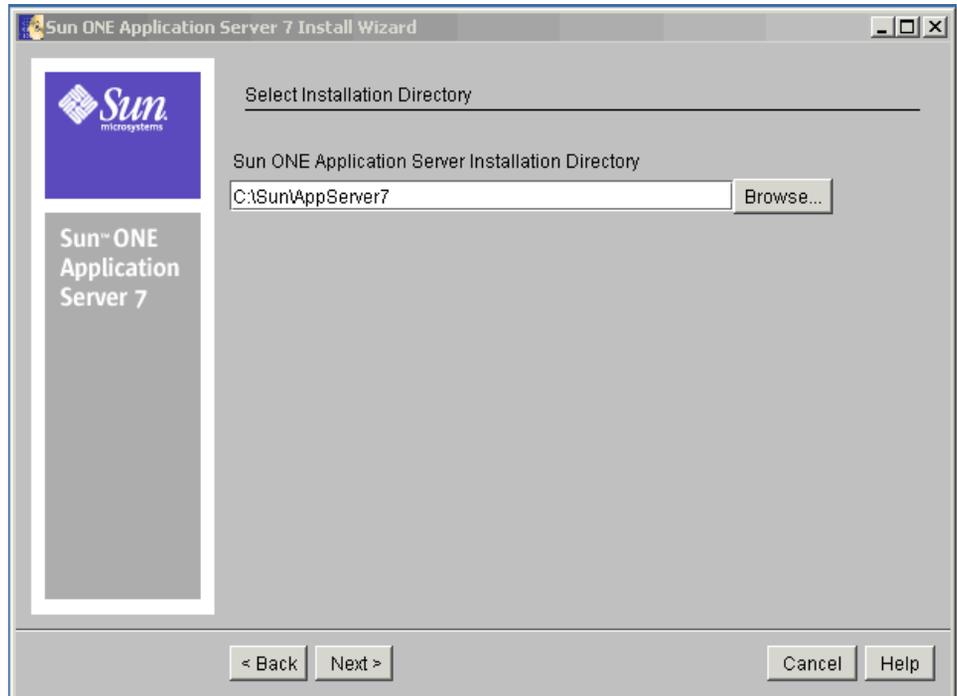
The following License Agreement page is displayed.



6. Read the License Agreement and click Yes to agree to the terms of the license, then click Next (or type Yes at the command line).

NOTE You must accept the license agreement to continue with the installation.

After you accept the License Agreement, the following Select Installation Directory page is displayed.



7. Specify the path to your Sun ONE Application Server installation directory.
 - Click Browse to browse for a directory (or press Enter at the command line to accept the default installation directory).
 - If you enter a directory name that does not already exist, the Create New Directory? dialog is displayed.
 - Click Create Directory (or type 1 at the command line) to create a new directory.
 - Click Choose New (or type 2 at the command line) to return to the Select Installation Directory page.

The component selection dialog box displays the available components.

8. Choose from the components listed on the component selection dialog box (or type Yes or press Enter to accept a component from the command line).
 - Application Server
 - Sample Applications

- PointBase 4.2
 - Application Server Administration Client
 - Support for Sun ONE Studio 4.0, Enterprise Edition
9. Choose to install Sun ONE Message Queue 3.0.1, or use a preinstalled version.

On Microsoft Windows—The required version of the Sun ONE Message Queue is always installed even if you already have another version of Sun ONE Message Queue on your system.

On Solaris—The installation program will detect if you have the correct version of the Sun ONE Message Queue preinstalled in your system and present you with one of the following actions:

- If the correct version of the package-based Sun ONE Message Queue is installed, it will be reused. The installation program will proceed to the next step.
 - If there is no package-based Sun ONE Message Queue installed, you can choose to let the installation program install the Sun ONE Message Queue packages automatically
 - If an incorrect version of the package-based Sun ONE Message Queue is found, a message is displayed, asking if you want to upgrade your current version or cancel. Choose one of the following options:
 - To have the installation program update your current Sun ONE Message Queue, click Upgrade (or type 1 at the command line).
 - To exit the installation program, click Cancel (or type 2 at the command line).
10. Choose to install J2SE 1.4.1_04 or use a preinstalled J2SE.

NOTE If the installation program reports an incompatible or non-upgradeable version of J2SE, the pre-existing package-based version of J2SE must be uninstalled using the `pkgrm` command before proceeding. Deleting or renaming the directory will not work.

On Windows—The installation program detects if you have the correct version of the J2SE preinstalled in your machine.

- If the correct version of the J2SE is installed, it will be reused or you can enter the path to another correct version. The installation program proceeds to the next step.
- If there is no J2SE installed, you can choose to let the installation program install the J2SE package automatically or reuse an existing J2SE installation.

On Linux—The installation program will detect if you have the correct version of the J2SE SDK preinstalled in your machine and present you with one of the following actions:

- If the correct version of the package-based J2SE SDK is installed, it will be reused. The installation program proceeds to the next step.
- If there is no package-based J2SE SDK installed, you can choose to let the installation program install the package-based J2SE SDK automatically or reuse an existing one.
- If an incorrect version of the package-based J2SE SDK is found, it is ignored. The correction version of the package-based J2SE SDK is installed.

NOTE On Linux, if the Sun ONE Application Server is required to run on a J2SE version lower than 1.4.1_03, the following JVM option must be set: `<jvm-options> -Xcongc </jvm-options>`

On Solaris—The installation program detects if you have the correct version of the J2SE preinstalled in your machine and present you with one of the following actions:

- If the correct version of the package-based J2SE is installed, it will be reused or you can enter the path to another correct version. The installation program proceeds to the next step.
- If there is no package-based J2SE installed, you can choose to let the installation program install the J2SE package automatically or reuse an existing J2SE installation.
- If an incorrect version of the package-based J2SE is found, a message is displayed asking if you want to upgrade your current version or cancel. Choose one of the following options:
 - To have the installation program update your current J2SE version, click Upgrade (or type 1 at the command line).

NOTE Because other applications might be running and using this J2SE installation, upgrading J2SE is a potentially disruptive process. You may prefer to cancel the current installation and take care of all dependencies (such as gracefully shutting down processes).

If you choose not to upgrade the J2SE version yourself, you can let the installation program do it.

- To exit the installation program, click Cancel (or type 2 at the command line).

Before continuing with the installation, you must uninstall the J2SE currently located in `/usr/j2se` or upgrade it to J2SE 1.4.1_04. Then restart the Sun ONE Application Server installation. Instructions for uninstalling can be found in [“Uninstalling the Sun ONE Application Server Software” on page 93](#).

NOTE On UNIX—If your J2SE requires an upgrade, you will need to reboot your machine after completing the Sun ONE Application Server installation.

NOTE The Sun ONE Application Server 7 software is certified to work with J2SE1.4.1_04 from Sun Microsystems. Third-party J2SE development kits, even with appropriate version number, are not supported.

11. On UNIX only—Identify your server configuration directory.

Enter the path to your Sun ONE Application Server configuration installation directory.

- Click the ellipsis (...) to browse for a directory (or press Enter at the command line to accept the default installation directory).
- If the directory does not already exist, the Create New Directory? dialog is displayed.
- Click Create Directory (or type 1 at the command line). You can also click Choose New (or type 2 at the command line) to select an existing directory.

12. On UNIX only—Identify your server domains directory.

Enter the path to your Sun ONE Application Server domains installation directory.

- Click the ellipsis (...) to browse for a directory (or press Enter at the command line to accept the default installation directory).
- If the directory does not already exist, the Create New Directory? dialog is displayed.
- Click Create Directory (or type 1 at the command line). You can also click Choose New (or type 2 at the command line) to select an existing directory.

The following Server Configuration Information page is displayed.

The screenshot shows a window titled "Sun ONE Application Server 7 Install Wizard". On the left is a vertical sidebar with the Sun logo and the text "Sun ONE Application Server 7". The main area is titled "Server Configuration Information" and contains the instruction: "Supply the admin user's password and override any of the other initial configuration settings as necessary." Below this are several input fields: "Admin User:" with the value "admin", "Admin User's Password (8 chars minimum):", "Re-enter Password:", "Admin Server Port:" with the value "4848", and "HTTP Server Port:" with the value "80". At the bottom are buttons for "< Back", "Next >", "Cancel", and "Help".

13. In the Server Configuration Information page (or at the command line), enter the following:

- Admin User—Name of the user who administers the server (for example, admin).

- Admin User's Password—Password to access the Admin Server. Minimum number of characters is 8. For example, adminadmin. Re-enter the password to confirm your choice.
- Admin Server Port—Port number to access the Admin Server.

A default port number is displayed (for example 4848, if that port is not in use on your machine). Change the default number if necessary. The installation program will check port numbers for validity and availability when you click Next.
- HTTP Server Port—Port number to access the default server instance.

A default port number is displayed (for example 1024, if that port is not in use on your machine). Change the default number if necessary. The installation program will check port numbers for validity and availability when you click Next.

NOTE The installation program automatically detects ports in use and suggests currently unused ports for the default settings. By default, if you are installing as root on UNIX or are on Microsoft Windows, the initial default ports are 80 for the HTTP server and 4848 for the Admin Server.

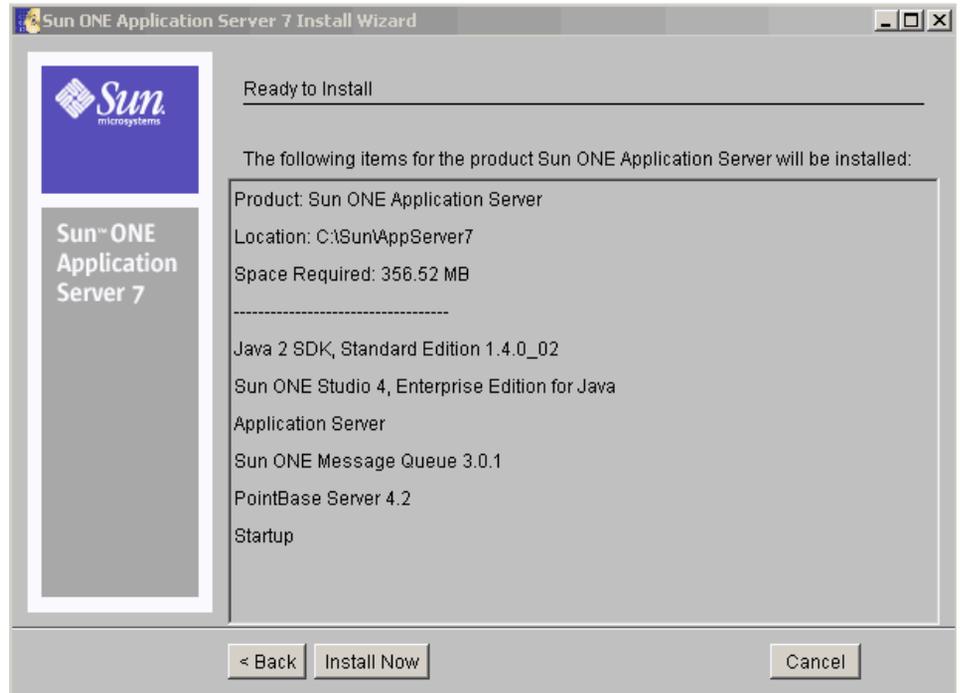
If these initial default ports are being actively used on your system, the installation program will suggest alternative port numbers.

14. Enter the path of your preinstalled Sun ONE Studio 4.0, if applicable.
15. Click Next.

The installation program proceeds to verify that you have enough disk space to install the product. The Checking Disk Space progress indicator bar is displayed.

- If you do not have enough disk space, an error message is displayed.

You will need to exit the installation program, create enough space, and restart the installation. Information on space requirements is contained in [“Platform Requirements” on page 26](#).
- If you have enough disk space, a Ready to Install page similar to the following is displayed.

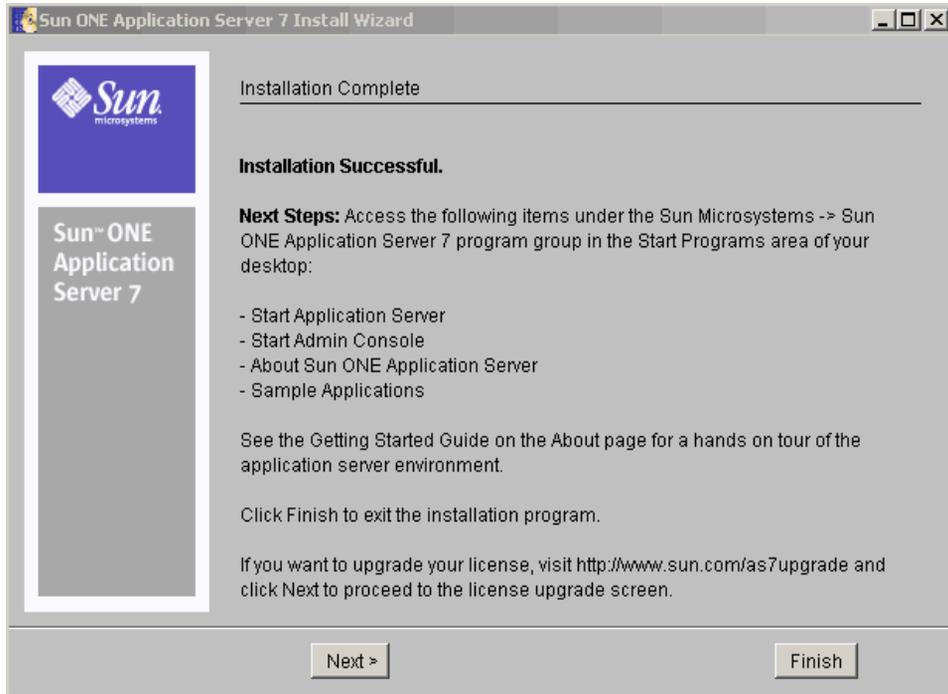


16. You have the following choices:

- Click Back if you want to return to the Server Configuration Information page. Disk space is rechecked if you do this.
- Click Install Now (or type 1 at the command line) to start the installation process.
- Click Cancel to exit the installation program.

An Installation progress indicator bar is displayed.

When installation finishes, an Installation Complete page similar to the following is displayed.



You can now decide to transition (upgrade) your license.

NOTE You cannot transition the evaluation license of the Solaris non-package-based Sun ONE Application Server software.

17. Click Next to display the following Upgrade License page.



If you change your mind about upgrading the license now, click **Back** to return to the previous screen.

NOTE You can upgrade your license later by following the instructions in [“Transitioning a License” on page 109](#).

18. To upgrade your license, enter the license number and click **Apply**.
The **License Upgrade Successful** dialog displays.
19. Click **OK**.
20. Click (or type) **Finish** to complete the installation.
The **About Sun ONE Application Server** page is displayed.

21. Set the PATH environment variable.

You will need to configure your environment to include the `bin` directory of the Sun ONE Application Server. Instructions for doing this are contained in [“Setting the PATH Environment Variable”](#) on page 73.

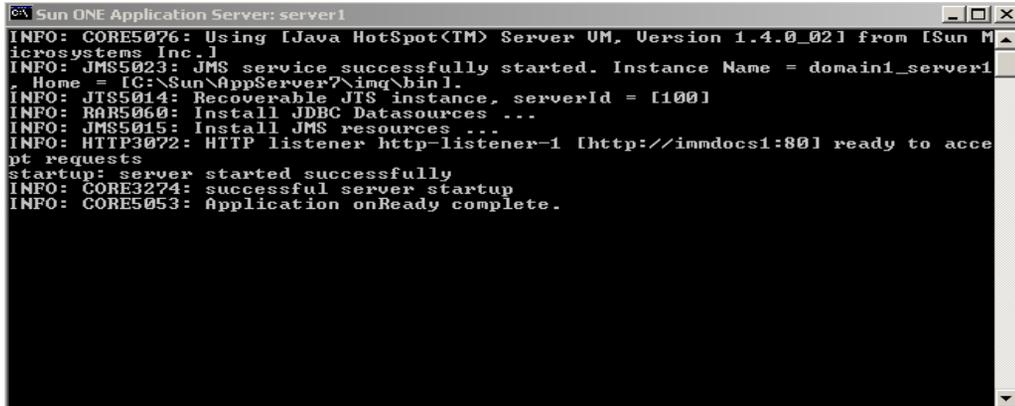
22. **For Solaris 9 bundled only**—There are additional tasks required for this type of installation. Refer to [“Completing a Solaris 9 Bundled Installation”](#) on page 67.

23. The Sun ONE Application Server environment is not automatically started, so you will need to start it to verify that installation was successful. Instructions for various methods of starting the server are contained in [“Starting and Stopping the Server”](#) on page 77.

Under the Sun Microsystems, Sun One Application Server program group in the Start Programs area of your desktop, do the following:

a. Start Application Server.

A screen similar to the following indicates that the Sun ONE Application Server has started:



```

Sun ONE Application Server: server1
INFO: CORE5076: Using [Java HotSpot(TM) Server VM, Version 1.4.0_02] from [Sun M
icrosystems Inc.]
INFO: JMS5023: JMS service successfully started. Instance Name = domain1_server1
; Home = IC:\Sun\AppServer7\img\bin1.
INFO: JTS5014: Recoverable JTS instance, serverId = [100]
INFO: RAR5060: Install JDBC Datasources ...
INFO: JMS5015: Install JMS resources ...
INFO: HTTP3072: HTTP listener http-listener-1 [http://imdocs1:80] ready to acce
pt requests
startup: server started successfully
INFO: CORE3274: successful server startup
INFO: CORE5053: application onReady complete.

```

b. Start Admin Console.

When Administration interface (also known as the Admin Console) has been started, the initial page of the Sun ONE Application Server graphical interface is displayed.

24. You can determine whether the Sun ONE Application Server has started successfully by accessing the application server instance's HTTP server listener. Using a browser, access the following location:

```
http://host_name:port_number
```

where *port_number* is the HTTP server port number specified during installation. The default HTTP server port number is 80, but it may be different based on the ports in use during installation.

Refer to for information on resolving problems.

Installing in Silent Mode (Non-Interactive)

If you choose to install the Sun ONE Application Server software in silent mode, the installation program runs without any user input. This is made possible when the installation program accesses a text file that provides the installation program with the configuration information it needs.

The following topics are discussed in this section:

- [How the Configuration File Is Created](#)
- [Installing in Silent Mode](#)

How the Configuration File Is Created

The configuration file is automatically created in the installation directory during a standard interactive installation. Your user input is collected. This forms the model for the silent installation which you can use later to install the product on one or more machines.

After a standard installation is complete, a configuration file similar to following exists:

```
# Wizard Statefile created: Tue Sep 03 11:03:27 PDT 2002
#
#           Wizard path:
# /temp_dir/sun-appserver7//temp_dir/sun-appserver7/appserv.class
#
# Wizard Statefile section for Sun ONE Application Server
#
```

Installing in Silent Mode (Non-Interactive)

```
[STATE_BEGIN Sun ONE Application Server 808daad84da2817ce79da504cae4c78ffb57d50e]
defaultInstallDirectory = /opt/SUNWappserver7
currentInstallDirectory = /opt/SUNWappserver7
SELECTED_COMPONENTS = Java 2 SDK, Standard Edition 1.4.0_02#Application
Server#Sun ONE Message Queue 3.0.1#Sample Applications#PointBase Server
4.2#Uninstall#Startup
USE_BUNDLED_JDK = TRUE
JDK_LOCATION = /usr/j2se
JDK_INSTALLTYPE = PREINSTALLED
AS_INSTALL_DEFAULT_CONFIG_DIR = /etc/opt/SUNWappserver7
AS_INSTALL_CONFIG_DIR = /etc/opt/SUNWappserver7
AS_INSTALL_DEFAULT_VAR_DIR = /var/opt/SUNWappserver7
AS_INSTALL_VAR_DIR = /var/opt/SUNWappserver7
DOMAINS_DIR = /var/opt/SUNWappserver7/domains
INST_ASADMIN_USERNAME = admin
INST_ASADMIN_PASSWORD = password
INST_ASADMIN_PORT = 4848
INST_ASWEB_PORT = 80
AS_INSTALL_DEFAULT_STUDIO_DIR = /
AS_INSTALL_STUDIO_DIR = /
INSTALL_STATUS = SUCCESS
[STATE_DONE Sun ONE Application Server 808daad84da2817ce79da504cae4c78ffb57d50e]
```

Installing in Silent Mode

To install the Sun ONE Application Server software in silent mode, perform these steps:

1. With a text editor, examine the current installation configuration file (called `statefile`) and verify that it contains what you want to use for your silent installation. You can save this file with any name. For example:

```
cp statefile silent_config
```
2. Copy the Sun ONE Application Server installation files to each machine where you plan to install the Sun ONE Application Server software.

3. Copy your silent mode configuration file to each machine where you plan to install the Sun ONE Application Server software.
4. If you are not in the directory already, navigate to the directory where you copied the installation files and your silent mode configuration file.
5. As superuser, start silent installation at the command line using the following command format:

```
./setup -silent config_file_name
```

The installation program reads the specified *config_file_name*, checks for adequate disk space, then installs the product based on the data in *config_file_name*.

When the prompt is returned, the silent installation is completed.

6. Set the PATH environment variable.

You will need to configure your environment to include the `bin` directory of the Sun ONE Application Server. Instructions for doing this are contained in [“Setting the PATH Environment Variable” on page 73](#).

7. Start the Sun ONE Application Server software.

The Sun ONE Application Server is not automatically started during installation. Use the instructions on [“Starting and Stopping the Server” on page 77](#) to start the server.

When the Admin Console has been started, the initial page of the Sun ONE Application Server graphical interface is displayed.

Installing in Silent Mode (Non-Interactive)

Completing a Solaris 9 Bundled Installation

There are two kinds of Solaris 9 distributions for the Sun™ Open Net Environment (Sun ONE) Application Server 7: bundled and unbundled. If you received your copy of the Sun ONE Application Server as part of the Solaris 9 installation, you have the Solaris *bundled* version.

If you received a standalone copy of the Sun ONE Application Server, you have the *unbundled* version.

NOTE If you are using the unbundled Solaris version of the Sun ONE Application Server, or if you are using the Microsoft Windows version, you do not need to perform the tasks in this chapter because a domain, an Admin Server, and a server instance are automatically created.

This chapter provides instructions for completing your Solaris 9 bundled installation.

The following topics are addressed here:

- [About Solaris 9 Installation](#)
- [Creating an Administrative Domain](#)
- [Starting the Administration Server](#)
- [Creating an Application Server Instance](#)

About Solaris 9 Installation

The Sun ONE Application Server software that is installed as part of a Solaris 9 installation contains only the necessary libraries, executables and other files required to support the Sun ONE Application Server. No application server configuration exists upon installation.

To create an initial configuration, you must use the `asadmin` command line interface with the `create-domain` subcommand to create a Sun ONE Application Server administrative domain.

You will be creating both the Admin Server and application server instance configurations.

Creating an Administrative Domain

When you create an administrative domain, you create an Admin Server. The Admin Server is a special instance of the Sun ONE Application Server that serves the Administration interface and provides administrative facilities for the command-line interface.

When you create a new domain, you specify:

- A port number for the Admin Server—The default when you install an unbundled version is 4848.
- An administration username and password—These passwords are required when you access the Admin Server, either when you access the Administration interface or when you run the command-line interface.
- The domain location—The port number associated with the Admin Server of the domain.

By default, the `create-domain` subcommand creates the new administrative domain configuration under `/var/appserver/domains/`. If you are logged in as a user that does not have write permissions to this area, you must specify a suitable location when creating the administrative domain. Specify the location in which to create the domain configuration using the `--path` option of the `create-domain` subcommand.

To create an administrative domain, perform these steps:

1. Verify that the `/usr/sbin` directory is included in your path. If it has not been added, refer to [“Setting the PATH Environment Variable” on page 73](#) for instructions.

- From the command line, run the following command to create a new administrative domain called `domain1`:

NOTE To create a domain, non-root users must be part of the `asadmin` group.

```
asadmin create-domain --path <domain_config_dir> --adminport
4848 --adminuser admin --adminpassword password domain1
```

where *domain_config_dir* specifies the location under which the administrative domain configuration will be created. The `--adminport`, `--adminuser`, and `--adminpassword` options specify the initial settings of the new administrative server defined for the domain.

If the name `domain1` has already been used, run the `create-domain` subcommand again with another domain name. You can use periods and other characters in your domain names. You could use your login user name as a qualifier to help ensure that your domain name is unique. For example: `ckamps.domain1`.

The following message should be displayed:

```
Created Domain domain1 successfully
```

- Run the `list-domains` subcommand to see a list of all of the domains configured for the Sun ONE Application Server installation:

```
asadmin list-domains
domain1 [<domain_config_dir> domain1]
```

where the value of *domain_config_dir* represents either the default location for newly created administrative domains or the value specified on the `--path` option of the `create-domain` subcommand.

For more information on how to prepare your Sun ONE Application Server environment after Solaris 9 installation, consult the Getting Started chapter of the *Sun ONE Application Server Administrator's Guide*.

Starting the Administration Server

To use the graphical Administration interface or to use many of the commands in the command-line interface, you must have a running Admin Server. Follow the instructions in [“Starting and Stopping the Server” on page 77](#) to start the Sun ONE Application Server.

Creating an Application Server Instance

After you have created a domain and started the Admin Server, you need to create an application server instance. Each application server instance has its own J2EE configuration, J2EE resources, application deployment areas, and server configuration settings. (On the unbundled version, the server instance that is automatically created at installation is called `server1`. You will often see `server1` used in examples throughout the documentation.)

You can create an application server instance through the Administration interface or through the command-line interface. The server instance is created in a folder within the domain.

NOTE Creating an application server instance under your own administrative domain does not require that your user ID be part of the UNIX group that has write privileges to the domain configuration files.

To create an application server instance:

1. Verify that the Admin Server is running.
2. Run the `create-instance` subcommand:

```
asadmin create-instance --domain domain1 --instanceport 80
server1
```

where `domain1` is the domain name specified during domain creation, `80` is the HTTP server port number of the application server instance, and `server1` is the name of the instance. Specify appropriate values for these options depending on your specific environment.

NOTE Because port numbers lower than 1024 are not accessible to non-root users, you will need to specify a port number greater than 1024 if you are logged in as a non-root user.

If you have only a single administrative domain defined on your system, you do not need to specify the target domain name when creating an instance.

For more information on how to set up your Sun ONE Application Server environment after a Solaris 9 installation, consult the *Sun ONE Application Server Administrator's Guide*.

Post-installation Tasks

This chapter discusses some tasks you may need to perform during or after installing the Sun™ Open Net Environment (Sun ONE) Application Server 7, Upgrade 2 software.

The following topics are addressed here:

- [Setting the PATH Environment Variable](#)
- [Viewing Man Pages](#)
- [Starting and Stopping the Server](#)
- [Implementing the Web Server Plug-in](#)
- [Implementing the Web Services Client](#)
- [Deciding Where to Install the Sun ONE Studio Plug-in](#)
- [Accessing the Sample Applications](#)

Setting the PATH Environment Variable

After installing the Sun ONE Application Server software, you will need to configure your environment to include the `bin` directory of the Sun ONE Application Server if you are going to do any of the following:

- Run the `asadmin` command
- Run the command-line utility
- Access the `asant` utility for working with the sample applications.

This section explains how to add the *install_dir/bin* directory to your PATH environment variable. If you are familiar with the process of setting environment variables, do so now in your own environment. Otherwise, refer to one of the following sections:

- [Setting the PATH Variable on UNIX](#)
- [Setting the Microsoft Windows Environment](#)

Setting the PATH Variable on UNIX

On UNIX systems, it is recommended that you add the *install_dir/bin* directory of the Sun ONE Application Server to your login profile so it is automatically added to your environment's PATH setting during login.

1. Set your PATH variable to include the *install_dir/bin* directory.
2. Verify that the `asadmin` command can be found by running the `asadmin` command as follows:

```
asadmin
```

The following should appear on your screen:

```
Use "exit" to exit and "help" for online help
```

```
asadmin>_
```

NOTE The `asadmin` command launches the command-line interface of the Sun ONE Application Server. By running the `asadmin` command without arguments, you have entered the interactive mode of the command-line interface.

Type `help` at the `asadmin` command prompt to see the complete list of subcommands supported by the command-line interface.

If the command is not found, check your PATH setting, refresh your environment settings, and run `asadmin` again.

Setting the Microsoft Windows Environment

This section explains the steps for setting your Microsoft Windows environment:

- [Setting the Microsoft Windows PATH Variable](#)
- [Setting the net Command](#)

Setting the Microsoft Windows PATH Variable

On Microsoft Windows, it is recommended that you modify the system PATH environment variable using the Microsoft Windows control panel as follows:

1. Click the Microsoft Windows Start button, choose Settings, then Control Panel.
2. In the Control Panel, double-click System.
3. Click the Advanced tab, then choose Environment Variables.

The Environment Variables dialog box lists the environment variables that apply to your current user account as well as to the system as a whole.

4. Select the existing PATH entry and click Edit or click New to create a new PATH environment variable.
5. Add the *install_dir/bin* value to the beginning of the PATH value.

For example, add `C:\Sun\AppServer7\bin;` to the front of the variable value.

6. Click OK to close the Edit User Variable dialog window.

The PATH variable should reflect the directory path that you just entered.

7. Click OK to apply the changes and to close the Environment Variables Window.
8. Click OK to close the System Properties window.
9. Verify that `asadmin` is available as follows:
 - a. Click the Microsoft Windows Start button, then choose Run.
 - b. In the Open field, enter `cmd` and click OK.
 - c. When the command window is displayed, type `asadmin` at the command prompt. The following should display:

```
C:\>asadmin
```

```
Use "exit" to exit and "help" for online help
asadmin>
```

NOTE The `asadmin` command launches the command-line interface of the Sun ONE Application Server. By running the `asadmin` command without arguments, you have entered the interactive mode of the command-line interface.

Type `help` at the `asadmin` command prompt to see the complete list of subcommands supported by the command-line interface.

- d. If your PATH variable is not set correctly, the following is displayed:

```
'asadmin' is not recognized as an internal or external
command, operable program or batch file.
```

In this case, go back into the Control Panel, fix your PATH setting, and run the `asadmin` command again from a *new* command window. Only a new command window will pick up the environment variable change.

10. Type `exit` to quit the command-line interface.

Setting the net Command

On some Windows 2000 systems, the Microsoft Windows `net` command is not automatically made available to the environment through the system PATH environment variable. This Microsoft Windows utility is used to start and stop the Sun ONE Application Server software.

To determine whether or not the `net` command is available in your environment, perform the following steps:

1. Click the Microsoft Windows Start button, then choose Run... to launch a command console window.
2. In the Open field, type `cmd` and click OK.
3. After the console starts, type `net` at the command prompt.
4. If the `net` command is not found, modify the system PATH environment variable to include your `Windows_install_root\system32` directory. For example:

```
C:\WINNT\system32;
```

Viewing Man Pages

To view man pages at the command line while using the Sun ONE Application Server product:

1. For Solaris unbundled—Add *install_dir*/man to your MANPATH environment variable.
2. Access man pages for the Sun ONE Application Server commands by typing `man command_name` at the command line. For example:

```
man asadmin
```

Starting and Stopping the Server

Since the Sun ONE Application Server is not automatically started during installation, you will need to start the application server environment and verify that it is running properly before you can deploy and exercise the sample application.

To start the Sun ONE Application Server on a UNIX or Microsoft Windows machine, you can use either of the following methods:

- [Using the Command-line Interface](#)
- [Using the Administration Interface](#)

In addition, on Microsoft Windows you can use the following facilities:

- [Using the Microsoft Windows Program Group](#)
- [Using Microsoft Windows Services](#)

Using the Command-line Interface

You will need to configure your environment to include the `bin` directory of the Sun ONE Application Server before you can run the command-line utility. Instructions for doing this are contained in [“Setting the PATH Environment Variable” on page 73](#).

You can use the `asadmin` command-line interface to start and stop:

- The entire application server
- A specific administrative domain

- An individual application server instance

The subcommands of `asadmin` listed in the following table are relevant to start and stop operations.

Table 5-1 Start/Stop Subcommands of `asadmin`

Subcommand	Description
<code>start-appserv</code>	Starts the entire Sun ONE Application Server.
<code>stop-appserv</code>	Stops the Sun ONE Application Server.
<code>start-domain</code>	Starts the administrative server and application server instances of the specified administrative domain. Note: A domain must exist before this command can be used.
<code>stop-domain</code>	Stops the administrative server and the application server instances of the specified administrative domain.
<code>start-instance</code>	Starts the specified application server instance. Can be run in either a local or remote mode. In local mode, running this subcommand does not require the administrative server to be running.
<code>stop-instance</code>	Stops the specified application server instance. Similar in operation to <code>start-instance</code> .

Using `start-domain` and `stop-domain`

If the Sun ONE Application Server is running, use the following command to stop both the Admin Server as well as the application server instance of the initially configured domain:

```
asadmin stop-domain --domain domain1 --local
```

where `domain1` is the default name of the administrative domain defined during installation of the Sun ONE Application Server.

As the command completes, you should observe the following results:

```
asadmin stop-domain --domain domain1 --local
Instance domain1:server1 stopped
Domain domain1 Stopped.
```

Likewise, you can start the initially-configured administrative domain by running the following command:

```
asadmin start-domain --domain domain1
```

As the command completes, you should observe the following results:

```
asadmin start-domain --domain domain1
Instance domain1:admin-server started
Instance domain1:server1 started
Domain domain1 Started.
```

Using start-instance and stop-instance

To stop a specific application server instance without relying on the presence of an Admin Server, you can use the following command:

```
asadmin stop-instance --local server1
```

where `server1` is the default name of the application server instance. If your environment contains more than one administrative domain, then you need to specify the administrative domain name when invoking the `stop-instance` command. For example:

```
asadmin stop-instance --local --domain domain1 server1
```

To start a specific application server instance in local mode, you can use the following command:

```
asadmin start-instance --local server1
```

If you want to start or stop an instance on a remote system, you can specify the target Admin Server and administrative user name and password on the `start-instance` and `stop-instance` commands.

Getting Helpful Information

If you run either of these subcommands without parameters, usage information is displayed. For example:

```
asadmin start-instance

Invalid number of operands received
Command 'start-instance' not executed successfully

USAGE: start-instance [--user admin_user] [--password
admin_password] [--host localhost] [--port 4848] [--local=false]
[--domain domain_name] [--debug=false] [--secure | -s]
instancename
```

Alternatively, you can issue the subcommands followed by the `--help` option to obtain complete usage information.

Using the Administration Interface

When the Admin Server is running, you can use the web-based Administration interface to start and stop application server instances.

1. Start the Administration interface (also called the Admin Console).

- On UNIX—Open a browser window and specify the location of your Admin Server's console application.

During installation, the default port number for the Admin Server is set to 4848. If this port was already in use, or you selected another port number, specify that port number. For example:

<http://localhost:4848>

- On Microsoft Windows—The easiest means of starting the web-based Administration interface is to click the Microsoft Windows Start button, then select Programs, Sun Microsystems, Sun ONE Application Server 7, Start Admin Console.

After selecting Start Admin Console, a window of your default browser will be launched with the appropriate location of the administrative server's console as set during installation.

2. Sign into the Administration interface using the administrative user name and password specified during installation.

After you've been successfully authenticated, the initial screen of the Administration interface is displayed as follows.

The screenshot shows the Sun ONE Application Server Administration Interface. The top navigation bar includes 'Home', 'Documentation', and 'Help'. The main header displays the Sun logo and 'Sun ONE Application Server'. The left sidebar shows a tree view with 'Domains > domain1' expanded, containing 'Admin Server', 'App Server Instances', 'goliath', and 'server1'. The 'App Server Instances' section is active, displaying a table with columns for Name, Application Root, and Status. A 'New...' button is visible above the table.

Name	Application Root	Status
goliath	C:/Sun/AppServer7/domains/domain1/goliath/applications	not running
server1	C:/Sun/AppServer7/domains/domain1/server1/applications	not running

3. Select the server1 node to access the start and stop functions.

The application server instance is either in a Running or Not Running state.

4. Depending on the server instance state, click either Start or Stop to start or stop the application server instance.

Using the Microsoft Windows Program Group

On Microsoft Windows, the easiest means of starting the entire application server is to access the Microsoft Windows program group.

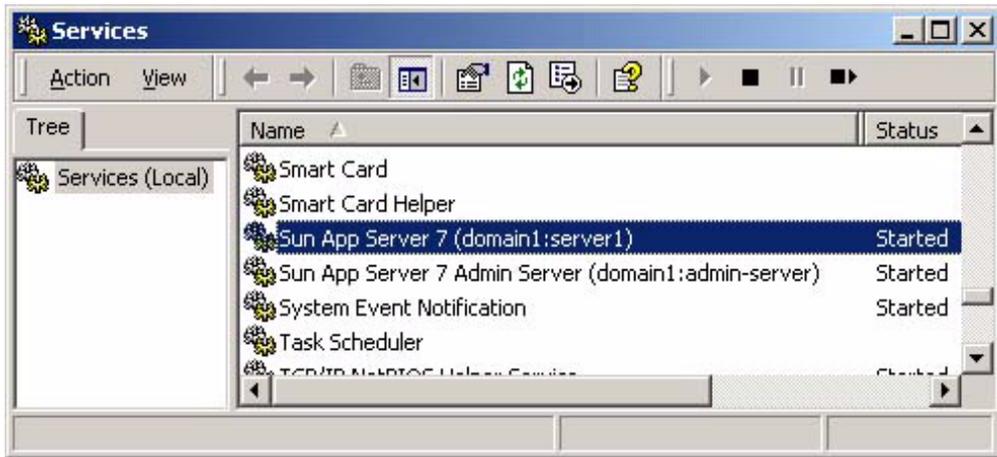
1. Click the Microsoft Windows Start button, then select Programs, Sun Microsystems, Sun ONE Application Server 7, Start Application Server.
2. To completely stop the application server, access the Sun ONE Application Server menu item in the Microsoft Windows program group.

This action will stop both the administrative server and the configured application server instances.

Using Microsoft Windows Services

After Sun ONE Application Server installation, several Microsoft Windows services are defined to control the startup and shutdown of the Admin Server and the initially-defined application server instance (server1). This section describes how to use these services to control the application server processes.

1. Click the Microsoft Windows Start button, choose Settings, then Control Panel.
2. When the Control Panel is displayed, doubleclick Administrative Tools.
3. When the Administrative Tools are displayed, double-click Services to view the services installed on your system.
4. Scroll down to view the Sun Application Server entries as shown in the following screen capture.



There are separate Microsoft Windows services for the Admin Server and the initially-configured application server instance, server1. When the Admin Server and the application server instance are running, the Status column of each service entry should say Started.

5. If the Admin Server and the application server instance have been stopped, start them again by using the Microsoft Windows services. That is, instead of using the Stop command when right-clicking a service, use the Start command.

Implementing the Web Server Plug-in

The web server plug-in is an HTTP reverse proxy plug-in that allows you to instruct a Sun ONE Web Server or Sun ONE Application Server to forward certain HTTP requests to another server.

NOTE On the Solaris x86 platform, the web server (reverse proxy) plug-in is supported only with Apache Web Server, not with the Sun ONE Web Server.

The web server plug-in must be installed and configured manually. For instructions, refer to the Configuring the Web Server Plug-in chapter in the *Sun ONE Application Server Administrator's Guide*.

Implementing the Web Services Client

To install and configure the web services client, refer to the *Sun ONE Application Server Developer's Guide to Clients*.

Deciding Where to Install the Sun ONE Studio Plug-in

If you have Sun ONE Studio pre-installed on your system, you can select Support for Sun ONE Studio on the component selection screen during the Sun ONE Application Server installation. When you subsequently enter the Sun ONE Studio 4 installation directory, the installation program will check that directory to be sure the proper Sun ONE Studio files are present.

NOTE The Sun ONE Studio Plug-in is not part of the Solaris x86 release because Sun ONE Studio is not available on the x86 platform.

The Sun ONE Studio 4 plug-in can be installed in the Studio user directory or in the Studio installation directory. If the plug-in is installed in the user directory, removing the user directory will uninstall the plug-in module. To make a decision about where to install the Sun ONE Studio 4 plug-in, you need to be aware of the following installation scenarios.

- Scenario 1—The Sun ONE Application Server installation program installs the plug-in in the Studio installation directory. Deleting the Studio user directory does not affect the plug-in module.

NOTE The Sun ONE Application Server installation program can be used only once to install the Sun ONE Studio 4 plug-in, after which the option is disabled.

- Scenario 2—You direct the Sun ONE Application Server installation program to install the plug-in in the Sun ONE Studio 4 user directory. Deleting the Studio user directory removes the plug-in module.
- Scenario 3—You install the plug-in using the Sun ONE Studio 4 update center, which installs the plug-in in the Studio user directory. Deleting the Studio user directory removes the plug-in module.

For post-installation configuration information, see the Sun ONE Studio 4, Enterprise Edition for Java with Application Server 7 Tutorial available here:

<http://docs.sun.com/db/prod/s1.studio4update1>

Accessing the Sample Applications

After you have verified your installation, you can tour the features of Sun ONE Application Server by running the sample applications. For more information, refer to *install_dir*/samples/index.html.

Upgrading the Sun ONE Application Server Software

This chapter contains instructions for upgrading an existing installation of the Sun™ Open Net Environment (Sun ONE) Application Server 7 software to the Update 2 release.

The following topics are addressed here:

- [Preparing to Upgrade](#)
- [How the Upgrade Program Works](#)
- [Upgrading the Sun ONE Application Server](#)
- [Troubleshooting](#)

Preparing to Upgrade

The Sun ONE Application Server upgrade program allows you to upgrade an existing Sun ONE Application Server 7 installation without needing to re-install the complete product. The upgrade functionality works for package-based installations as well as tar or zip installations, relying on operating system-specific mechanisms wherever necessary.

This section addresses the following topics:

- [Upgrade Components](#)
- [Requirements and Restrictions](#)

Upgrade Components

The Sun ONE Application Server 7 upgrade is distributed as a compressed archive which contains the `setup` file, a README file, configuration files used by the upgrade program, and the Sun ONE Application Server packages to be upgraded. Log files are generated during the upgrade process.

Requirements and Restrictions

- Access privileges
 - For UNIX packaged-based installations, you must be root.
 - For UNIX non-packaged based installations, you must have access to the installation directory.
 - For Microsoft Windows, you must have administrator privileges.
- On Solaris—Perl and `pkgadd` utilities must be present in the PATH environment variable.

NOTE For Solaris x86 and Linux users, Perl is available by default in `/usr/bin`.

- On Linux—Perl and `rpm` utilities must be present in the PATH environment variable.
- On Microsoft Windows—Perl must be installed on the system. A free Perl distribution for Windows can be found here:
<http://www.activestate.com/Products/ActivePerl/>
- Admin Server and instances—The Admin Server and application server instances cannot be running while the upgrade is in progress. If they are running, they will be stopped by the upgrade program.
- Configuration files—Your Sun ONE Application Server configuration files must not be modified during upgrade. If they are, those modifications will be overwritten when the configuration files are copied back to their installation locations.
- JDK—The upgrade program will not upgrade any existing Java Developers Kit (JDK). This is assumed to be a shared resource and as such it is a customer responsibility to upgrade this software if needed.

- NSS/NSPR packages—For an upgrade, the presence of Netscape Security Services (NSS) and Netscape Portable Runtime (NSPR) packages is assumed as part of your existing Sun ONE Application Server. If the NSS/NSPR packages are not present, you should *not* proceed with the upgrade. Your Sun ONE Application Server is either not installed, or it is corrupted. In either case, you will have to fully install the Sun ONE Application Server software.
- Do not modify the following files while the upgrade process is running:
 - `upgrade_state`
 - `package-list`
- Interrupting an upgrade—If you need to interrupt an upgrade, you can do so and then restart where you left off. However, until you have completed the upgrade, the server instance you are upgrading is in an inconsistent state, so it is important that you complete any upgrade you have started.

How the Upgrade Program Works

The upgrade program is a Perl script that uses a package list file to determine the parameters of your upgrade. A list of packages that need to be upgraded is contained in the `package-list` file.

The upgrade process consists of three phases: backup, installation, and reconfiguration. Log files are provided for monitoring and troubleshooting the upgrade process through these phases.

This section discusses the following topics:

- [Backup Phase](#)
- [Installation Phase](#)
- [Reconfiguration Phase](#)
- [Log Files](#)

Backup Phase

NOTE The backup phase is relevant only for Solaris non-packaged-based installations (Evaluation zip-based). This phase doesn't exist for Solaris package-based bundled or unbundled installations, or for Linux RPM-based installations. In these cases, the relevant files are preserved automatically.

At the start of the upgrade process, the upgrade program copies your Sun ONE Application Server configuration files to a separate location so they will not be affected by the upgrade process. In the reconfiguration phase at the end of the upgrade, these files are copied back to their original locations.

The backup directory is located under the directory where you uncompressed and expanded the upgrade files.

Installation Phase

During the installation phase, the upgrade program verifies that there is enough disk space available to do an upgrade of the relevant packages and then installs the upgrade components on the system.

If the installation phase fails, invoking the upgrade script will restart the installation after the last fully-installed package. The upgrade program refers to the audit file to see where the upgrade process was interrupted, and restarts appropriately. For example, if three out of five packages are already installed and an error occurs during installation of the fourth package, a restart would initiate a complete installation of the fourth package.

Reconfiguration Phase

In the reconfiguration phase, your original Sun ONE Application Server configuration files are copied back to the installation location.

It is up to you to prevent others from modifying the Sun ONE Application Server configuration files during upgrade; the upgrade program has no mechanism for preventing this.

Log Files

The events, errors, and status of the upgrade program are logged to the following files:

- [Upgrade Log File](#)
- [Audit File](#)

Upgrade Log File

Upgrade events and errors are captured in the `upgrade.log` file during the active upgrade process. For commonly-encountered errors, the most likely action needed is included in this file for your convenience.

Audit File

An audit file, `upgrade_state`, is used to maintain the state of the upgrade, which might be needed if failure occurs and the upgrade process is restarted. Using the audit file, the upgrade process can recover by restarting the upgrade after the last fully-installed component.

The audit file is located under the directory where you uncompress and expand the upgrade files.

NOTE The `upgrade_state` file must not be edited. If it is, any restart will fail.

Upgrading the Sun ONE Application Server

Sun ONE Application Server upgrade downloads are available at the following location:

http://www.sun.com/software/download/app_servers.html

At the download site, you will see a number of available archives. For example, the Sun ONE Application Server 7, Update 2 archive is version 7.0.0_02.

Perform the following steps to upgrade your Sun ONE Application Server software:

1. Verify that you have reviewed the information discussed in [“Requirements and Restrictions”](#) on page 86.

2. Verify the presence of the Netscape Security Services (NSS) and Netscape Portable Runtime (NSPR) packages. Refer to [“Solaris Patches Required” on page 27](#) for information and guidelines on these packages.
3. Download the compressed upgrade release Update 2 archive to the target machine.
 - For Solaris—`sun-appserver7-upgrade02-sol-sparc.tar.gz`
 - For Solaris x86—`sun-appserver7-upgrade02-sol-x86.tar.gz`
 - For Linux—`sun-appserver7-upgrade02-linux.tar.gz`
 - For Microsoft Windows—`sun-appserver7-upgrade02-win.zip`
4. Uncompress and expand the upgrade release archive. The directory package contains the upgraded versions of the packages to be installed.
5. Invoke the upgrade script as follows:

```
./setup
```

NOTE On Microsoft Windows—You can navigate using Microsoft Windows Explorer to the directory where you unzipped the files and run `perl setup` to start the upgrade process.

- a. The upgrade program verifies the profile (version number, package-based or not) of your currently-installed Sun ONE Application Server. If it is not correct for the upgrade you selected, an error message displays.
 - Resolve the problem and restart the upgrade.
 - b. The upgrade program determines if you have enough free space to perform the upgrade. If you do not, an error message displays.
 - Resolve the problem and restart the upgrade.
 - c. The upgrade program detects any running Sun ONE Application Server processes and stops them before continuing to upgrade.
6. The upgrade program presents you with queries appropriate to the type of upgrade you selected.
- Respond to the prompts as appropriate for your site.
7. After the upgrade is complete, start the Admin Server and the application server instances. Instructions can be found in [“Starting and Stopping the Server” on page 77](#).

8. Verify that the upgrade succeeded by running the `asadmin version` command. You should see the new upgraded version of the Sun ONE Application Server.

Troubleshooting

This section discusses possible problems that can occur during the upgrade process, and provides some suggested solutions.

- [To Restart or Interrupt an Upgrade](#)
- [Error Situations](#)

To Restart or Interrupt an Upgrade

- **Restarting and upgrade**—To restart the upgrade process for any reason, remove the `upgrade_state` file in the directory where the `setup` script is located and restart the upgrade.
- **Interrupting an upgrade**—If you need to interrupt an upgrade, you can do so and then restart where you left off. However, until you have completed the upgrade, the server instance you are upgrading is in an inconsistent state, so it is important that you complete any upgrade you have started.

Error Situations

- **If the errors are system-specific**—For example, if package-based installation consistently fails, examine the package installation logs.
- **If the errors are specific to the location being specified for backup**—Check your access permissions for the directory specified.
- **If the errors are specific to the user ID (in the case of tarball installations)**—Check your permissions for the installation directory and the backup directory.
- **If the errors occur during the backup phase**—The upgrade script can be restarted. The most likely error in this phase is related to space limitations. After resolving any problems, you can restart the upgrade program where it left off.
- **If errors occur during the reconfiguration phase**—Problems are usually caused by a system crash or other interruption. After resolving any problems, you can restart the upgrade program where it left off.

Uninstalling the Sun ONE Application Server Software

This chapter contains instructions for uninstalling the Sun™ Open Net Environment (Sun ONE) Application Server 7 software from your system.

The following topics are addressed here:

- [What You're Uninstalling](#)
- [Uninstalling the Sun ONE Application Server Software](#)

What You're Uninstalling

All components in the current Sun ONE Application Server installation directory, except for the Java™ 2 Software Development Kit (J2SE), are automatically selected for uninstallation. You cannot choose to uninstall individual components.

NOTE If you need to remove the Sun ONE Application Server from your system, it is important to use the uninstall routine described here. If you attempt another method, problems will arise when you try to reinstall the same version, or when you install a new version.

Uninstalling the Sun ONE Application Server Software

The uninstallation program detects any running Sun ONE Application Server processes and stops them before continuing to uninstall.

NOTE If your J2SE is installed in a directory other than `/usr/j2se`, you must use the following command:

```
./uninstall -javahome valid_j2se_directory
```

where *valid_j2se_directory* is the path to your J2SE 1.4.1_04 installation.

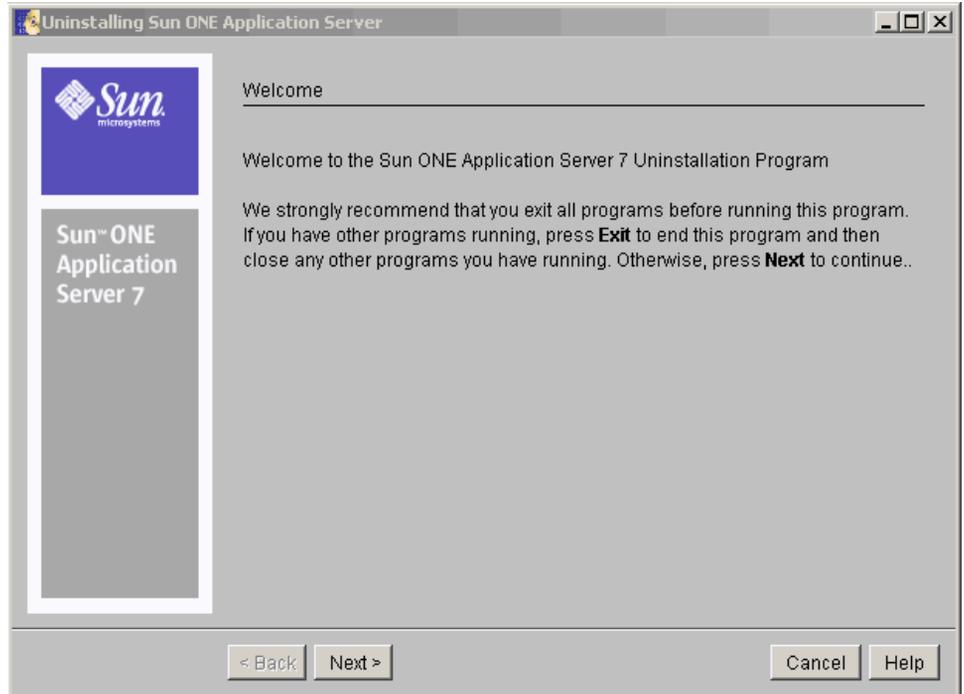
To uninstall the Sun ONE Application Server software, perform the following steps:

1. Navigate to your machine's Sun ONE Application Server 7 installation directory.
2. Invoke the uninstallation program as follows:
 - o On UNIX, type one of the following commands at the command prompt:
 - To use the graphical interface:

```
./uninstall
```
 - To use the command-line interface:

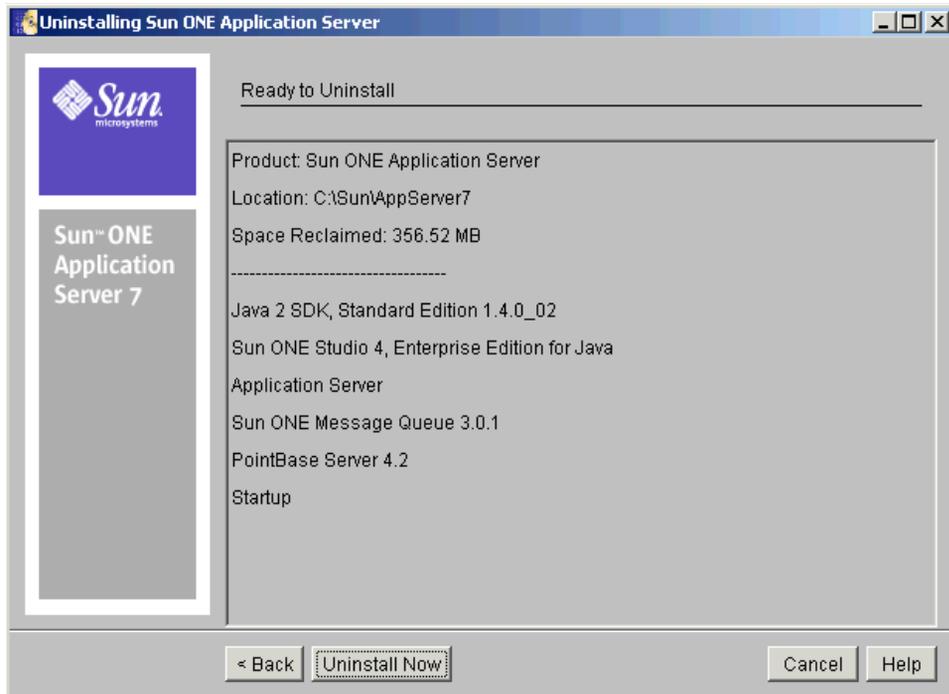
```
./uninstall -console
```
 - o On Microsoft Windows:
 - I. Navigate to the Control Panel
 - II. Choose Add/Remove Programs.
 - III. Select Sun ONE Application Server from the list of installed programs.
 - IV. Click Remove.

The Welcome page of the uninstallation program is displayed as follows.



3. Read the Welcome page and click Next (or press Enter at the command line) to continue.

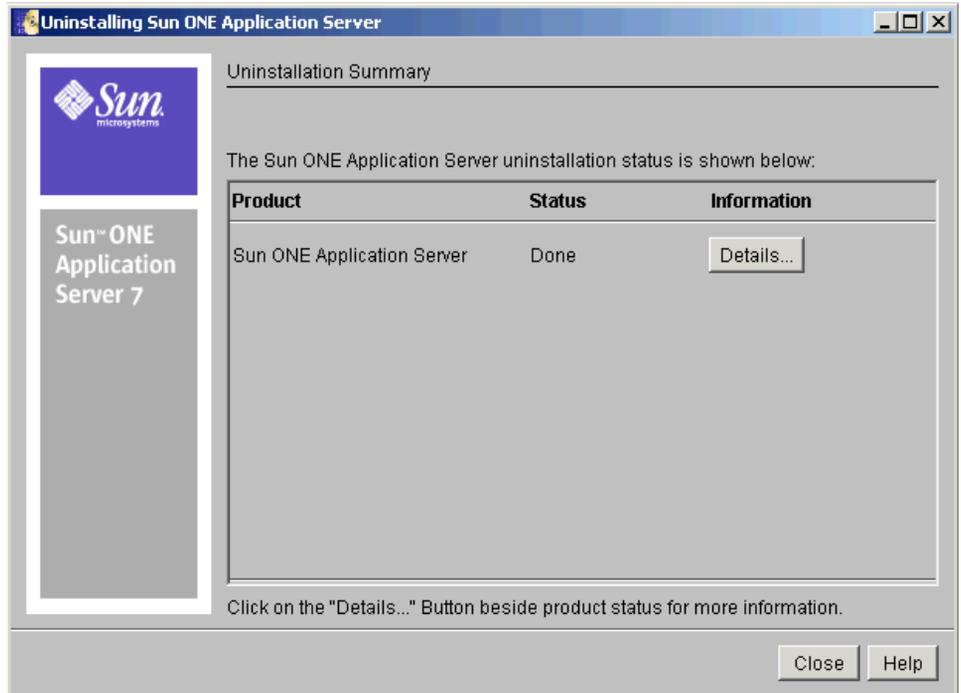
The following Ready to Uninstall page is displayed showing a list of Sun ONE Application Server components to uninstall.



4. Click **Uninstall Now** (or press Enter on the command line) to start the uninstallation process.

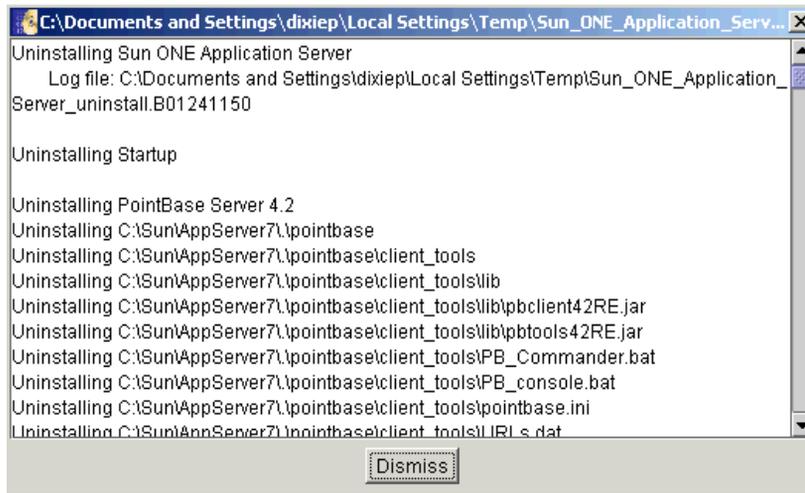
The Uninstallation progress indicator bar is displayed.

When uninstallation finishes, the following Uninstall Summary screen is displayed.



5. Review the details by clicking Details.

A details listing similar to the following displays the top portion of the log file. Complete information on the uninstallation can be found in the log file specified at the end of the details listing.



6. Click Close (or press Enter at the command line) to quit the uninstallation program.
7. Verify that uninstallation succeeded by checking to see that the Sun ONE Application Server components have been removed from your system.

Troubleshooting

This chapter describes how to solve common problems that might occur during installation of the Sun™ Open Net Environment (Sun ONE) Application Server 7 software.

The following topics are addressed here:

- [About Logs](#)
- [Forgotten User Name or Password](#)
- [Forgotten Admin Server Port Number](#)
- [Connection Refused for Administration Interface](#)
- [Server Won't Start: CGI Error Occurs](#)
- [Uninstallation Failure Cleanup](#)
- [For Microsoft Windows—SNMP Subagent Install Fails](#)
- [For Microsoft Windows—Command Window with Startup Message Does Not Appear](#)

About Logs

The following Sun ONE Application Server logs can be useful for troubleshooting problems you may have with installation:

- **Sun ONE Application Server log file**—You will find the content of this file useful for troubleshooting server configuration and deployment problems.
- **HTTP server access logs**—You will find the content of this file useful for troubleshooting HTTP server problems and for tracing the activity of HTTP requests entering the application server instances.

Forgotten User Name or Password

If you do not remember the administrative user name that was supplied during installation, try these solutions in this order:

1. Enter the user name `admin`. This is the default user name specified in the server configuration dialog during installation.
2. If this doesn't work, look in the following file:

`domain_config_dir/domain1/admin-server/config/admpw`

This file contains the administrator's user name followed by the encrypted form of the administrative user's password. Seeing the user name may jog your memory.

3. If this doesn't work, delete the administrative domain and recreate it with a new password.
4. As a last resort, uninstall and reinstall the Sun ONE Application Server.

Forgotten Admin Server Port Number

If you do not remember the HTTP server port number of the Admin Server, you can inspect the Admin Server's configuration file to determine the HTTP server port number:

1. Navigate to `domain_config_dir/domain1/admin-server/config/` and open the `server.xml` file in a text editor.
2. Look for the following element:

```
http-listener id="http-listener-1" address="0.0.0.0"  
port="4848"...
```

In this case, port 4848 is the HTTP port number in use.

Connection Refused for Administration Interface

If the connection was refused when attempting to invoke the graphical Administration interface, it is likely that the Admin Server is not running. The Admin Server log file may be helpful in determining the reason the Admin Server is not running.

To start the Admin Server, use the command-line instructions in [“Starting and Stopping the Server” on page 77](#).

Server Won't Start: CGI Error Occurs

If the Sun ONE Application Server won't start, you may receive the following error:

```
[05/Aug/2002:01:12:12] SEVERE (21770): cgi_init reports:
HTTP4047: could not initialize CGI subsystem

(Cgistub path /export/home/sun/appserver7/appserv/lib/Cgistub),
err fork() failure [Not enough space]
```

The system may require additional resources. Possible solutions are described in the following sections:

- [Set Limits on File Descriptions](#)
- [Change Kernel Parameters](#)

Set Limits on File Descriptions

You can use the `ulimit` command to determine the number of available file descriptors or set limits on the system's available file descriptors. The `ulimit` command displays the limits for the current shell and its descendants.

For `sh` shell, the `ulimit -a` command lists all the current resource limits. The `ulimit -n` command lists the maximum file descriptors plus 1.

Change Kernel Parameters

On Solaris, increase the system resources by modifying the `/etc/system` file to include the following entries:

```
set rlim_fd_max=4086
set rlim_fd_cur=1024
```

The system will require a reboot for the new kernel parameters to take effect.

After you have set the shell resources, the Sun ONE Application Server should start.

Uninstallation Failure Cleanup

If an uninstallation fails, you may need to clean up some leftover files or processes before attempting a new installation.

On UNIX

If an uninstallation fails, you may need to clean up some leftover files or processes before attempting a new installation.

1. Log in as root.
2. Navigate to your installation directory and check the content of the `/var/sadm/install/productregistry` file for installed packages, that is, files having the SUNW string. For example:

```
cat /var/sadm/install/productregistry | grep SUNW
```

NOTE On Linux, the product registry file is `/var/tmp/productregistry`, if the file exists.

3. Run `pkgrm` for the SUNW packages that were found in the product registry file. For example:

```
pkgrm SUNWasaco
```

4. Remove the following files, if they are present:

```
/tmp/setupSDKNative
```

```
/tmp/SolarisNativeToolkit_3.0_1
```

5. After the packages have been removed, manually remove the Sun ONE Application Server-specific entries from the product registry file itself.

```
rm /var/sadm/install/productregistry
```

6. At the command line, kill all `appservd` processes that may be running by typing the following:

```
ps -ef | grep appservd
```

7. Remove all remaining files under the Sun ONE Application Server installation directories.

8. If present, remove the following log file:

```
/var/sadm/install/logs/Sun_ONE_Application_Server_install.log
```

This is necessary because every iteration of installation appends the log information to this file if it exists.

On Microsoft Windows

1. From the Microsoft Windows Task Manager, stop the WindowsNativeToolkit processes, and remove the corresponding files.
2. Use the `wincleanup` utility to remove `appserv70-admin`, `server1`, and any other related services.

NOTE If the `wincleanup` utility is not on your Microsoft Windows machine, you will need to download it. See the Sun ONE KnowledgeBase for more information:

<http://sunsolve.sun.com/pub-cgi/show.pl?target=home>

Run `wincleanup` using the following syntax:

```
wincleanup service_name
```

where *service_name* is the name of your instance server as it is displayed in brackets in the Microsoft Windows Control Panel, on the Services screen. For example, the Services screen might display the following under Name:

Sun ONE Application Server 7 (server1)

In this case, the service name is `server1`.

For the Admin Server, use `admin-server` as a service name.

If no service name is provided, all services associated with the Sun ONE Application Server product will be deleted.

3. Open the Microsoft Windows registry editor by clicking the Microsoft Windows Start button, choosing Run, and typing `regedit` in the text box.
4. Remove the following registry folder and its content:


```
HKEY_LOCAL_MACHINE\SOFTWARE\Sun Microsystems\Application Server
```
5. Exit the registry editor.

6. From Microsoft Windows Explorer, remove the product registry file (*system_drive*\WinNT\system32\productregistry), or only remove the *appserver* entries contained in it.
7. From Microsoft Windows Explorer, delete the product files from the Sun ONE Application Server installation directory.
8. Reboot the system.

For Microsoft Windows—SNMP Subagent Install Fails

You must install the Microsoft Windows SNMP service before you install the Sun ONE Application Server software. If you receive an error message indicating that installation of the SNMP subagent failed, the Microsoft Windows SNMP service does not exist on your machine and the registration of the associated *.dll* file failed.

1. Uninstall the Sun ONE Application Server software.
2. Install the Microsoft Windows SNMP service.
3. Reinstall the Sun ONE Application Server software.

Unless otherwise indicated in the installation log, the rest of the product installation is unaffected by failed installation of the SNMP subagent.

For Microsoft Windows—Command Window with Startup Message Does Not Appear

Because some Windows 2000 environments do not properly include the Microsoft Windows *net* command in the environment, ensure that your system's environment has access to this command. Refer to [“Setting the net Command” on page 76](#) for guidelines on resolving this issue.

Licensing Information

The Sun™ Open Net Environment (Sun ONE) Application Server 7 uses a number of different licenses depending on the product distribution you are installing.

The following topics are addressed here:

- [About Licensing](#)
- [Types of Licenses](#)
- [Displaying License Information](#)
- [Transitioning a License](#)

About Licensing

When you download the Sun ONE Application Server software from the product web site or purchase the product CD, a license file is included with the product. Your rights to the product are governed by the license that was accepted at installation, or when you transition your license to another type of license.

After installing the Sun ONE Application Server product, you can later transition your license to another version. For example, you can transition a Platform Edition license to a development Standard Edition license.

You can manage your license as described in [“Displaying License Information” on page 108](#) and [“Transitioning a License” on page 109](#).

Types of Licenses

The licenses available for the Sun ONE Application Server are described in the following sections:

- [Evaluation License](#)
- [Development License](#)
- [Platform Edition License](#)
- [Standard Edition License](#)
- [License Summary](#)

Evaluation License

This license expires in 60 days.

The evaluation license is initialized at installation time. The expiration date is calculated based on the current date. When you restart the server, a warning message is issued every day for 14 days before the license expires. The server cannot be restarted after the expiration date of the license.

On Microsoft Windows, you can upgrade an evaluation license to Platform Edition, development, or Standard Edition licenses.

NOTE The Solaris evaluation license cannot be upgraded to any other type of license.

Development License

This license does not expire.

This development license allows you to perform the same functions as the Standard Edition license, with one exception: you cannot deploy an application to a production server. You must upgrade your license to Standard Edition or Platform Edition before deploying your applications for production.

Platform Edition License

This license does not expire.

The Platform Edition of Sun ONE Application Server imposes the following limitations:

- Only local requests to the Admin Server are accepted.
- Only one server instance per Admin Server is allowed.
- You cannot send requests from a web server plugin that also sends requests to another application server.
- You cannot send alerts to a remote system using SNMP.

A warning message is displayed when you attempt to perform either a remote request to the Admin Server or to create additional server instances. You must upgrade to the development license or Standard Edition license to perform these tasks.

Standard Edition License

This license does not expire.

The Standard Edition license is installed with the full-featured version of the Sun ONE Application Server software and imposes no limitations on the functionality of the product.

License Summary

The following table summarizes the licenses offered for Sun ONE Application Server product.

Table A-1 Sun ONE Application Server Licenses

Type	Time restriction	Multiple instances allowed?	Remote administration allowed?	Upgradable?
Evaluation on Microsoft Windows, Solaris, Linux (package-based)	60 days since the date of install	Yes	Yes	Yes on Microsoft Windows and Linux, to Platform, development or Standard Edition license No on Solaris
Evaluation on Solaris (not packaged-based)	60 days since the date of install	No	No	No
Development	Unlimited	Yes	Yes	Yes, to Standard Edition license or to operational Platform Edition license.
Platform Edition	Unlimited	No. Only one instance per Admin Server.	No. Only local user can access Admin GUI and CLI.	Yes, to development or Standard Edition license.
Standard Edition	Unlimited	Yes	Yes	N/A

Displaying License Information

Use the `display-license` command to get information on your license.

Syntax

```
asadmin display-license [--user admin_user] [--password
admin_password] [--passwordfile password_file][--host localhost]
[--port admin_port] [--local=true/false]
```

This command can be run locally or remotely, depending on the value of the `local` option. For example, the following command is run from the local machine, taking the defaults for the host and the port number:

```
asadmin display-license --local
```

The following information is returned to you:

- Type of license currently installed (for example, evaluation)

- Expiration date, if it has one
- Number of instances per Admin Sever your license allows
- Whether remote administration is allowed or not.

For additional information on using the `asadmin` command, see the *Sun ONE Application Server Administrator's Guide*.

Transitioning a License

When you installed the Sun ONE Application Server, you accepted a license which was automatically installed. After installation, you can transition your license to another type of license.

To transition your license, you must first download the new license key from this location:

<http://www.sun.com/as7upgrade>

The `asadmin` and `pkgadd` commands are used for transitioning the license on your Sun ONE Application Server. Which command you use depends on what type of installation you have.

The following license situations are discussed here:

- [For Package-Based UNIX Installations](#)
- [For Non-Packaged-Based UNIX Installations](#)
- [For Microsoft Windows Installations](#)

For Package-Based UNIX Installations

Package-based UNIX installations can be either unbundled or bundled with the operating system. The `pkgadd` command is used for installing licenses in these installations.

For Unbundled Solaris Package-Based Installations

1. Download the new license key from this location:

<http://www.sun.com/as7upgrade>

2. Stop any running Sun ONE Application Server software.

3. Install the license using the following syntax:

```
pkgadd -d full_path SUNWaslco
```

For example:

```
pkgadd -d /install_dir/pkg SUNWaslco
```

4. At the prompt, accept the terms of the license.
5. Enter the new license key.
6. Restart the Sun ONE Application Server software.

For Solaris 9 Bundled Installations

1. Download the new license key from this location:

<http://www.sun.com/as7upgrade>

2. Stop any running Sun ONE Application Server software.
3. Use the following syntax for license installation:

```
pkgadd -d full_path SUNWaslc
```

4. At the prompt, accept the terms of the license.
5. Enter the new license key.
6. Restart the Sun ONE Application Server software.

For Non-Packaged-Based UNIX Installations

The `asadmin` command is used to install a license for a non-package-based UNIX installation.

1. Download the new license key from this location:

<http://www.sun.com/as7upgrade>

2. Stop any running Sun ONE Application Server software.
3. Run the following command:

```
asadmin install-license
```

4. At the prompt, accept the terms of the license.

5. Enter the new license key.
6. Restart the Sun ONE Application Server software.

For Microsoft Windows Installations

The `asadmin` command is used to install a license for a Microsoft Windows installation.

1. Download the new license key from this location:
<http://www.sun.com/as7upgrade>
2. Stop any running Sun ONE Application Server software.
3. Run the following command:

```
asadmin install-license
```
4. At the prompt, accept the terms of the license.
5. Enter the new license key.
6. Restart the Sun ONE Application Server software.

SYMBOLS

/etc/opt/SUNWappserver7/config [25](#)
/opt/SUNWappserver7 [25](#)
/var/opt/SUNWappserver7/domains [25](#)
/var/sadm/install/productregistry [102](#)
/var/tmp/productregistry [102](#)

A

access.log [99](#)
Admin Console. See Administration interface.
Admin Server, not started [101](#)
administration client [18, 48](#)
Administration interface [17, 44, 62](#)
 connection refused [100](#)
 starting/stopping [80](#)
administration server port [28, 39, 58](#)
administration tools overview [17](#)
administrative domain, creating [68](#)
administrative privileges [30](#)
Apache Web Server [29, 82](#)
applications, sample [73](#)
asadmin commands [74, 79, 108](#)
asant [73](#)

B

backup for upgrading [88](#)
bin directory [44, 62, 65, 73, 74](#)

C

CGI errors [101](#)
cleanup after uninstall failure [102](#)
cleanup after uninstallation failure [102](#)
command-line interface method [20](#)
command-line interface, using [77](#)
components overview [16](#)
configuration file for silent mode [63](#)
console option [20](#)
create-domain [69](#)
create-instance [70](#)
customer support [13](#)

D

default port numbers [40, 58](#)
default_config_dir [12, 13](#)
development installation [22, 47–65](#)
development license [106](#)
df command [26, 28](#)
directories [12](#)

- bin 44, 62, 65, 73
- installation 12
- instance root 12

DISPLAY environment variable 35, 50

display-license command 108

distribution summary 23

documentation 30

- directory conventions 12

- font conventions 12

- general conventions 11

- path formats 11

- Road Map 9

- UNIX-specific descriptions 12

- URL formats 11

- using the 9

domain_config_dir 69

domains

- creating 68

- starting and stopping 78

downloading from web 32, 49

E

editions of Sun ONE Application Server 17, 107

environment variables

- DISPLAY 35, 50

- MANPATH 77

- PATH 76

- troubleshooting 76

evaluation installation 21, 25, 31–45

evaluation license 106

F

font conventions 12

G

graphical interface method 20

gunzip 33, 49

H

hardened operating system requirement 29

HTTP server

- listener 45, 63

- port 28, 40, 45, 58, 63

I

install_config_dir 12, 13

install_dir 12, 13

installation 22

- components 16

- development 22, 47–65

- directory structure 24

- distribution summary 23

- evaluation 21, 25, 31–45

- J2SE 54

- parameter-driven 63

- post-install tasks 73

- remote 35

- silent mode 63

- Sun ONE Studio plug-in 83

installation root directories 12

instances

- creating 70

- root directories 12

- starting and stopping 79

interrupting and upgrade 87, 91

J

J2SE 54

- third-party 19, 56

Java Messaging Service (JMS) overview 18

JDK 86

JMS service startup failure 30

jvm-options 55

L

licensing 22, 105–111

types of 107

Linux 12, 26, 55, 86, 88, 90, 102, 108

list-domains 69

logs

installation 99

upgrading 89

M

man pages 30, 77

MANPATH environment variable 77

Message Queue broker issue 29

methods of installation 20

Microsoft Windows program group 81

Microsoft Windows services 81

N

net command 76

Netscape Portable Runtime (NSPR) 87, 90

Netscape Security Services (NSS) 90

NSPR 90

NSS/NSPR packages 87, 90

P

package-based model 25

package-list.txt 87

packaging 24

password, forgotten 100

patches 25, 27

PATH environment variable 74, 76

setting on UNIX 74

setting on Windows 75

path formats 11

Perl 86

Perl script for upgrading 87

perl setup 90

Platform Edition license 107

platforms, supported 26

plug-ins

installing 83

Sun ONE Studio 83

web server 82

PointBase server 18

port number, forgotten 100

port requirements 28

ports 28, 29, 30, 50, 58

administration server 28, 39, 58, 100

default 40

HTTP server 28, 40, 45, 58, 63

inaccessible 100

post-installation tasks 73–84

privileges 21

administrative 30

for upgrading 86

root 28

productregistry 102

R

Red Hat Linux 26

remote installation 35

requirements

for upgrading 86

ports 28

space 26, 28

system 26

technical 27

restarting an upgrade 88, 89

reverse proxy plug-in 29, 82

root directories

instance 12

root privileges 28
rpm 86

S

sample applications 19, 73, 84
scenarios for Sun ONE Studio plug-in installation 83
server, starting and stopping 65, 77
server.log 99
silent installation 21, 63–65
SNMP 30
SNMP subagent failure 104
Solaris 9 7, 13, 29, 68, 78, 110
Solaris 9 bundled installations
 configuring 67
 requirements 24
space requirements 26, 28
Standard Edition license 107
start-appserv 78
start-domain 78
starting a domain 78
starting an instance 79
starting the server 65, 77
starting/stopping the Administration interface 80
start-instance 79
stop-appserv 78
stop-domain 78
stop-instance 79
stopping a domain 78
stopping an instance 79
stopping the server 65, 77
Sun ONE Message Queue 28
 on Solaris 29
 overview 18
Sun ONE Studio 58
 overview 19
 plug-in 29, 83
Sun ONE Web Server 29
SUNWlibC 29
superuser privileges 21
supported platforms 26

system requirements 26
system resources, increasing 101

T

tar 33, 49
technical requirements 27
terminating an upgrade 87, 91
third-party J2SE 19, 56
transition 60
transitioning a license 43, 60, 109
troubleshooting 99–104
 environment settings 76
 Sun ONE Message Queue broker 29
 upgrading 91

U

ulimit 101
uname command 26
uninstallation failure cleanup 102
uninstalling 93–98
UNIX-specific descriptions 12
upgrade.log 89
upgrade_state 89
upgrading 85–91
 components 86
 interruption 87, 91
 log files 89
 overview 87
 requirements and restrictions 86
 restarting 88
 troubleshooting 91
upgrading a license 109
URL formats 11
user name, forgotten 100

W

web server plug-in [29](#), [82](#)

web services client [83](#)

wincleanup [103](#)

X

x86 [22](#), [26](#), [29](#), [31](#), [32](#), [49](#), [82](#), [83](#), [86](#), [90](#)

-Xcongc [55](#)

