



Technology
Powers
Business



BEA WebLogic Service Delivery™

Driving Carrier Revenue Growth
through Simplified and Accelerated
Delivery of New Services

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EXECUTIVE SUMMARY

Service providers are facing tough challenges in today's telecommunications marketplace. Fierce competition is driving down the average revenue per user (ARPU) for traditional voice services. At the same time, new technologies, such as instant messaging, Internet telephony, and wireless LAN are altering the competitive landscape. Customers have an increasing range of options from a wider assortment of providers. Number portability has added to this market volatility, eliminating a key reason for customers to stay with an existing provider.

The answer to this challenge is to rapidly deploy the next-generation of services to attract customers and generate new revenue streams. However, traditional service deployment strategies are cumbersome and costly, and are not designed to handle the complexity of data and converged voice/data applications. The BEA WebLogic Service Delivery™ running on Intel® architecture-based servers provides a solution to this challenge: a comprehensive, integrated platform that can dramatically simplify and accelerate service delivery.

To address the full complexity of the telecommunications environment, BEA has partnered with a number of leading software vendors to extend BEA WebLogic Platform™ with pre-integrated solutions for simplifying and accelerating service-delivery. The combined solution provides exceptional off-the-shelf capabilities for seamless interworking with today's complex network infrastructures. It also establishes a unified and integrated framework for rapidly developing, deploying and managing new services; for collaborating with third-party service and content providers; and for reusing software components to improve consistency and dramatically reduce development costs.

BEA and Intel have been working together for years to optimize the performance of BEA WebLogic solutions on Intel architecture, so customers can enjoy the highest levels of performance, agility and cost-savings. Intel® Itanium® and Intel® Xeon™ processor-based platforms deliver unparalleled performance for BEA WebLogic solutions at a much lower cost than RISC architectures. In tandem with BEA WebLogic Service Delivery, they help to establish an agile infrastructure that can be deployed, scaled and adapted incrementally, while meeting the rigorous requirements of service providers.

THE BUSINESS CHALLENGE

The marketplace is primed for new subscriber services that combine data and voice to deliver better communications, entertainment, and business collaboration tools over wired and wireless networks. Bandwidth is available and affordable, and a new generation of smart phones, wireless handheld devices, and wireless-enabled notebooks are fueling demand among consumers and business users. As revenues and margins continue to drop for traditional voice services, these converged services are essential to attract new subscribers and maintain profitability. Yet deploying them is no easy task. Capital and operational budgets remain tight, and development of next-generation data and voice/data services has been slow. There are two key reasons for this. The first is the inherent complexity of converged services; the second is the inflexibility of existing network infrastructures and traditional service deployment strategies.

The Complexity of Converged Services

Converged voice and data services are complex and varied, and have different requirements than traditional voice-only services. They require extensive end-to-end integration among diverse platforms, IT-based applications, networks and third-party service providers. This creates significant challenges in creating dependable services that meet end-user expectations for performance, reliability, availability, and manageability.

For example, service providers are introducing unified, Internet Protocol-based communications services to leverage the widespread adoption of high-speed DSL and cable access. This allows them to merge voice functions with on-line capabilities to assemble new services, such as voice-over-IP calls from desktop contact management applications, voicemail review and forwarding via email, location services (finding a person by placing the same call to multiple phone numbers), web-initiated conference calls, and more. These types of services not only offer new functionality, but provide customers with greater device and network independence. Handheld devices, PCs, and regular phones can be used in consistent ways to communicate across fixed line, cable, Internet and mobile networks. This is a great benefit to customers, but requires real-time network access, data coordination, and billing system integration. Success in the marketplace also requires the rapid creation and delivery of new offerings to meet burgeoning and evolving demands.

Similarly, many media-related services require integration with one or more content providers, to sustain a compelling mix of movies, music, news, games, etc. Many of these services have a very short lifetime, especially those that are linked to specific entertainment, sporting or promotional events. In some cases, a set of services may have to be created within days, or even hours, to serve subscriber demand related to a one-time, high value event. This not only requires cross-vendor integration, but also a very high level of agility and efficiency to sustain profitability.

These challenges are exacerbated by another critical factor, which is most pronounced in the consumer marketplace. Out of the enormous variety of available services, a few are universally popular, which drives high volume usage but typically delivers lower margins. Other services offer greater value, but only to select user groups. These niche services can be a major source of profitability, and can be instrumental in attracting and retaining subscribers. Yet it may ultimately take hundreds or even thousands of such services to deliver high value across a large subscriber population. This is a major business challenge, yet it creates great opportunities for service providers that can efficiently deliver and manage a large portfolio of value-added services.

Limitations of Conventional Approaches

Traditional approaches to network and service build-out are not designed to handle rapid and targeted go-to-market requirements, or to address the constantly evolving nature of next-generation applications and content. Existing network infrastructures are based on voice- and bandwidth-centric network elements that are relatively static and inflexible. These elements are available only from a few vendors worldwide, and those vendors have focused primarily on network reliability, scalability, and performance, rather than on new service creation and delivery. This has led to network infrastructures that are proprietary and essentially closed to the innovative, more highly personalized services that customers now demand.

In this environment, the deployment of a new service requires the layering of existing network infrastructures with open, IT-based capabilities that can access and integrate the many components of new data-based services. Development and integration is complex, and must be repeated for each new service. When subscriber options were limited and relatively stable, this was a viable approach. In today's telecommunications marketplace, where the continuous deployment of new services and service upgrades are essential to maintain profitability and differentiation, a new approach is required.

ESTABLISHING A SERVICE DELIVERY PLATFORM

A service delivery platform (SDP) sits on top of today's complex network infrastructures to establish a consistent environment for developing, deploying, integrating and managing data and voice/data services. With this approach, only the SDP has to be directly integrated with underlying networks and business support systems. Once that integration is complete, the SDP ensures a common development, integration and runtime environment for all services; and the complexity of the network is no longer a barrier to rapid deployment (Figure 1).

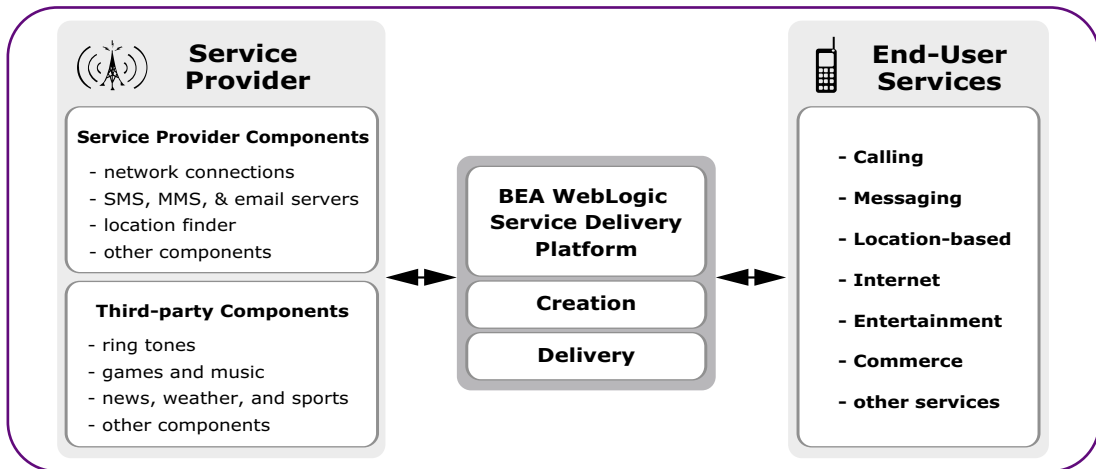


Figure 1: A service delivery platform abstracts network complexity, which enables the rapid integration of internal and third-party components to deliver innovative new services faster and more cost-effectively.

Of course, the SDP must be designed to meet the essential business and technical requirements of network service providers. Carrier-grade performance, reliability, availability, and manageability must be built into the platform, so these capabilities do not have to be developed separately for each service. The SDP must also be easy to integrate into existing system management and operational environments, and it must be deployable in an iterative and incremental fashion to manage costs and avoid disruption.

In addition to these core requirements, the following features are essential for containing costs and accelerating service delivery in an increasingly complex and dynamic environment:

- **Modular, reusable software components**—Though services can be enormously diverse, core capabilities and functionality can be widely shared among them. Reusable components streamline development and help to ensure consistent behavior, integration and operation.
- **Support for third-party integration and collaboration**—The integration of third-party applications, services and infrastructure capabilities is increasingly important for sustaining competitive service options.
- **Efficient service development and management tools**—To support a large number of services with short lifetimes, an easy-to-use service development environment is essential, along with tools for managing and controlling services, content and relationships.
- **Reliance on commonly available IT skill sets**—Data and voice/data applications require an efficient melding of IT and telecommunication technologies and cultures. Service development must be supported using commonly available and well-understood information technology to ease this convergence and reduce the cost of service development.
- **Adherence to industry standards**—Widely adopted standards increase a service provider's choice of products, services and vendors, and provide a more flexible and scalable foundation for growth.

BEA WEBLOGIC SERVICE DELIVERY

BEA WebLogic Service Delivery provides a comprehensive service delivery platform that addresses all of the requirements described in the previous section; it can be deployed incrementally on a service-by-service basis, and can scale to support a complete portfolio of future services. BEA WebLogic Service Delivery is built on the Java 2 Platform, Enterprise Edition (J2EE) specification and provides leading support for modular, component-based software development. With this integrated, standards-based framework, both fixed and mobile service providers can simplify and accelerate their development, integration and management of new services. The result is faster-time-to-market at less cost, and, ultimately, much more efficient service creation and delivery (Figure 2).

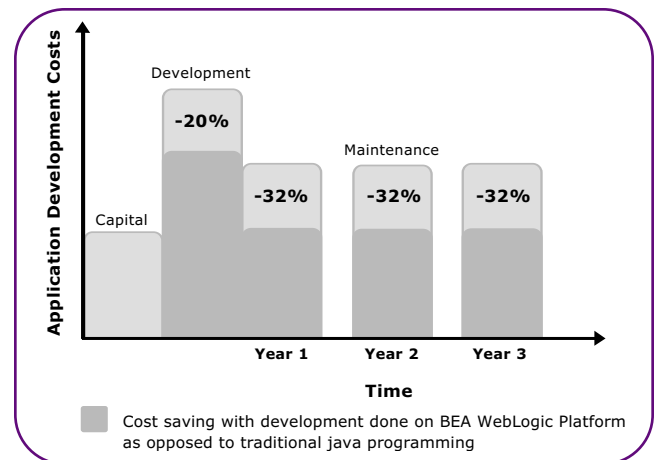


Figure 2: BEA WebLogic Service Delivery is based on the BEA WebLogic Platform, which has been shown to accelerate service creation and deployment, delivering substantial savings in service development and maintenance costs. Source: Gartner, Inc.

At the heart of BEA WebLogic Service Delivery is BEA WebLogic Platform, which includes a developers' environment for service creation; deep service application and OSS/BSS integration capabilities; an integrated portal for personalization and content delivery; and the leading Java-based runtime environment for telecommunications applications. This platform is extended with a broad set of pre-integrated products from independent software vendors (see Table 1). The result is a highly flexible, carrier-grade service delivery platform that can be implemented relatively quickly and cost-effectively in virtually any network environment. It is designed to support a full range of data and voice/data services. It also offers a set of core, off-the-shelf service components that can be used as building blocks to accelerate integration and create a foundation for rapid growth.

This combination of off-the-shelf capabilities, easy integration of third-party applications and a component-based development environment delivers a practical solution to the intense challenges of new service deployment. It offers multiple implementation options, along with optimized tools for ongoing enhancements and service differentiation.

Table 1. Components of BEA WebLogic Service Delivery. For more information, see Appendix A.

COMPONENTS	OPTIONS
Service Creation Environment	BEA WebLogic Workshop™
Service Execution Environment	BEA WebLogic Server™
Portal Framework	BEA WebLogic Portal™
Device Rendering and Browsing Proxy	MobileAware, Volantis
VoiceXML/Multi-modal	HP Open Call Media Platform, SandCherry
Application Download Manager	Elata
Service Coordination	Appium, Incomit
OSS/BSS Enabler	BEA WebLogic Integration™
Network Enablers	
JAIN SLEE	OpenCloud
Parlay/OSA	Aepona, Incomit
SIP	Ubiquity
SS7	Ulticom

How it Works

From a high-level perspective, BEA WebLogic Service Delivery provides two core software environments (Figure 3). One is the Service Execution Environment, which includes a comprehensive set of tools, functions and capabilities for deploying and integrating carrier-grade services. The other is the Service Creation Environment, which is a simplified and integrated development environment for Java-based applications. Each of these environments is described below.

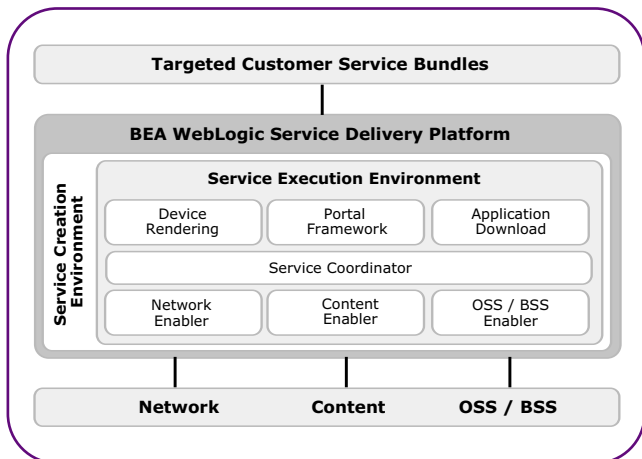


Figure 3: BEA WebLogic Service Delivery consists of a Service Execution Environment, for unified and simplified integration and management of carrier-grade services; and a Service Creation Environment, for rapid development of new services to enhance subscriber options.

The Execution Environment

The foundation of the Execution Environment is BEA WebLogic Server, the world’s leading application infrastructure platform. BEA WebLogic Server provides a carrier-grade runtime environment with extensive, out-of-the-box capabilities for deploying services that meet telecommunications requirements for performance, scalability, availability, security and manageability. This high level of functionality helps to establish a consistent software environment and enables application developers to concentrate on service functionality rather than infrastructure needs.

A wide variety of network, content and OSS/BSS enablers are included to link the execution environment with underlying infrastructure and support systems. Leading IT and telecommunications standards and protocols are supported through BEA WebLogic Integration and a number of pre-integrated, third-party application programming interfaces (APIs). In essence, these enablers act as a bridge between the telecommunications and IT domains, so that each domain can be developed and scaled without disrupting the other. This is a major advantage of developing on the BEA WebLogic Platform. Service logic is abstracted both from the network and from the underlying operational applications, so developers can rapidly create new services by leveraging pre-existing assets. New applications are easily configured to take advantage of common infrastructure solutions for provisioning, subscriber data management, billing, customer care, service assurance, business intelligence, etc.

To support the widest range of applications, APIs can be offered through a variety of technical mechanisms such as CORBA, Java or Web services (SOAP/WSDL). In implementing APIs, it is especially important that they make use of a consistent set of abstractions, so it is possible to call each function in the same way and so information returned by one function can be easily shared with another. In this way, the API effectively hides the complexity of the underlying network and support systems.

The Execution Environment is extended by the addition of BEA WebLogic Portal, BEA WebLogic Integration, and a variety of pre-integrated third-party solutions for functions such as device rendering, application downloads and network integration. These are core functions that will be required by most network service providers. They can be implemented selectively and combined with an enormous variety of additional third-party applications or with internally developed services and components.

Although a multitude of services can be run on the BEA WebLogic Service Delivery platform, key services in existing implementations are tending to fall into one of three categories: content services, call control services, and collaborative service delivery.

Content Services

Content services are used to offer customized information and media that can be viewed over the network or downloaded by subscribers. BEA WebLogic Service Delivery currently provides four key services that support these capabilities.

- **Device Rendering for Multi-Channel Service Delivery**

Device rendering automatically customizes service delivery to optimize the user experience for various client devices, based on screen size, memory, bandwidth, etc. By maintaining a database of device characteristics and delivery policies, services can be delivered efficiently to multiple devices. In combination with the development tools in BEA WebLogic Workshop, this makes it much easier to support the increasing variety of access methods and devices.

- **BEA WebLogic Portal for Personalized Interactions**

Portals allow service providers to quickly provide customers with personalized interfaces for accessing services and managing their account, usually through a Web or WAP browser. A portal will typically include a menu of services, and may also include search functionality to supplement the menu. Page aggregation can also be employed for full-screen clients, so subscribers can create a composite “homepage” based on their personal preferences. These personalized pages can be used to deliver bulk or personalized offers or to pass through third-party advertising. Business management tools are provided to enable service providers to manage the catalogue of applications and services and to coordinate service and content delivery.

- **A Browsing Proxy for Managing and Enhancing Internet Access**

A browsing proxy can be used to intercept all customer Web and WAP activity and to enforce consistent policies for presentation, branding, billing, etc. For example, a service provider might include a logo or navigation button as part of its standard display, or implement access control and billing mechanisms for premium sites. The browsing proxy can also be used to enhance the subscriber experience, by transcoding site content to optimize presentation on specific client devices, and by aiding recovery from common errors, such as badly formatted HTML. These benefits can usually be obtained very cost-effectively, without modifying the content of actual Web and WAP sites. As with the portal application, business tools are provided to manage these resources and capabilities.

- **Downloads for Media and Application Delivery**

Many popular, revenue-generating services involve the delivery of static information to client devices. This is especially true in the mobile arena, where ring tones, logos and J2ME applications allow subscribers to personalize their experience and add functionality. BEA WebLogic Service Delivery offers a pre-integrated download manager that allows subscribers to find and download static content of all kinds. Menu options can be personalized based on both the customer and the client device, and digital rights management functionality is included so content can be appropriately packaged and protected. Billing functions can be invoked automatically following a successful download, and are easily configured to match the specific customer and content, as well as associated vendor relationships.

Unlike the portal and browsing proxy, the download manager typically stores its downloadable content in an internal database. An easy-to-use content acquisition and publishing system is provided to allow the network service provider and/or authorized third parties to acquire and manage content with minimal overhead.

Call Control Services

Call control services enable network service providers to initiate and perform traditional carrier signaling and to deliver intelligent network services, such as call forwarding. They can also be used to support newer, data rich services using network-oriented protocols such as JAIN/SLEE, Parlay, SIP, and SS7. These protocols have overlapping capabilities and each has its particular focus and advantages. There is currently no “one size fits all” approach. Some carriers are trying to focus on a single, key protocol, while others are looking to leverage multiple stacks within their networks.

Today’s leading call control services fall into two categories: converged applications that combine data services with traditional telecommunications services, and mobile applications.

Examples of converged applications include:

- **Click-to-Dial**—This service enables Web-based call set-up, so users can initiate a voice call simply by clicking on a number in a Web page.
- **Personal Phone Numbers**—Instead of associating a number with a specific phone, it can be associated with an individual or function. A call can then be placed across multiple phones to make a desired connection more quickly and with less effort.
- **Unified Messaging**—Voice, Web, and mobile communications can be merged to provide a single, integrated end-user interface that simplifies communications.
- **Enhanced Audio Conferencing**—Advanced integration of communications, contact databases, and content helps end-users set up conferences more quickly and communicate more effectively.
- **Automated Voice Interaction**—By combining speech processing capabilities with speech-to-text conversion, and merging Web and voice portal technologies, automated voice services can help business subscribers improve their customer service solutions while dramatically lowering their costs.

Examples of mobile applications include:

- **Gaming**—Cellular gaming is a rapidly growing market, and is supported by a new generation of handsets that are designed to enable full-color, three-dimensional, multiplayer games over cell phone networks. According to Chris Lovejoy, Nokia’s director of business development, “Networked gaming is becoming a minimum requirement for every phone that ships.”¹
- **Multimedia Messaging Services (MMS)**—MMS will transform communications by enabling the instant delivery of rich, personalized messages that include sound, images, and other rich content, and can be sent and received via either phone or PC.
- **Ringback tones**—This popular service allows users to customize the ring-tone they hear when they call another party.

1. New-Generation Phones Got Game, by Brad King, Wired News, September 12, 2003, available at: <http://www.wired.com/news/games/0,2101,60417,00.html>

- **Mobile PBX services**—PBX functionality can be extended to mobile phone users to increase revenue and attract new subscribers. As one example, push-to-talk capabilities can be configured among specific groups of employees to enable very rapid one-to-one and one-to-many call setup.
- **Location-based service capabilities**—The ability to customize information and content based on an end-user's location opens up enormous service possibilities for the consumer market, and even more for businesses subscribers, who can track and support their field personnel more effectively.

Collaborative Service Delivery

Carriers are increasingly “opening-up” their networks, so third-party developers and service providers can use the Telco infrastructure to deliver new applications and capabilities. Service providers are also looking for ways to open up their networks to support custom applications for enterprise customers. Given these trends, one of the most cost-effective ways to extend service options is to take advantage of existing services offered by third-party providers. Web services can be used to interface virtually any third-party or enterprise service with existing network elements and services and with OSS/BSS assets, such as subscriber directories and billing systems. A wide variety of alternative APIs, such as Parlay/X, can also be used to address specific requirements.

In order to extend the network out to a broader community, BEA WebLogic Service Delivery supports network gatekeeper solutions that have been developed by independent, Telco-focused software vendors. These gatekeepers help providers manage and control the issues that arise in a collaborative service environment, such as security and access control, billing and privacy protection. By providing a solid solution to these issues, a gatekeeper helps to build an environment of trust that enhances both subscriber and vendor relationships, while delivering enormous potential for service enhancement and incremental revenue generation.

The Service Creation Environment

Off-the-shelf functionality adds value quickly, but does not ensure differentiated services. The development of customized services, on the other hand, can be slow and resource-intensive using traditional methods. BEA WebLogic Service Delivery solves this dilemma with BEA WebLogic Workshop, which enables the reuse and recombination of modular software components to enhance off-the-shelf services and to rapidly develop new services.

This Service Creation Environment provides powerful tools for network service providers to develop their own components. In addition, BEA WebLogic Service Delivery application partners provide pre-integrated, off-the-shelf controls and extensions that offer immediate functionality for common Telco-oriented services.

Both application and business functionality can be encapsulated in software components, and the functionality is exposed using the same technical mechanisms that are used in the execution environment (e.g., CORBA, Java, Web services). This helps to ensure consistency across the entire service delivery framework.

BEA WebLogic Workshop offers a unified and integrated set of tools for developing and combining software components. To a large extent, services can be assembled, rather than written, using simple, point-and-click interfaces. This greatly reduces the need for Java expertise, and enables service architects to focus on functionality rather than code creation. It also helps to ensure reliable and consistent performance.

Application developers can freely mix and match components as needed. Over time, each service provider will establish a unique set of off-the-shelf and customized application components tailored to its own requirements.

**PERFORMANCE AND VALUE
AT THE HARDWARE LEVEL**

The cost, flexibility, and performance of the underlying hardware infrastructure are critical for supporting a growing subscriber base with an expanding menu of service options. Intel architecture-based servers running the Linux operating system offer industry-leading performance in a cost-effective, standards-based environment that simplifies infrastructure growth and reduces total operating costs. For several years now, Intel architecture has been the fastest growing hardware solution for BEA products. The combined platform delivers exceptional levels of cost-effective performance and agility at both the hardware and software level, and has demonstrated its value in a wide variety of real-world implementations (Figure 4).

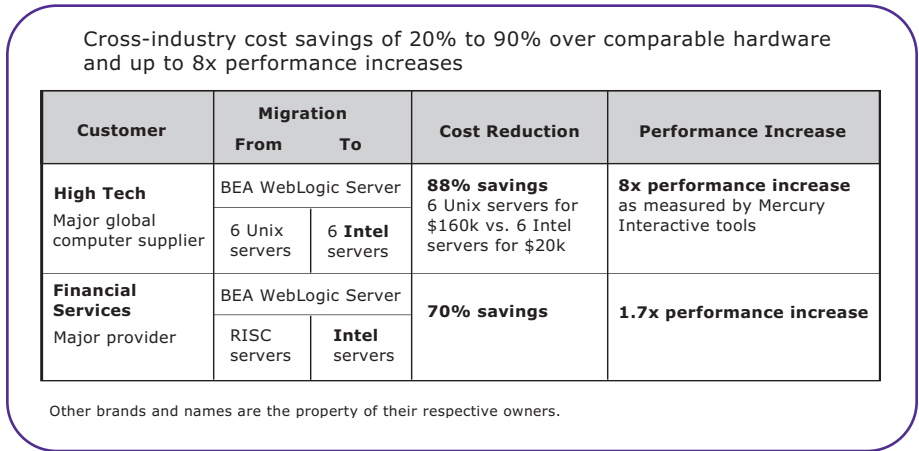


Figure 4: BEA WebLogic Service Delivery running on Intel® architecture is proving its value in a wide variety of real-world implementations.

Intel® Processor-based Platforms

Intel processor-based servers are delivering world-class performance for both 32-bit and 64-bit BEA WebLogic solutions (Figure 5). Individual platforms with up to 128 processors can be configured for high-availability to run the most complex and demanding applications. For simpler workloads, smaller and more affordable systems can be combined in high-availability clusters that take advantage of the load-balancing and fail-over capabilities of BEA WebLogic Server to deliver virtually unlimited capacity and availability.

These standards-based systems provide greater choice and investment protection than proprietary architectures, since platforms, software and support are available from an enormous ecosystem of third-party vendors. Intel drives continuous performance enhancements through processor and other silicon advances, and works with BEA and the broader industry to coordinate ecosystem development and support efforts. The result is a combined investment in the architecture that far exceeds that of any single, proprietary vendor, and fuels continuous innovation and competitive pricing.

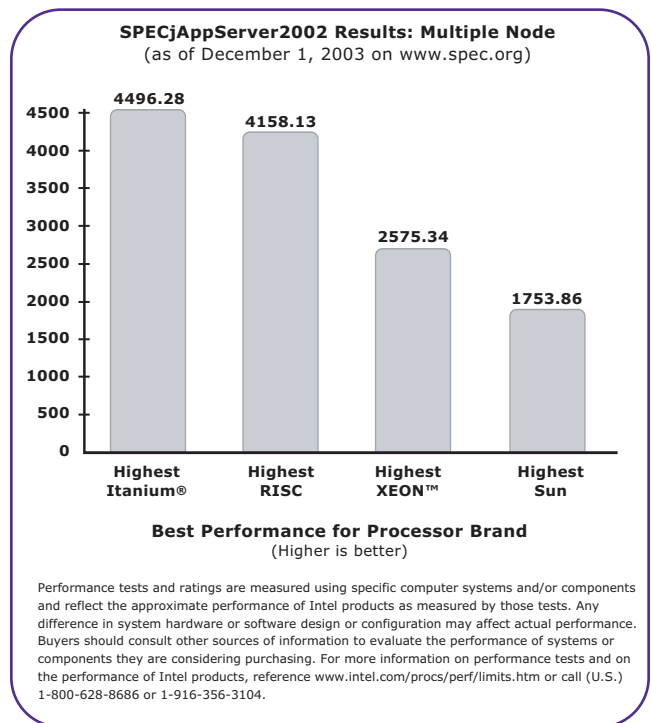


Figure 5: Intel® Itanium® 2 and Intel® Xeon™ processor-based systems have demonstrated industry-leading performance in 64-bit and 32-bit Java application infrastructure environments, respectively. For the latest benchmark information, visit: <http://www.bea.com/intel/collateral.htm> SPECjAppServer2002 is a trademark of SPEC at www.spec.org. Source: All results published on www.spec.org (as of December 1, 2003).

- **Intel® Itanium® 2 processor-based systems for mission critical 64-bit solutions**—These servers deliver exceptional performance, reliability, availability and scalability for the most demanding and business-critical applications. They provide a standards-based architecture that is now supported by a wide range of platform manufacturers, software vendors and service providers. In a BEA WebLogic environment, they are particularly well-suited for hosting storage databases for media content, since such systems may store terabytes of information that must be accessed and delivered in real-time across multiple applications and networks.
- **Intel® Xeon™ processor-based systems for mainstream 32-bit and 64-bit solutions**—These platforms deliver price-performance, and currently offer a broad range of operating systems applications, vendors and solution providers giving you flexibility and choice for your solution needs.¹ They can be instrumental in providing the agility and dependability needed for rapid and cost-effective hardware scaling. In addition, Intel® Extended Memory 64 Technology (Intel® EM64T) has been introduced into the Intel® Xeon™ processor family to enable 64-bit memory addressability and processing. This allows even greater application flexibility and provides a cost-effective bridge to the higher performance and more robust capabilities of Itanium architecture.

Optimized for BEA WebLogic Service Delivery

Intel and BEA engineers work together on an ongoing basis to ensure that BEA WebLogic solutions are optimized for Intel architecture-based platforms. One of the most important results of this collaboration is BEA WebLogic JRockit Java Virtual Machine (JVM), which enables industry-leading performance for Java applications on Intel architecture.

JRockit JVM was built from the ground up for enterprise Java applications and large-scale computing environments running on Intel architecture. It is tightly integrated into BEA WebLogic Service Delivery and provides a variety of progressive optimization features that enable it to automatically deliver the best possible performance without a lot of manual configuration or tuning.

JRockit includes unique management tools, which allow operations staff to monitor health and analyze workload characteristics and JVM performance. With these tools, the JVM is no longer a black box, but can be managed as a vital component of the overall solution architecture. The JRockit Management Console, Runtime Analyzer, and Monitoring and Management APIs give developers and system administrators an unparalleled level of realtime visibility and control, enabling them to tune application performance and ensure system health as usage patterns and business conditions change.

Intel and BEA continue to optimize and extend JRockit JVM, and to enhance the value and performance of the combined hardware and software platform. They also offer integrated support services, through BEA Professional Services, Intel® Solution Services and a variety of leading third-party solution integrators. This support is a significant advantage. It accelerates deployment and helps to ensure comprehensive, integrated solutions that take full advantage of price and performance benefits at both the hardware and software level. For more information, visit the Intel & BEA Alliance Web site at:

<http://www.intel.com/business/bss/solutions/alliances/bea/>

CONCLUSION

In today's hyper-competitive telecommunications environment, the ability to quickly deliver innovative services is essential for generating new revenue streams and enhancing subscriber loyalty. Traditional approaches involve proprietary, network-specific platforms that are difficult to integrate, especially for data and voice/data services that require real-time interactions among multiple services, platforms, support systems and vendors.

BEA WebLogic Service Delivery running on Intel architecture-based platforms offers a standards-based solution that is far more modular, adaptable, scalable and manageable. At the software level, it provides a unified and extensible service delivery platform that abstracts the complexity of the network, and enables the rapid development and integration of new services. It can deliver immediate benefits in time-to-revenue and TCO, and these benefits will increase dramatically over time as a growing foundation of reusable software components enables faster development and integration of new services.

At the hardware level, Intel Itanium 2 and Intel Xeon processor-based systems deliver industry-leading performance for both 64-bit and 32-bit implementations, using standards-based platforms that are easier to deploy, scale, and manage than comparable RISC-based systems. BEA WebLogic JRockit JVM and the ongoing collaboration between Intel and BEA help to ensure optimized performance and integrated support that accelerate integration and reduce total costs. As telecommunications service requirements continue to escalate, BEA WebLogic Service Delivery running on Intel architecture will deliver increasing benefits, by enabling rapid service delivery with substantial savings.

1. Intel® Extended Memory 64 Technology (Intel® EM64T) requires a computer system with a processor, chipset, BIOS, OS, device drivers and applications enabled for Intel EM64T. Processor will not operate (including 32-bit operation) without an Intel EM64T-enabled BIOS. Performance will vary depending on your hardware and software configurations. Intel EM64T-enabled OS, BIOS, device drivers and applications may not be available. Check with your vendor for more information.

APPENDIX

A. BEA WebLogic Service Delivery Partners

Aepona

The Causeway product suite includes a network-based OSA/Parlay Gateway and distributed client, along with a set of feature-rich Parlay applications.

<http://www.aepona.com>

Appium Technologies

The Telecom Application Server (TAS) plus related development and testing tools provide a carrier-grade distributed execution environment supporting a broad range of communication applications.

<http://www.appium.com>

Elata

The senses product is a mobile subscriber management and content delivery system targeting multiple types of content, including wireless Java (J2ME), MMS, and SMS ring tones.

<http://www.elata.com>

HP OpenCall Media Platform

OpenCall Media Platform is a highly scalable, carrier-grade voice service platform that enables the rapid development and secure deployment of new generation messaging, portals and enhanced voice-enabled interactive services.

www.hp.com/go/opencall

Incomit

The Application and Partner Platform includes Application Hub, OSA Gateway and Network Gatekeeper. Together, these applications provide a single access point for the development and control of both internal and third party applications.

<http://www.incomit.com>

MobileAware

The Everix Multi-Channel Platform provides components and tools for device detection and content transformation, allowing the creation of multi-channel Web applications.

<http://www.mobileaware.com>

OpenCloud

Rhino is a carrier-grade Service Logic Execution Environment supporting the JAIN SLEE specification.

<http://www.opencloud.com>

SandCherry

The SoftServer platform is an application and resource broker for voice and multimodal (voice plus data) applications. Tools such as AppTuner, AppDev VXML, and AppRun VXML support the development and testing of Java voice applications.

<http://www.sandcherry.com>

Ubiquity

Ubiquity provides a carrier-grade SIP application server development and deployment solution.

<http://www.ubiquity.net>

Ulticom

Signalware includes a range of products supporting the development of applications using the SS7, SIGTRAN, SIP, and related protocols.

<http://www.ulticom.com>

Volantis

Multi-Channel Server (MCS) and associated products support the creation of multi-channel applications by dynamically integrating input sources and delivering optimized output to target devices.

<http://www.volantis.com>

B. Additional Resources

- The Intel & BEA Alliance:
 - <http://www.intel.com/business/bss/solutions/alliances/bea/>
 - <http://www.bea.com/intel/collateral.htm>
- BEA: www.bea.com
 - o BEA WebLogic Platform:
 - <http://dev2dev.bea.com/products/wlplatform81/index.jsp>
 - o BEA WebLogic JRockit JVM:
 - <http://dev2dev.bea.com/products/wljrockit70/index.jsp>
 - o Linux Resource Center:
 - <http://www.bea.com/framework.jsp?CNT=index.htm&FP=/content/solutions/resource/linux/>
- Intel: www.intel.com
 - o Intel Architecture-based server solutions:
 - <http://www.intel.com/business/bss/products/server/index.htm>
 - > Intel Itanium 2 processor-based servers:
 - <http://www.intel.com/business/bss/products/server/itanium2/index.htm>
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BEA Systems, Inc.
2315 North First Street
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Intel Corporation
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Santa Clara, CA 95052-8119
U.S.A.

General Information:
408-765-8080

Customer Support:
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