BEA WebLogic Server 8.1 for HP NonStop servers

Data sheet

Combining an industrial-strength application server with mainframe class of service

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The world's leading application server and the world's leading massively parallel computing platform deliver mission-critical business value faster than ever before.

Combining an industrial-strength application server with mainframe class of service

How do IT departments deliver enterprise applications? Too slowly? Too costly? BEA WebLogic Server™ 8.1—an industrial-strength application infrastructure for developing, integrating, securing, and managing distributed Java™ applications—delivers value in less time with reduced costs while simplifying and unifying the enterprise infrastructure. When deployed on HP Integrity NonStop NS-series and NonStop S-series servers, BEA WebLogic Server–based applications transparently inherit the NonStop system advantages—fault tolerance, virtually unlimited scalability, and a massively parallel database—that have kept stock exchanges, automatic banking systems, telecommunications providers, emergency services, and other companies running 24 x 7 for decades.

By leveraging the most battle-tested platform on the market, enterprises can deploy mission-critical e-business applications to WebLogic Server with confidence. Renowned for high-end, mission-critical deployments, NonStop servers running WebLogic Server provide mainframe class of service at the lowest total cost of ownership for Web, business logic, and database tiers.

Meeting increasing challenges in real time

Today, companies must overcome increasing challenges to meet customer and shareholder expectations in real time. These challenges are not just caused by more difficult economic times; they result from increased IT cost and complexity in delivering application value to internal and external customers.

Key features and benefits

- Leverages NonStop system advantages transparently to application code
- Simplifies and automates operations
- Allows speedy development
- Leverages existing assets by providing out-of-the-box interoperability with existing infrastructure
- Now available for HP Integrity NonStop servers, based on Intel® Itanium® processors, as well as HP NonStop servers, based on MIPS processors

BEA WebLogic Server 8.1—the world's leading, industrial-strength application server underlying the BEA WebLogic Enterprise Platform™—enables IT organizations to reduce the cost and complexity of their application infrastructure, transforming IT assets into a critical business advantage.

WebLogic Server 8.1 provides an entirely new way to develop, integrate, secure, and manage enterprise server-side Java applications by

- Speeding development—Any developer can be immediately productive building enterprise-class applications faster than ever before.
- Leveraging existing assets—Out-of-the-box interoperability with existing infrastructure unifies the enterprise and reduces cost.
- Providing an architecture for adaptable security—Design and implement real-time, real-world security policies at runtime with no application coding.
- Simplifying management—Simplify and automate operations, and gain visibility into applications and infrastructure.
- Deploying with confidence—Enterprise-grade foundation delivers highly available, scalable, and bulletproof transactions.
- Leveraging NonStop system fundamentals transparently to application code.
- Enabling massive scalability with very large (multiple terabytes and beyond) operational data stores (ODSs), supporting up to 4,080 processors with single database image.
- Providing interoperability with WebLogic® products on other platforms, and with existing NonStop software assets.

Figure 1 shows how Enterprise JavaBeans (EJB) can be created with BEA WebLogic Workshop™ and then tested and displayed to WebLogic Server. New or existing EJB, Web services, databases, or other resources can then be incorporated into the BEA WebLogic Workshop Application Framework through packaged or custom controls.

BEA WebLogic Server 8.1 capabilities

Improve developer productivity

BEA WebLogic Server 8.1 meets rigorous compliance standards to provide that developers are productive, code is portable, and applications can interoperate properly. Developers can be confident that applications are future-proofed through the latest standards, such

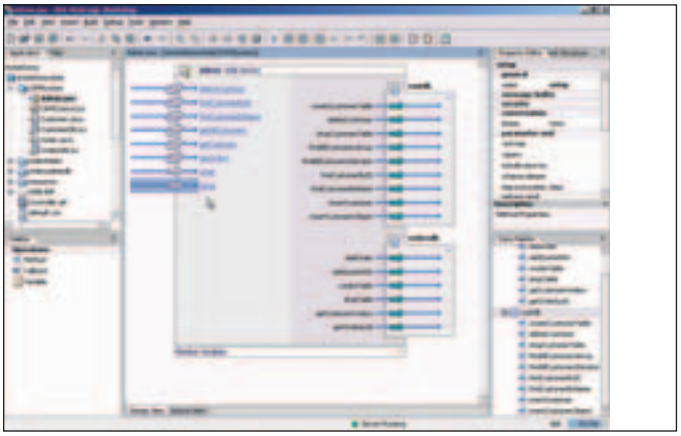

Figure 1. BEA WebLogic Server 8.1 allows the development of Enterprise JavaBeans in BEA WebLogic Workshop, which can then be tested and deployed directly to BEA WebLogic Server.

as certified Java Platform 2, Enterprise Edition (J2EE) 1.3 compliance. By building standards-based applications, enterprises protect technology investments and maintain maximum flexibility, choice, and interoperability.

WebLogic Server seamlessly integrates with WebLogic Workshop. Without having to leave the visual development environment, J2EE developers can build and unit test the lower-level, fine-grain EJB and other components that are later utilized by the business application developer as building blocks for enterprise applications. This approach provides a single platform for all developers, with an appropriate set of tools and services for their particular skills and needs.

WebLogic Server maximizes ease of use and empowers all developers, not just J2EE experts, to become productive on the BEA WebLogic Enterprise Platform. By leveraging its visual development environment and runtime framework, WebLogic Server insulates developers from J2EE infrastructure complexities. Because its simplified programming model is based on intuitive concepts such as controls, events, and properties, WebLogic Server enables any developer to use these higher-level objects while writing less code. WebLogic Server also provides development, packaging, and deployment tools to reduce error-prone and tedious tasks. These productivity tools not only simplify the coding process but also provide a unified development and deployment model across the WebLogic Enterprise Platform.

When running on HP NonStop servers, WebLogic Server utilizes the NonStop system infrastructure, including HP NonStop operating system, Mission Critical Operating Environment; NonStop Transaction Management Facility (NonStop TMF); Parallel TCP/IP; NonStop Server for Java; and NonStop SQL/MX Software, to improve fault tolerance and massive scale, while providing compatibility with other WebLogic Server environments.

Leverage existing assets

New applications are easily integrated with existing applications—to share data and processes and create new service-oriented applications across the enterprise. BEA WebLogic Server 8.1 implements the latest Web services technologies, including Simple Object Access Protocol (SOAP), Web Service Definition Language (WSDL), Universal Description, Discovery and Integration (UDDI), and XMLBeans. Tested Microsoft® .NET interoperability also provides smooth development and operations in heterogeneous architectures. WebLogic Server also includes native messaging, Java Connector Architecture, WebLogic/Tuxedo® Connector, COM+ connectivity, and other means for integrating with external resources. For a full integration solution—including business process management, enterprise application integration (EAI), adapters, and business-to-business integration—users can upgrade to BEA WebLogic Integration.™

Leveraging HP's NonStop operating system, NonStop SQL/MX, NonStop TMF, and NonStop Server for Java infrastructure to provide the highest level of scalability, reliability, availability, and security, WebLogic Server also provides a set of utilities and features that helps developers build, package, and deploy powerful enterprise-class Web services. WebLogic Workshop can be used as a front-end development and deployment environment. For more information on BEA WebLogic Workshop, visit **www.bea.com/framework.jsp?CNT=index.htm&FP=/content/products/workshop.**

WebLogic Server also offers out-of-the box interoperability with surrounding technologies. IT organizations can easily plug applications into existing system management, security, directory, Web server, and other adjacent products—increasing productivity, leveraging existing investments, and reducing costs.

With BEA WebLogic Server on HP NonStop servers, you can interoperate with existing NonStop applications, including Pathway, and HP NonStop Tuxedo and NonStop CORBA software. In addition, a plug-in for HP iTP WebServer Software is provided to facilitate parallel scalability and manageability.

When implemented on HP NonStop servers, WebLogic Server process monitoring and process management work just as they do on other platforms, using the same administration console and skills that are used on other platforms. The management task is simplified for massive deployments, because there are fewer things to manage, as is described in the section on "Advantages of WebLogic Server on NonStop servers." The administration server is itself monitored and managed by an HP fault-tolerant process, which will automatically restart the administration server in the event that it fails.

WebLogic Server on NonStop servers implements the same security model as WebLogic Server on other platforms.

Architect for adaptable security

BEA WebLogic Server simplifies security in two ways:

- Simplifying the process of building security into applications
- Allowing administrators to easily design and apply security rules at runtime without writing code

WebLogic Server offers full-feature security services—advanced authentication, authorization, auditing, and encryption features—to all applications and components. The BEA WebLogic Security Framework takes the headache out of securing the application by removing security code from business logic and allowing the container to secure the application. Through its dynamic role mapping and authorization rules engine, WebLogic Server allows creation and processing of security rules and roles in real time based on real-world conditions, thus creating strong but flexible security policies. The WebLogic Security Framework is also pluggable, allowing external security solutions to manage WebLogic resources.

Figure 2 shows WebLogic Server 8.1 and its advantages when running on NonStop servers. When deployed on HP NonStop servers, the applications also benefit from the NonStop system advantages derived from the single-system image of the NonStop operating system, NonStop SQL Database, and NonStop TMF transaction management.

Simplify management

Through WebLogic Server's deployment and administration features, enterprises can improve the use of valuable administrative resources. WebLogic Server guides administrators through the configuration and deployment process, reducing the tedium and difficulty of getting an application up and running. For the first time, administrators can configure clusters in minutes, as opposed to spending hours or days creating error-prone work with other application servers. As a result, fewer administrators can do more in less time—a benefit that drives down costs and increases the agility of an organization.

With WebLogic Server and its Web-based management console, administrators can efficiently manage and monitor their applications—start and stop servers; select and monitor the configuration of resources; detect and correct problems; monitor and tune system performance; and deploy Web applications, EJB, Web services, or other resources. WebLogic Server provides monitoring visibility across the Java Virtual Machine (JVM), application server, and deployed code. And because WebLogic Server is supported by the leading system management solutions, it can be managed within the existing corporate infrastructure, including HP OpenView Software. WebLogic Server 8.1 includes a plug-in for OpenView Software.

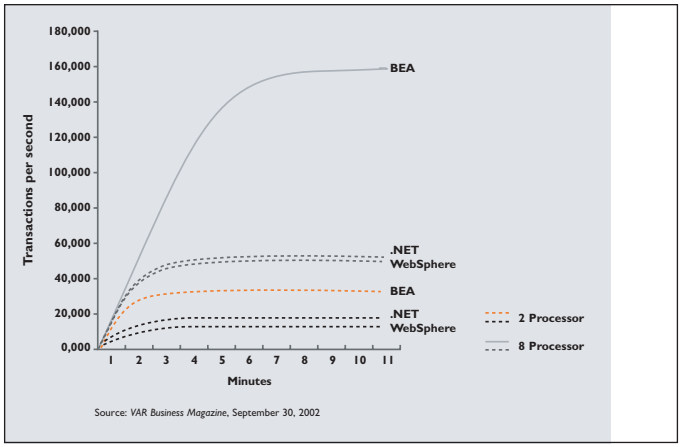

Figure 2. BEA WebLogic Server 8.1 ensures high-volume, scalable applications through an optimized architecture that includes load balancing; failover; connection pooling; and data, page, and query caching.

When installed on NonStop servers, WebLogic Server clustering is enhanced by the underlying fault-tolerant massively parallel infrastructure of NonStop servers. For example, the WebLogic Server Node Manager administers all managed servers (application processes) in a NonStop node, and is itself managed by HP NonStop process-pair technology. WebLogic Server instances communicate with each other via IP multicasting, which is implemented in HP's fault-tolerant, massively scalable Parallel TCP/IP subsystem.

Deploy with confidence

More large-scale, business-critical applications are deployed on WebLogic Server than on any other application server. WebLogic Server is the fastest and most efficient application server on the market, according to industry benchmarks. In addition, WebLogic Server's highly improved, distributed architecture allows applications to scale to thousands of concurrent users and transactions per second. Through this scalable architecture that includes load balancing, failover, caching, connection pooling, and other performance features, WebLogic Server improves the use of hardware resources, while continuing to scale an application as needed.

Enterprise clustering, distributed transaction management, guaranteed message delivery, and other enterprise features have earned WebLogic Server the reputation as the most reliable application server in the market. Now in its eighth generation, WebLogic Server has been battle tested in the most challenging environments.

Table 1. High-level BEA WebLogic Server 8.1 features and benefits

Features	Benefits
Developer productivity	
BEA WebLogic Workshop integration	BEA WebLogic Workshop is an integrated development framework that empowers all application developers—not just J2EE experts—to rapidly create, test, and deploy applications on the WebLogic Platform 8.1.
EJBGen	Simplifies and speeds EJB development from within the WebLogic Workshop development environment.
BEA WebLogic Builder	Graphical application assembly and deployment tool speeds packaging and deployment process.
JBuilder, BEA WebLogic Edition	Develop, test, and deploy from JBuilder, BEA WebLogic Edition, tightly integrated with WebLogic Server.
Leverage existing assets	
Native Web services	Easy exposure of application functions as standards-based Web services that leverage the reliable, scalable, and high-performance infrastructure provided by WebLogic Server.
Integrated messaging	Built-in, high-performance, reliable, and scalable messaging for asynchronous processing in distributed applications.
Messaging bridge	Provides built-in interoperability with other messaging products.
BEA WebLogic/Tuxedo connector	Bidirectional, transactional, and secure integration with BEA Tuxedo.
BEA WebLogic jCOM	Native interoperability with Microsoft environment—allows access to objects deployed in WebLogic Server from Visual Basic, Active Server Pages (ASP), and other COM+ based products.
Database drivers	Tested database drivers for leading relational databases.
Adaptable security architecture	
Dynamic role mapping and authorization rules engine	Allows creation and processing of roles and authorization rules in real time. Based on real-world conditions that facilitate flexible and powerful security policies.
Policy editor	Gives administrators the ability to define security policies in a human-readable language, in real time, through intuitive graphical interface.
Pluggable security framework	Open Service Provider Interface allows extension of WebLogic Server security by leveraging existing security solutions, developing custom security service providers, or using off-the-shelf third-party products.
Interoperability with external security products	Easy integration with external security products allows use of the full scope of security functionality available from best-of-breed third-party security products.
Simplify management	
Web-based management console	Intuitive Web-based management console.
Application monitoring	Complete application, infrastructure, and VM monitoring facilities.
Domain configuration wizard	A graphical tool for fast and reliable domain configuration; allows configuration of complex clusters in minutes.
Two-phase deployment	Provides reliable and error-free rollout of applications in large production environments.
Whole application view	Extensible, Java Management Extensions (JMX)-based, Simple Network Management Protocol (SNMP)-compatible Web- and command-line tools to give administrators visibility into VM, application server, and user code to find and fix problems.
Interoperability with external system management products	Manage WebLogic Server from existing management products, including OpenView Software, BMC Patrol, and others.

Table 1. High-level BEA WebLogic Server 8.1 features and benefits (continued)

Features	Benefits
Deploy with confidence	
Enterprise clustering	Native clustering that is completely transparent to the application. Proven scalability and reliability in the most demanding enterprise environments.
Load balancing	Web tier, business components, messaging factories and destinations, database connections, and others for better load handling, scalability, and higher quality of service. Multiple configurable options available.
Failover	Confirms that users experience no service interruption in mission-critical applications. Use of in-memory replication to scale large clusters while providing high availability.
Caching	JavaServer Pages (JSP), servlet, EJB, and Java Database Connectivity (JDBC) connection caching for improved performance and scale.
Connection pooling	Allows reuse of different types of connections required to establish communications with clients, to databases, application adapters, and message factories.
Platform independence	
Multiple platform support	WebLogic Server 8.1 supports virtually all popular hardware platforms and operating systems, offering more options in selecting an environment that fits needs.
Interoperability with Microsoft .NET platform	Tested integration with Windows®, SQL Server, Internet Information Server (IIS), COM+, and Microsoft .NET Web services.
Open standards	
J2EE certification	Tested and certified J2EE 1.3 compliant.
Web services	Native support for SOAP, WSDL, and UDDI for standards-based application connectivity.
Java Authentication and Authorization Service (JAAS)	Standards-based way to authenticate and enforce access control.
SNMP	Standard protocol for network management and monitoring.

High-level WebLogic Server 8.1 features and benefits are detailed in table 1.

WebLogic Server JMS on NonStop servers is a part of the WebLogic Server implementation. WebLogic Server JMS can be used to send and receive messages between heterogeneous platforms, and to invoke Message-Driven Beans (MDB) in WebLogic Server on NonStop servers.

WebLogic Server is well integrated with the BEA Tuxedo transaction processing system. HP NonStop Tuxedo Software is based on BEA Tuxedo code and is specially enhanced for NonStop servers. BEA's WebLogic Tuxedo Connector (WTC) provides secure, transactional interoperability between WebLogic Server on any platform (including NonStop servers) and both BEA Tuxedo and NonStop Tuxedo Software. This means that WebLogic Server applications can use WTC to interoperate with new and existing back-end Tuxedo servers, either BEA Tuxedo servers or NonStop servers.

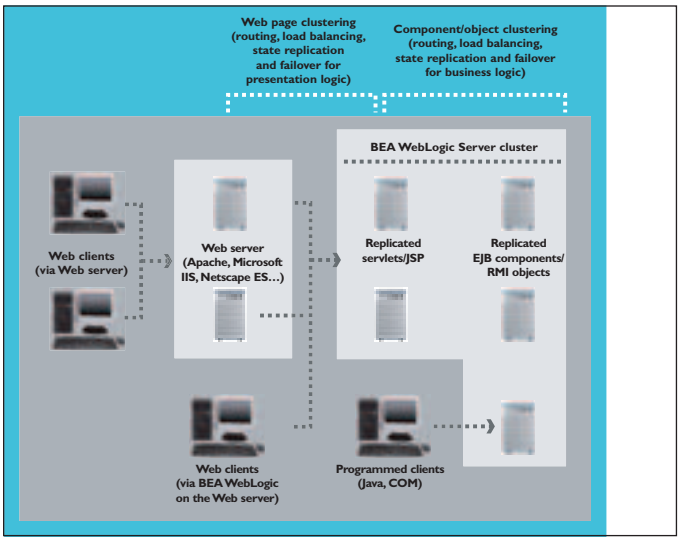

Figure 3. BEA WebLogic Server clustering.

Other products in the WebLogic product family

WebLogic Server is the foundation for other products within the BEA WebLogic Enterprise Platform, which includes

- BEA WebLogic Integration
- BEA WebLogic Portal™
- BEA WebLogic Integration
- BEA WebLogic Workshop
- BEA Liquid Data for WebLogic™

HP and BEA have agreed to implement WebLogic Integration on NonStop servers in the future. Until then, WebLogic Integration can be used on mid-tier platforms, in conjunction with WebLogic Server on NonStop servers (see the section below on WebLogic Server and HP ZLE for more information). In addition, the WebLogic Workshop toolset can be used on an industry-standard workstation to expose WebLogic Server components and NonStop Tuxedo applications on NonStop servers as Web services.

WebLogic Server implementation for NonStop servers

Both WebLogic Server infrastructure and WebLogic Server applications have automatic and transparent access to NonStop servers, providing fault tolerance (no single failure will cause an application outage), massive scalability (WebLogic Server applications can be deployed to 4,080 processors with single-system and database image), guaranteed data integrity, and lowest total cost of ownership (TCO).

Figure 3 shows how WebLogic Server delivers the utmost in scalability and high availability with its advanced clustering architecture. On NonStop servers, the clustering is further enhanced by HP's proven fault-tolerant, massively scalable infrastructure, which has been running some of the most demanding applications in the industry for more than 25 years.

Figure 4 shows how the WebLogic Server application server plugs into HP's proven NonStop infrastructure, so that WebLogic Server and WebLogic Server applications can transparently leverage fault-tolerant process-pair technology, massive scalability, and absolute data integrity.

Figure 4 shows how NonStop server system advantages (turquoise) are leveraged for proven parallelism, along with WebLogic Server technology (light blue and gray), which enables the utilization of standard software applications, tools, and skills.

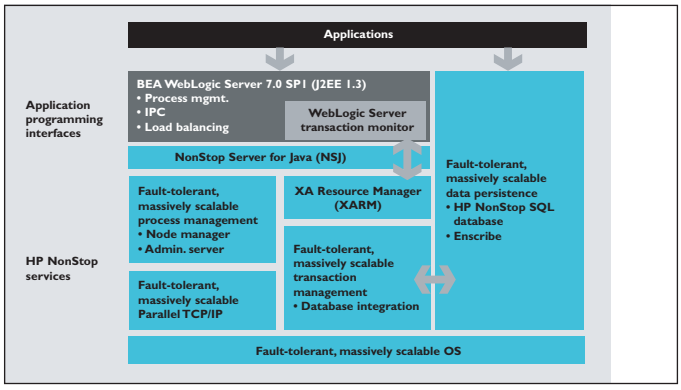

Figure 4. WebLogic Server utilizes the system advantages of NonStop servers.

WebLogic Server uses defined industry-standard interfaces (not specially created interfaces) to take advantage of NonStop server system advantages, significantly reducing the technical issues involved in implementing future releases of WebLogic Server on NonStop servers.

Note that the NonStop operating system, process management, transaction management, and data management are all part of the environment, along with the new XA-compliant resource manager we have developed specifically to enable the WebLogic Server transaction manager to work with NonStop TMF Software.

Also note that BEA's process management, interprocess communication (IPC), and load balancing are used for two reasons: to achieve fast time to market, and to enable existing applications and management tools to work on NonStop servers as they do elsewhere.

The result is the best of both worlds: the benefits of a standardized environment, with the advantages of NonStop servers.

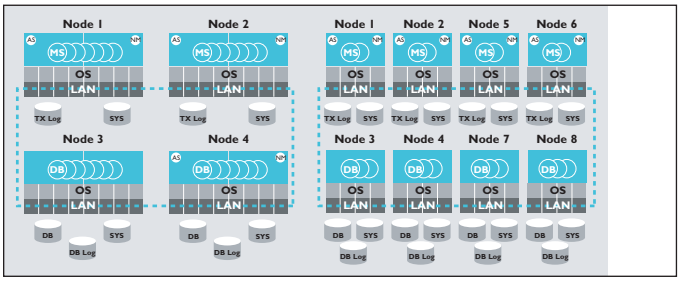

Figure 5. Two different ways to scale symmetric multiprocessing (SMP) environments from a simple two-tier 16-CPU 4 x 4 configuration.

Advantages of WebLogic Server on NonStop servers

Figures 5 and 6 compare WebLogic Server on NonStop servers relative to 4 x 4 industry-standard clusters. The MS circles are managed servers, where multiple instances of the user application are executed. The NM circles are node managers, which manage all MS instances. The AS circles are administration servers, to which administrators connect in order to manage the system. The DB disks are the database files. The DB Log disks are the database logs. The TXLs are the WebLogic Server transaction logs, one instance per managed server (so there would actually be many more of these logs in a real system). The TMF TXLs are the NonStop TMF transaction logs, one per NonStop server node. Finally, the SYS files are the images of the operating systems and related system code.

The figure shows two different ways to scale SMP environments with a 4 x 4 configuration. On the left, the number of CPUs per node has been doubled. On the top right, the number of nodes in each tier has been doubled.

Each of these approaches has its strengths and weaknesses. The approach of having more CPUs per node is easier to manage, but the weakness is the large size of the failure zones. A large number of nodes limits the size of the failure zones, but at the cost of management complexity. In both scenarios, transaction state is distributed among numerous logs, and resolution of indoubt transactions can take some time.

Figure 6 shows a system with two 16-CPU NonStop system nodes. The parallelism built into the NonStop server enables the system to scale very easily. The added advantage is that the database is automatically distributed across all the nodes in the system, and the integrated database and transaction log (TMF TXL) is automatically synchronized across nodes by the system. Scaling the system is just a matter of starting more software on the new CPUs.

There are several significant points about figures 5 and 6, as follows.

First, the NonStop server continues to be the only server in the industry that is designed from the ground up to reduce, detect, and isolate failures, while providing massive scalability and the lowest TCO in the industry. All components and data paths are replicated, monitored, and managed to avoid downtime due to inevitable component failures.

Second, notice how the potential impact of inevitable failures is limited—CPU failures in the 4 x 4 cluster will take out an entire node, or one-fourth of the available processing power. A CPU failure on the NonStop server, on the other hand, will take out only one-sixteenth of the available processing power.

Third, notice how the potential for human error is reduced because there are fewer processes and files to be managed. There is one instance of each of the administration and node managers on the NonStop server system versus one per node in the 4 x 4 cluster. Also, there is one each of the system file, database file, and WebLogic Server transaction log on the NonStop server versus one per node in the 4 x 4 cluster. Additionally, instead of one TMF log, the 4 x 4 cluster has one database log file per node. There's one Tlog file per WebLogic Server instance on the NonStop server, just like on a 4 x 4 SMP cluster. But, all WebLogic Server Tlog files can reside on the same physical disk, and if nothing other than NonStop TMF managed resources are involved in the transaction, nothing is written to this log.

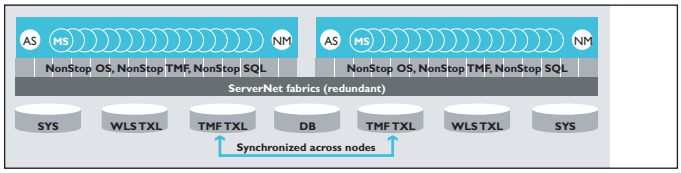

Figure 6. Two 16-CPU NonStop nodes, connected by the redundant ServerNet fabrics.

Finally, in the event of a failure, the 4 x 4 cluster must wait for the lost transaction logs to be recovered before in-flight transactions can be resolved, which is usually a manual process. On NonStop servers, access to the log is maintained through component failures, so in-flight transactions can be automatically resolved without manual intervention or downtime.

WebLogic Server and HP Zero Latency Enterprise (ZLE)

A zero latency enterprise (ZLE) depends on comprehensive and efficient data and application integration. Zero latency operations require a new type of unifying architecture for integrating, synchronizing, routing, caching, and transacting in real time. WebLogic Server extends the ZLE frameworks (NonStop Tuxedo and NonStop CORBA Software) with J2EE capabilities, enabling customers to combine the best of C/C++ and Java for large-scale enterprise applications such as ZLE. Tight integration between WebLogic Server and NonStop Tuxedo Software through WTC enables applications to leverage the best capabilities of the two environments so that WebLogic Server clients can invoke Tuxedo services and Tuxedo clients can invoke EJB that are running in BEA WebLogic Server EJB (see figure 7).

A single sign-on environment between WebLogic Server and the NonStop Tuxedo system allows a WebLogic Server principal to access Tuxedo services, enabling propagation of the security context for the requesting WebLogic Server principal to the Tuxedo domain. Transactions also propagate in both directions, enabling Tuxedo and WebLogic Server components to participate in the same unit of work (transaction).

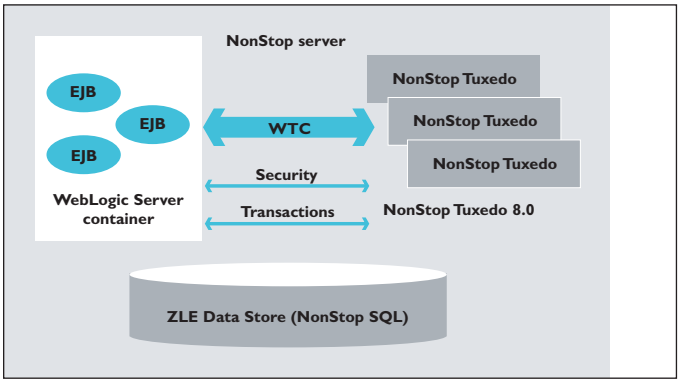

Figure 7. WebLogic Server and NonStop Tuxedo software.

Figure 7 shows how WebLogic Server and NonStop Tuxedo Software work together to enable large-scale enterprise applications to combine the power of C/C++ and Java. NonStop SQL Database software powers the ZLE Data Store and is fully integrated with NonStop Tuxedo Software and WebLogic Server.

WebLogic Server and WebLogic Integration for HP Zero Latency Enterprise (ZLE)

WebLogic Integration is a single solution delivering application server, application integration, business process management, and business-to-business integration functionality for the enterprise. As such, it is an important component of ZLE solutions, enabling access to standard applications such as SAP and Siebel as well as legacy applications on mainframes and other platforms. ZLE also provides essential message store and enterprise data store capabilities to WebLogic Integration. Although WebLogic Integration is running on UNIX® and other platforms, and will be available on NonStop servers in the future, it's fully integrated with ZLE environments running either WebLogic Server or NonStop Tuxedo Software (see figure 8).

All WebLogic Integration services, such as business process management, EAI, and business-to-business integration, are available to the ZLE environment transparently—using standard WTC and Remote Maintenance Interface (RMI) connectivity. When running on NonStop servers, WebLogic Server provides the ultimate in scalability, reliability, data integrity, and manageability. Proven fault-tolerant, massively scalable subsystems provide enhanced process and data persistence, together with the most reliable transaction processing in the industry. Component failures are inevitable, but with WebLogic Server on NonStop servers, no single failure will cause an application outage.

Platform and requirements

The following components are required to run WebLogic Server 8.1 on NonStop servers.

For HP Integrity NonStop NS-series servers:

- Any Integrity NonStop server with at least 2 GB of memory per processor (4 GB per processor is strongly recommended)
- HP NonStop operating system Release Version Update (RVU) H06.03 or later
- NonStop Server for Java 4.2 Software (HSJ96V4a)
- HP NonStop SQL MX 2.0 Database or later

For HP NonStop S-series servers:

- Any HP NonStop S-series server with floating-point processor and at least 2 GB of memory per processor (4 GB per processor is strongly recommended)
- HP NonStop operating system RVU G06.20 or later
- NonStop Server for Java 4.0 Software (SJ96V4a)
- HP NonStop SQL/MX 1.8.5 Database or later (NonStop SQL/MX 2.0 Database or later is required for use with BEA WebLogic Integration)

For interoperation with other JDBC-compliant databases, visit **www.bea.com/products/weblogic/server.**

For more information

For more information about WebLogic Server on NonStop servers, visit **h71033.www7.hp.com/page/BEAWLSServer.html.**

For more information about WebLogic Server, visit **www.bea.com/products/weblogic/server.**

To download a free evaluation copy of WebLogic Server 8.1, go to **http://commerce.bea.com/showallversions.jsp?family=WLS,** and scroll down to WebLogic Server Package Installer (below WebLogic Server Net Installer and WebLogic Platform Net Installer). (In the WebLogic Server Package Installer section, look for WebLogic Server 8.1 with SP2 [for NonStop S-series servers], or SP3 [for Integrity NonStop servers], then look to the right for the pull-down menu. Look for the HP NonStop server entry in the pull-down menu.)

HP and BEA Services

With services from HP and BEA, you see more value from your investment in WebLogic Server 8.1 more quickly. BEA WebLogic Server Upgrade Assessment Service offers an implementation plan to minimize the risk of an upgrade to BEA WebLogic Server 8.1. BEA

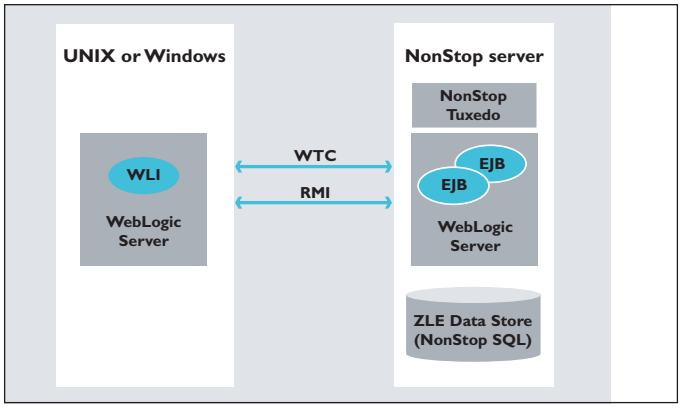

Figure 8. WebLogic Integration integrated with either NonStop Tuxedo software or WebLogic Server environment on a NonStop server ZLE hub and NonStop SQL database and ZLE Data Store.

Table 2. Technical features and benefits

Features	Benefits
Web services	
Support for SOAP, WSDL, and UDDI	Expose EJB or JMS destinations as secure, scalable Web services without additional programming, or remotely access Web services hosted on other platforms.
Built-in Web service utilities	Utilities for easy development and deployment of enterprise-class, Web services–based applications, and simple search and discovery of external and internal Web services published in UDDI registries.
Presentation services	
• **Built-in Web server** • **Apache, Microsoft IIS, and Netscape integration** • **Servlet and JSP engine** • **Advanced Web caching**	A self-contained platform for serving static and dynamic content to Web and wireless applications that leverage high-speed page caching for increased performance and scalability.
Web presentation services server clustering	
• **Load balancing** • **Advanced takeover with state caching**	Achieve Web server scalability and high availability by deploying a cluster of servers. Additional in-memory replication provides high-performance takeover for enhanced availability.
Business logic services	
• **EJB container** • **Distributed transaction management with two-phase commit**	EJB servers reduce the complexity of developing middleware by providing automatic support for middleware services, such as transactions, security, database connectivity, and more.
Business logic services clustering	
• **Load balancing** • **Advanced takeover with replicated naming, smart stubs, and in-memory EJB state caching**	Achieve application-level scalability and high availability by deploying a cluster of servers. Additional in-memory replication provides high-performance takeover of business logic for enhanced availability.

Table 2. Technical features and benefits (continued)

Features	Benefits
Information access services	
• **JDBC support/drivers** • **Naming and Directory Services** • **XML**	Integrate with back-end systems.
Enterprise messaging platform	
• **Distributed highly available JMS** • **JavaMail**	Integrated messaging provides a reliable, flexible service for the asynchronous exchange of business data and events throughout an enterprise. The enterprise messaging platform handles highly scalable message generation and processing for either point-to-point or publish/subscribe architectures.
Integrated development tools	
• **Tightly integrated with all leading development tools, such as WebGain Studio, Visual Age for Java, and JBuilder** • **Integrated enterprise application development and testing utilities for building J2EE and Web services–based distributed systems**	Rapid development with industry-leading graphical development tool of choice. Enables IT to further leverage the value of J2EE and Web services through multiple integrated utilities. Provides easy-to-use EJB development and packaging utilities, and integrated facilities for developing, testing, exposing, and seeking enterprise-class Web services.
Enterprise application management	
• **Web-based management console** • **Java Management Extensions (JMX)** • **Externalized MBean API** • **SNMP**	Provide developers and administrators with Web-based, granular, extensible configuration and monitoring tools, and/or integration with leading management frameworks. Allows programmatic management of WebLogic Server deployed applications.
Integrated security	
• **Pluggable security architecture** • **GUI for rules-based security policy setup** • **Covers J2EE and non-J2EE components** • **Flexible authentication and authorization** • **Integrated security and firewall support** • **Integrated logging** • **Secure Web services**	WebLogic Server secures networked applications with optional encryption, authentication, and authorization based on Secure Sockets Layer (SSL) and X.509 digital certificates. It provides an open infrastructure for plugging into the available third-party security solutions. All WebLogic Server services are securely available through firewalls via tunneling through HTTP or HTTPS. It also implements a secure Web services framework.
Application integration	
• **Java Connector Architecture (J2EE CA) support**	Java Connector Architecture support allows any application with a J2EE CA–compliant resource adapter to be "plugged-in" to WebLogic Server. Advanced integration capabilities are available in WebLogic Integration.

Table 2. Technical features and benefits (continued)

Features	Benefits
Certified J2EE compliance	
• EJB 2.0 • J2EE CA 1.0 • JDBC 2.0 • JSP 1.21 • Servlet 2.32 • JTA 1.01 • JMS 1.0.2 • JNDI 1.2 • Java RMI 1.0 • RMI/IIOP 1.0 • JCA 1.0 • JAAS 1.0 • JMX 1.0 • JavaMail 1.1 • JAXP 1.1	Protect your investment by programming to the industry-standard J2EE platform. Certification assures enterprises and developers alike that application program interfaces (APIs) and development features will work in a uniform way.
Integration with other leading Internet technologies	
• HTTP 1.1 • SSLv3 • LDAPv2 • X.509v3 • JAXP • WSDL 1.1 • UDDI v2 • SNMP 2.0	Integrated with standard Internet and XML protocols.

Consulting also offers an Architecture Validation Service. And, BEA customers can attend comprehensive training on how to build scalable J2EE Web applications, leveraging all of the services available in BEA WebLogic Server 8.1.

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