

Sun Java™ System Application Server Standard and Enterprise Editions 8.1 2005Q1

Extreme High Availability for Java™ 2 Platform, Enterprise Edition (J2EE™) Applications



Highlights

The Sun Java™ System Application Server is available in three editions:

- Platform Edition
- Standard Edition
- Enterprise Edition

The *Standard Edition* extends the capabilities of the Platform Edition — the industry's first and most popular production Java 2 Platform, Enterprise Edition (J2EE™) 1.4 application server — to provide secure, remote, multi-instance, multimachine management.

The *Enterprise Edition* further extends the capabilities of the Standard Edition to deliver the most economical platform for deploying mission-critical applications that require extremely high availability and massive scalability.



As a key component of the Sun Java™ Enterprise System, the Java System Application Server provides the foundation for delivering enterprise-class application services and Web services. It offers a unique new modular architecture based on some of the industry's most proven, high-performance, and standards-compliant components — including proven implementations of the HTTP server infrastructure, Java Message Service (JMS) software, and rigorous support of the latest Java 2 Platform, Enterprise Edition (J2EE™ platform) and Web services specifications with J2EE 1.4 technology; Java 2 Platform, Standard Edition (J2SE™) 1.5 technology; and the Java Web Services Developer Pack.

The Java System Application Server is available in three editions, each designed to provide specific functionality for different usage scenarios and service levels.

- The Java System Application Server Platform Edition brings J2EE technology into volume markets, providing a high-performance, small-footprint J2EE platform suitable for broad adoption and embedding into third-party systems and applications. It is completely free of license fees for development and deployment, with support available for an additional charge.
- The Java System Application Server Standard Edition builds on the performance and ease of use of the Platform Edition, extending the capabilities into the data center. Support for secure, remote, multimachine management, massively scalable connection handling, and request-level load balancing make it a perfect fit for high-volume applications and Web services.
- The Java System Application Server Enterprise Edition adds breakthrough clustering and high-availability technology for J2EE applications. Based on the patented Always-On technology, the Enterprise Edition provides enterprises and service providers with extremely high quality of service for their mission-critical applications.

Whether purchased as part of the Java Enterprise System or separately, the Java System Application Server Standard and Enterprise Editions provide the lowest total cost of ownership for customers who want to develop, deploy, and support J2EE technology-based and service-oriented architecture (SOA) applications that require enterprise-grade performance and scalability.

Key highlights of the Standard Edition

The Java System Application Server Standard Edition 8.1 2005Q1 provides a complete J2EE 1.4 technology-compatible platform for developing and delivering server-side Java applications and Web services. The Standard Edition builds upon and extends the industry's first and most popular production J2EE 1.4 application server to provide secure, remote, multi-instance, multimachine management for high-volume applications and Web services.

Core services

- Provides load balancing of HTTP, RMI/IIOP, and JMS clients as well as seamless generation of load balancing configurations of HTTP Web requests
- Enables automatic retries of failed requests to other instances based on URL pattern match

- Supports administration of servers — both locally and remotely
- Provides a powerful and intuitive browser-based management console to support enterprise-wide deployments and administer domains comprising multiple clusters, instances, and machines
- Offers full administration from a command line interface, scriptable for flexible management
- Delivers secure remote Java Management Extensions (JMX™) specification-based monitoring and management of J2EE server and application components across clusters
- Provides an SOA delivery platform, the first to support the WS-I Basic Profile
- Provides a complete Web services infrastructure to develop and deploy Web services in production, incorporating the latest Java Web Services Developer Pack common components: Java Architecture for XML Binding (JAXB), Java API for XML Processing (JAXP), Java API for XML Registries (JAXR), Java API for XML-based RPC (JAX-RPC), Simple Object Access Protocol (SOAP), SOAP With Attachments API for Java (SAAJ), and Web Services Description Language (WSDL)
- Supports Web Services Security (WSS): Digital Signature and XML Encryption (to sign and encrypt of SOAP payloads based on OASIS and W3C standards)
- Secure right out of the box — administration infrastructure uses Secure Sockets Layer (SSL) security; sensitive data in configuration files has been encrypted in a secure keystore
- Supports Java Transaction Service with two-phase commit for managing database services from the leading RDBMS vendors
- Includes a high-performance JMS provider
- Includes a high-performance HTTP server with SSL security, delivering high performance through an advanced multiprocessing, multithreaded architecture; efficient use of kernel threads; and sophisticated memory management
- Enhances performance of dynamic content through Server-side HTML (SHTML) and chunked encoding
- Supports various security standards: SSLv2, SSLv3, Transport Layer Security (TLS) 1.0, X.509 certificates, PKCS #11, FIPS-140, and 168-bit step-up certificates
- Provides virtual server support for hosting multiple Web sites from a single instance
- Interoperable out of the box with all Java Enterprise System components, for example, the Java System Web Server, Java System Directory Server (for identity and access management), and J2EE technology-based Java System Portal Server
- Provides certified compliance with the J2EE 1.4 Compatibility Test Suite
 - Built on the same platform that defines the J2EE standard — J2EE 1.4 SDK Reference Implementation source code
 - Assures the most rigorous J2EE standard compliance — without risks of proprietary lock-in
- Supports a broad choice of operating systems and databases
- Includes bundled, high-performance JDBC™ drivers for database connectivity for development and production
- Supports the J2EE Connector Architecture for access to enterprise information systems; includes third-party J2EE Connector Architecture-based products with a free trial period

Key highlights of the Enterprise Edition

The Java System Application Server Enterprise Edition 8.1 2005Q1 provides a high-performance, scalable, and robust J2EE platform for delivering enterprise-class application services and Web services. First in the market with a built-in and manageable session persistent data store, it delivers the most economical platform for deploying mission-critical applications that require extremely high availability (HA) and massive scalability. Its patented Always-On technology provides fault tolerance and automatic self-repair with five 9s (99.999-percent) availability of session state for continuous uninterrupted operation — even during rolling online software and hardware upgrades.

Core services

- Availability allows for failover protection of Application Server instances in a cluster. If one Application Server instance goes down, any Application Server instance can take over the sessions that were assigned to the unavailable server. Session information is stored quickly and is completely rederived from the High-Availability Database (HADB) persistence store. The HADB supports the persistence of HTTP sessions, stateful session beans, and single sign-on (SSO) credentials.
- Delivers the first multinode failure resilient, performant, and scalable solution with five 9s high availability. Provides fast parallel persistence of session objects to the HADB's in-memory persistence store as well as automatic continuous replication of data across two nodes (minimum) for additional redundancy. Wait time in processing J2EE artifacts that require high availability is minimized because distributed object cache in memory is persisted to the database asynchronously.
- Provides the first manageable and distributable HA solution, where the HADB persistence engine can be off-loaded to a separate tier of lower cost machines
- Enables reduced TCO, improved management, and isolation of failures by separating the HADB replication from the Application Server tier. There are no additional fees to process the HADB on a separate tier from J2EE Application Server
- Supports failover of timer beans
- JMS brokers are cluster-aware, providing message service high availability and ensuring that JMS semantics are adhered to — even in a cluster (once only delivery to a message-driven bean)

J2EE development environment

- Delivers high developer productivity through tight integration with Sun's Java Studio Enterprise and Java Studio Creator development tools
- Includes a high-performance, container-managed persistence (CMP) engine that supports object-to-relational (O/R) mapping
- Supports JavaServer™ Faces technology to simplify building user interfaces for JavaServer applications — developers can quickly build Web applications by assembling reusable UI components in a page, connecting these components to an application data source, and wiring client-generated events to server-side event handlers
- Supports ANT (Java technology-based make files)
- Supports third-party J2EE technology-based software IDEs such as Borland JBuilder
- Provides an assembly and deploy tool for packaging and configuring new and pre-existing J2EE applications

- Offers a migration tool (free download) for easily migrating code from external and previous editions of an application server to the Java System Application Server 8.1 2005Q1
- Provides the Application Verification Kit (free download) to ensure portability by assisting in the correct use of J2EE APIs

Delivers end-to-end high performance

The Java System Application Server delivers end-to-end high performance across a broad spectrum of Web and enterprise application requirements, ranging from application logic to presentation layer to connectivity for integration with enterprise and legacy applications. The Java System Application Server provides the HTTP engine from the proven Java System Web Server, ranked among the fastest in the world. It also provides the JMS engine from the Java System Message Queue, delivering industry-leading JMS performance. The Java System Application Server performance has been proven to scale near linearly well beyond one hundred processors with HA enabled.

The Java System Application Server includes a high-performance, container-managed persistence (CMP) engine that supports object-to-relational (O/R) mapping. It supports intelligent load balancing of Java Servlet components with third-party load balancing solutions. By providing the service provider interfaces for the J2EE Connector Architecture, the Java System Application Server is easily integrateable with high-performance J2EE Connector Architecture-based products for fast synchronous access to enterprise applications and data.

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Platforms and Requirements

Operating Systems and Platforms

- Sun Solaris™ 10, 9, and 8 Operating Systems on SPARC® platforms
- Sun Solaris 10 and 9 Operating Systems on x86 platforms
- Red Hat Enterprise Linux 2.1 (Update 2) and 3 (Update 1)
- Microsoft Windows 2000 Advanced Server SP4
- Microsoft Windows Server 2003

Database servers supported

- Oracle8i (8.1.7), Oracle9i (9.2.0.3), and Oracle Database 10g
- Sybase ASE 12.5.2
- Microsoft SQL Server 2000
- IBM DB2 V8.1 SP3 and later
- PointBase Network Server 4.8
- Supports connectivity to any DBMS with a corresponding JDBC driver

Web servers supported

- Sun Java System Web Server 6.1
- Apache Web Server 1.3, 1.4, and 2.0
- Microsoft Internet Information Services (IIS) 5.0 and later

J2EE 1.4 compatible

- *Components:* J2SE 1.4.2_06 or J2SE 5.0, Application and Application Client, Enterprise JavaBeans™ (EJB™) 2.1, Java Servlet 2.4, JavaServer Pages™ (JSP™) 2.0, J2EE Connector Architecture 1.5, JMX 1.2, JMS 1.1, Java Naming and Directory Interface™ (JNDI) 1.2, and Java Transaction API (JTA) 1.0
- *Web Services:* Java Web Services Developer Pack 1.5, Java APIs for XML Registries (JAXR) 1.0, Java API for XML-based Remote Procedure Calls (JAX-RPC) 1.1, SOAP With Attachments API for Java (SAAJ) 1.2, WS-I Basic Profile 1.0
- *Other:* J2EE Deployment 1.1, J2EE Management 1.0, Java API for XML Processing (JAXP) 1.2, JavaMail™ 1.3, Java Authentication and Authorization Service (JAAS) 1.0, and Java Authorization Contract for Containers (JACC) 1.0

System requirements

- **Memory:** Varies by configuration
 - Standard Edition: 256 MB minimum
 - Enterprise Edition: 1 GB minimum
- **Disk Space:** 500 MB recommended

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