

Product Introduction

Sun™ ONE Application Server

Version 7, Enterprise Edition

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Santa Clara, CA 95054 U.S.A.

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Introduction to Sun ONE Application Server 7, Enterprise Edition

The Sun™ Open Net Environment (ONE) Application Server 7, Enterprise Edition provides a high-performance Java™ 2 Platform, Enterprise Edition (J2EE™) platform suitable for broad deployment of application services and web services. It offers a new modular architecture based on industry standard components, including proven implementations of the HTTP server infrastructure, Java Message Service (JMS), and rigorous support of the latest J2EE and web services specifications with J2EE version 1.3, Java 2 Platform, Standard Edition version 1.4, and the Java APIs for XML (JAX) from the Java Web Services Developer Pack software.

Product Line Overview

Sun ONE Application Server is a breakthrough product that raises the bar in application server technologies. It incorporates the latest Java technologies in an easy-to-use, developer-friendly package. The Sun ONE Application Server product leverages over six years of Sun expertise in delivering highly scalable application server technology, enabling developers to rapidly build robust applications that are based on JavaServer Pages™ (JSP™) technology, Java Servlet, and Enterprise JavaBeans™ (EJB™) technology. This technology supports a broad range of business requirements from small departmental applications to enterprise-scale, mission-critical services.

For more product information, see the Sun ONE Application Server page on the Sun Microsystems web site, <http://www.sun.com/appserver/>.

NOTE	Review the Supplemental Terms included in the product (accepted during installation or download) to understand your rights for each edition of the application server.
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Three editions of the application server are offered to suit a variety of needs for both production and development environments:

- [Platform Edition](#)
- [Standard Edition](#)
- [Enterprise Edition](#)

Platform Edition

Platform Edition forms the core of the Sun ONE Application Server 7 product line. This product offers a high-performance, J2EE 1.3 specification-compatible runtime environment that is ideally suited for basic operational deployments, as well as for embedding in third-party applications.

Platform Edition deployments are limited to single application server instances (that is, single virtual machines for the Java platform (Java virtual machine or JVM™)). Multi-tier deployment topologies are supported by the Platform Edition, but the web server tier proxy does not perform load balancing. In Platform Edition, administrative utilities are limited to local clients only and the included HTTP server can only be used for serving J2EE applications.

The Platform Edition of Sun ONE Application Server 7 is bundled with Solaris 9.

Standard Edition

Standard Edition builds on the functionality of the Platform Edition, and layers enhanced remote-management capabilities which allow the management of multiple application server instances from a central administration station. This edition also includes the ability to distribute web application traffic through a web server tier proxy. Standard Edition supports configuration of multiple application server instances per administrative domain. Additionally, you can use the Simple Network Monitoring Protocol (SNMP) to monitor your SUN ONE Application

Server, Standard Edition. Standard Edition allows you to use features such as common gateway interface (CGI) programs, SHTML, access control lists (ACLs) and NSAPI. With Standard Edition you have the right to use Sun ONE Directory Server for user authentication and limited application configuration storage.

Enterprise Edition

Enterprise Edition enhances the core application server platform with high availability, load balancing, and cluster management capabilities suited for the most demanding J2EE-based application deployments. The management capabilities of the Standard Edition are extended in Enterprise Edition to account for multiple-instance deployments.

Clustering support includes groups of cloned application server instances to which client requests can be load balanced. Both the web tier load balancer plug-in and third-party hardware load balancers are supported by this edition. HTTP session failover for various application server components is included in the Enterprise Edition. The patented “Always-On” highly available database technology forms the basis for the high availability persistence store in the Enterprise Edition.

Key Features

Sun ONE Application Server 7, Enterprise Edition includes the following components

- [Application Server](#)
- [Java 2 Software Development Kit, Standard Edition](#)
- [Sun ONE Message Queue](#)
- [Sample Applications](#)
- [Always-On Technology Components](#)

NOTE	These sections describe the features in Enterprise Edition only. For lists of features for Standard Edition and Platform Edition, see the <i>Sun ONE Application Server Product Introduction</i> for Standard Edition.
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Application Server

The Application Server component contains the core components of the Application Server software.

- Supports the Java Web Services APIs:
 - Java API for XML Processing (JAXP)
 - Java API for XML Messaging (JAXM)
 - Java API for XML-based Remote Procedure Calls (JAX-RPC)
 - Java API for XML Registries (JAXR)
 - SOAP with Attachments API for Java (SAAJ)
- Core runtime including runtime control, process and thread management
- HTTP server based on Sun ONE Web Server
- Embedded highly scalable and high-performance Container Managed Persistence runtime
- Java Transaction Service-based, all-Java transaction manager
- Object Request Broker (ORB)
- Simple Network Management Protocol (SNMP) agent
- J2EE verifier utilities
- Apache Ant tasks
- Administrative capabilities
 - Web-based administration interface with local and remote administration. Java Management Extensions (JMX) technology used for internal underlying administration infrastructure.
 - Full-featured, command-line interface local and remote operation. Command line with interactive and scripting mode.
- Multiple administrative domains capabilities for creating wholly separate application server configurations. Provides multiple instances in each domain.
- Java Authentication and Authorization Service (JAAS) support. Multiple authentication realms including file, Solaris realms, and LDAP. Right to use Sun ONE Directory Server for authentication use.
- Clustering of Sun ONE Application Server instances

- HTTP session failover
- Failover of EJB References within HTTP sessions
- Load balancing of incoming HTTP requests
- HTTP session persistence using the Sun Highly-Available Database Server

Java 2 Software Development Kit, Standard Edition

Sun ONE Application Server is certified with the J2SE platform and leverages the performance and feature improvements that are part of the J2SE 1.4 platform. For complete version information, see the *Sun ONE Application Server Platform Summary*.

For more product information, see the Sun ONE Application Server page on the Sun Microsystems web site.

Sun ONE Message Queue

Also available as a separate product, the Sun ONE Message Queue product is an integral part of the of the Sun ONE Application Server. This all-Java component delivers a robust JMS provider for both JMS clients and message-driven beans. It is extremely scalable, with high-performance.

The Sun ONE Application Server includes the Sun ONE Message Queue, Platform Edition. To get enhanced JMS features (such as support for multi-broker message services, HTTP/HTTPS connections, secure connection services, scalable connection capability, and multiple queue delivery policies), you can purchase the Sun ONE Message Queue, Enterprise Edition separately. Once you purchase a license key for the Sun ONE Message Queue, Enterprise Edition, you can use the enhanced functionality with the Sun ONE Application Server. For more information on Sun ONE Message Queue, see:

http://www.sun.com/software/message_queue

Sample Applications

Sun ONE Application Server Version 7, Enterprise Edition includes sample applications that are available when you install the 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.

Always-On Technology Components

The Sun ONE Application Server 7, Enterprise Edition includes the Always-On Technology, which supports multi-tiered, multi-machine, clustered application server deployments. In Enterprise Edition, the web tier supports load balancing and application traffic partitioning using a web server plug-in.

Various topologies for the Always On Technology are discussed in the *Sun ONE Application Server Operational Deployment Guide*. For instructions on configuring and administering high availability for the Application Server, refer to the *Sun ONE Application Server Administrator's Guide*.

The following installation components provide the basis for the Always-On Technology:

High-Availability Database (HADB). The Application Server provides a transactional, highly-available and highly-scalable HTTP session state persistence infrastructure. Application Server uses the HADB to store HTTP session information.

Load Balancer Plug-In. The load balancer is responsible for taking incoming HTTP requests and distributing them across the instances in the cluster. The load-balancer also makes it possible for HTTP sessions to fail over to new instances when an instance becomes unavailable, and for a user to quiesce an instance prior to taking it offline. The Application Server high-availability load balancer plug-in is an enhanced version of the HTTP reverse proxy plug-in. In addition, third-party load balancers can be used.