



# IBM WebSphere Application Server for z/OS , V8.5 delivers a faster, more flexible development environment along with new Intelligent Management capabilities for enhanced resiliency

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## At a glance

IBM® WebSphere® Application Server is the leading open standards-based application foundation, offering accelerated delivery of innovative applications and unmatched operational efficiency, reliability, administration, security, and control.

Enhancements in V8.5:

- The new Liberty profile option is a highly composable, fast to start, and ultra lightweight profile of the application server and is optimized for developer and operational productivity for web applications.
- The Liberty profile on z/OS® includes optional extensions for active exploitation of z/OS services and tight platform integration.
- Application Edition Management enables interruption-free application rollout. Applications can be upgraded without incurring outages to your end users.
- Health Management monitors the status of your application servers and is able to sense and respond to problem areas before end users suffer an outage. Problem areas include increased time spent on garbage collection, excessive request timeouts, excessive response time, excessive memory, and much more.
- Intelligent Routing improves business results by ensuring priority is given to business critical applications. Requests are prioritized and routed based upon administrator defined rules.
- Dynamic Clustering can dynamically provision and start or stop new instances of application server Java™ Virtual Machines (JVM) based on workload demands. It provides the ability to meet Service Level Agreements when multiple applications compete for resources.
- WebSphere Batch is enhanced with enterprise level capabilities to leverage your existing Java online transaction processing (OLTP) infrastructure to support new Java batch workloads. Java batch applications can be executed across multiple Java Enterprise Edition (Java EE) environments.
- IBM WebSphere SDK Java Technology Edition V7.0.
- Web 2.0 and Mobile Toolkit provide an evolution of the previous Feature Pack.
- Leveraging and integration with unique System z® and z/OS platform strengths to deliver cost effective innovative applications.

For ordering, contact your IBM representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: LE001).

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## Overview

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Your business requires fast, flexible, and efficient application development solutions paired with leading service-oriented architecture (SOA) runtime environments to succeed in today's dynamic and increasingly competitive marketplace. IBM WebSphere Application Server has provided industry leading solutions for the past 14 years. WebSphere Application Server for z/OS, V8.5 continues that tradition with breakthrough advances in developer productivity and application server resiliency.

For developers and businesses that need a lightweight, simple to use and yet powerful application server for increased developer productivity and for use as a lightweight production server for application workloads that do not require the full Java Enterprise Edition (Java EE) programming model, WebSphere Application Server for z/OS, V8.5 provides a simplified and lightweight runtime for web applications. Extremely fast restart times coupled with its small size and ease of use make the Liberty profile a great option for building web applications that do not require the full JEE environment of traditional enterprise application server profiles. It is also a great option for production servers where minimizing resource utilization is a primary requirement. The Liberty profile on z/OS delivers optional z/OS specific extensions that leverage z/OS quality of service capabilities, such as transaction management, security, and workload management.

Highlights for developers include:

- The new lightweight Liberty profile
- Developer tool options to match project development needs
- Support for Java 7 and OSGi
- Enhanced Migration Toolkit support
- Support for the Web 2.0 and Mobile Toolkit

For administrators and businesses that need better total cost of ownership through management efficiency and performance, the ability to respond quickly to changes in the business, or achieve simplicity and flexibility in evolving to next generation application server environments, WebSphere Application Server for z/OS, V8.5 delivers new Intelligent Management capabilities that extend the traditional application server with technologies such as enhanced resiliency, virtualization, and enterprise Java batch processing. Autonomic capabilities are provided to sense and respond to problems within the application server and autocorrect or route around these problems before end users experience an outage. Highlights for administrators include:

- Application Edition Management
- New Intelligent Routing capabilities
- Application server Health Management
- Dynamic Clustering
- WebSphere Batch enhancements

While delivering the same programming model and standards support as the rest of the WebSphere Application Server V8.5 family, WebSphere Application Server for z/OS, V8.5 leverages the proven reliability, scalability, and security of the System z and z/OS platforms to ensure the highest qualities of service. Some of the z/OS specific capabilities include:

- Exploitation of System z Parallel Sysplex® for scalability and availability
- z/OS Workload Management (WLM) integration
- Optimized Local Adapters for efficient access to collocated applications
- Secure cross memory communications
- Integration with z/OS Secure Access Facility (SAF)

- Use of z/OS Resource Recovery Services (RRS) for transactional integrity
- Optimized processing via System z Application Assist Processor (zAAP)

For businesses that need to build, deploy, and manage secure and portable innovative applications that run on a multitude of mobile, server, and desktop systems, WebSphere Application Server is the flexible and efficient SOA application platform of choice.

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## Key prerequisites

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WebSphere Application Server for z/OS, V8.5 requires z/OS V1.11 or later. For details, refer to the [Hardware requirements](#) and [Software requirements](#) sections.

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## Planned availability date

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June 15, 2012

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## Description

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IBM WebSphere Application Server is a proven, high-performance transaction engine that can help you build, run, integrate, and manage dynamic business applications. WebSphere Application Server for z/OS, V8.5 introduces exciting new options for the development community with the new lightweight Liberty profile option and a broad range of development tooling options. Operations are significantly enhanced with new Intelligent Management capabilities that minimize end-user outages and maximize operations monitoring and control of the production environment.

### **Fast, flexible, and simplified**

WebSphere Application Server for z/OS, V8.5 delivers breakthrough new options for application development and smaller simpler production server deployments. Developers gain a significant advantage with WebSphere Application Server profiles tailored specifically to the developer experience as well as enablement of a broad range of industry-standard tooling options.

### **New Liberty profile: a lightweight application foundation**

WebSphere Application Server includes the Liberty profile which is optimized for developer productivity and web application development. Its incredibly fast restart time, small size, and ease of use, makes the Liberty Profile a great option for developers building applications that do not require the full Java Enterprise Edition (Java EE) environment of traditional enterprise application server profiles.

### **The Liberty profile**

Liberty profile provides a simplified and lightweight development and application-serving environment for web, OSGi, and mobile applications. Key benefits include, but are not limited to, the following capabilities:

- Extremely fast startup. Liberty profile is designed to start up in under five seconds.
- Simplified configuration for quick time to productivity.
- Java and OSGi application deployment support for web applications.
- Integration with System Authorization Facility (SAF) registry support on z/OS.
- Deployment as a package of an application and configured server.
- Managed, centralized deployment to many nodes of a packaged application and server.
- Availability of Eclipse plug-ins for broad tooling support.

- Platform support for distributed platforms, z/OS, and Macintosh operating system (development only).
- Simplified single process execution on z/OS results in improved runtime performance.
- Includes the capabilities that are needed by the application that it serves keeping each server small and agile.

The Liberty profile on z/OS includes optional extensions for active exploitation of z/OS services and tight platform integration. This enables a fit for purpose integration with z/OS services such as security, transactional management, and workload management to help meet the quality of service requirements of your application.

### **Installation and deployment of the Liberty profile**

The Liberty profile enables flexible installation options. While the initial install of the Liberty profile on z/OS is done via the traditional IBM Installation Manager, subsequent deployment installs can be achieved via compressed files depending upon your requirements. WebSphere Application Server for z/OS provides the ability to package the server runtime, configuration, and applications into a compressed file that can be deployed to additional server environments, thereby enabling a portable install for the Liberty profile on z/OS. As for deployment, the Job Manager optionally provides the ability to package Liberty profile server runtime environments, configurations, and applications as well as distribute and deploy Liberty profile server applications, and start embedded profile packages. Administration through the Job Manager provides the following key features:

- Support for central administration through Job Manager. You can submit Job Manager jobs that support the full lifecycle of Liberty profile server resource deployment from initial install, to updates, to uninstall. A Deployment Manager is not required, although you can use the Job Manager function available on a Deployment Manager to administer Liberty profile servers and their resources.
- Quick installation of the Liberty profile. You can extract the Liberty profile server resource and simply run the install Liberty profile server resource job. There is no requirement to run a formal installation tool, such as Installation Manager, to use Liberty profile server resources. Liberty profile server resources are packaged as compressed files that are ready for use after extraction.
- Support for flexible sharing of resources such as a software development kit (SDK), runtime binary files, server configuration, and application binary files among many server instances.
- Non-destructive update enables easy installation of new versions of any resource. You can switch easily between old and new resources, or run concurrent versions of resources.
- No requirement for agent on target hosts, which reduces administration overhead costs.
- The Liberty profile is built on OSGi technologies, and runs on a wide range of supported Java Runtime Environments (JREs). For more information about supported Java environments, and where to get them, see "Minimum supported JDK levels" in the Information Center.

### **Integrated tools**

- IBM WebSphere Application Server Developer Tools for Eclipse, V8.5 is a lightweight set of tools for developing, assembling, and deploying Java EE, OSGi, Web 2.0 and mobile applications to WebSphere Application Server, including the Liberty profile.
- You can accelerate developer productivity through integrated and optimized developer tooling. Rational® Application Developer V8.5, separately available, or available in the WebSphere Tools bundles, provides a complete environment for enterprise development for Java, Java EE, web, web services, SOA, OSGi, and Portal designers and developers. Use this environment to develop, assemble, and deploy your applications.
- Easily migrate your existing applications from older WebSphere Application Server releases or even from non-IBM application servers, such as Tomcat, JBoss, and WebLogic Server, using the Application Migration Toolkit, which is

separately available via web download. This tool programmatically scans your applications and identifies changes that are required. In many cases, the tool can automatically make the required changes to ease the migration process and speed time to value.

- In addition, the WebSphere Application Server Tools Editions are refreshed with the latest versions of the application server and associated tools. These packages provide tooling and runtime bundles that deliver a full solution regardless of the application development environment you have deployed.

### **Enterprise JavaBeans™ (EJB) support in OSGi applications**

Take advantage of enhanced modular application development by assembling OSGi applications from reusable bundles that contain EJB assets. The enterprise beans in your OSGi bundles can be developed from scratch, or you can include existing EJB assets and migrate them to use OSGi modularity with minimal code changes. Stateful, stateless, and singleton enterprise beans are supported.

Your OSGi application can also contain message-driven beans. You deploy and configure an OSGi application that contains EJBs in a similar way to deploying and configuring a Java 2 Platform Enterprise Edition (J2EE) enterprise application, by using wsadmin or the administrative console.

### **Web 2.0 and Mobile Toolkit**

The previous Feature Pack is now included within the core WebSphere Application Server product. This toolkit provides developers with ready-to-use components to extend service-oriented architecture (SOA) by connecting web services, SOA services, and Java EE objects into interactive desktop web and mobile web user interfaces. With this toolkit, applications developed initially for desktop browsers can now be adapted and deployed to mobile devices, such as smart phones and tablets.

### **Intelligent Management and enhanced resiliency**

WebSphere Application Server for z/OS, V8.5 delivers industry-leading levels of resiliency and availability. New Intelligent Management capabilities deliver application availability, elasticity, and qualities of services programmatically instrumented and executed to ensure the highest possible levels of end user availability. Additional resiliency capabilities help to drive down total cost of ownership while improving overall qualities of service.

### **Intelligent Management**

Intelligent Management capabilities extend the traditional application server with new technologies to enhance resiliency and virtualization capabilities. Autonomic capabilities are provided to sense and respond to problems within the application server and autocorrect or route around these problems before end users experience an outage. Previously, these enhanced resiliency capabilities were available separately by using WebSphere Virtual Enterprise. They are now included within the WebSphere Application Server for z/OS itself.

Highlights:

- Application Edition Management enables interruption-free application rollout. Applications can be upgraded without incurring outages to your end users.
  - Upgrade applications without interruption
  - Deploy new applications without jeopardizing application or service availability
  - Coordinate activation of application versions and routing of requests to the application
  - Test final preproduction level of an application version with a select group of users
- Health Management monitors the status of your application servers and is able to sense and respond to problem areas before end users suffer an outage.
  - Proactively deal with application and application infrastructure issues before they become acute problems

- Monitor health conditions of your infrastructure and execute associated corrective actions
- New Intelligent Routing improves business results by ensuring priority is given to business-critical applications. Requests are prioritized and routed based upon administrator defined rules.
  - Manage in-bound transaction (workload) requests in real time
  - Route work to the application server that can do it best
  - Streamline processing through the system for higher priority requests
  - Ensure that in-bound requests do not overwhelm backend application resources
- Dynamic Clustering can proactively provision, and start or stop new instances of application server Java Virtual Machines (JVMs) based on workload demands. WebSphere Application Server for z/OS, V8.5 delivers new workload elasticity for MQ-driven workloads, along with existing elasticity support for HTTP/S and SIP. It provides the ability to meet Service Level Agreements when multiple applications compete for resources.
  - Allows workloads to be classified, prioritized, and intelligently routed
  - Enables application performance monitoring
  - Can make resource adjustments, if needed, to consistently achieve service policies

### **Messaging infrastructure resiliency enhancements**

- Improvements to the recovery of messaging engine errors. When a recoverable database error is detected by the High Availability Manager, the messaging engine is stopped and the standby messaging engine is started automatically. The other applications running in the application server are not affected by the failure of the messaging engine.
- Enables the messaging engine to restart after a failure. When a messaging engine fails due to recoverable database problems, it is disabled and fails over to another messaging engine in the cluster.
- Improvements to service integration bus performance; improved messaging engine startup time by loading the destinations concurrently in a multicore architecture.
- Recovery of the messaging engine confirmation from the message store. With the new recoverMEConfig command, the recovery of the persistent data of the messaging engine from the message store is made possible if the configuration data on which the previous messaging engine was running is not available.

### **Enhanced memory leak detection and protection**

WebSphere Application Server provides top down pattern-based memory leak detection, prevention, and action by watching for suspect patterns in application code at run time. WebSphere Application Server has a robust means of protection against memory leaks when stopping or redeploying applications. It monitors application and module activity, and performs diagnostic actions when an application or an individual module stops. This feature helps by increasing application server availability.

### **Improved operations, security, and control**

New and improved capabilities in WebSphere Application Server for z/OS, V8.5 include:

- **Support for IBM WebSphere SDK Java Technology Edition V7.0.0**  
IBM Software Development Kit (SDK) provides a full-function SDK for Java that is compliant with the Oracle Java Platform, Standard Edition (Java SE) 7 application programming interfaces (APIs). With IBM WebSphere SDK Java Technology Edition V7.0.0, you can develop and deploy Java applications at the Java 7 API level and continue the "write once, run anywhere" Java paradigm at the Java

API level. The SDK contains the Java application Runtime Environment and other tools that enable developers to create Java applications.

WebSphere Application Server supports IBM WebSphere SDK Java Technology Edition V7.0.0 as a pluggable JDK. Java EE 6 is installed with the product and used by default. You can optionally install and enable Java 7 support.

- **Automatic Resource Management (ARM) with Java 7.0**

ARM is a set of features in Java V7.0 in which the Java framework will automatically close statements and connections to external resources for you, which can alleviate problems with error handling and resource control in your applications. As a result, your applications can focus less on resource management tasks, and you can optimize their logic for meaningful transactions.

- **WebSphere Batch enhancements**

WebSphere Batch offers an enterprise level managed batch execution environment that enables the entry, execution, and management of Java batch processing. It provides an infrastructure for batch processing to allow sharing of business logic with online transaction processing (OLTP) applications. This helps to lower cost by reducing risk and management effort, supplies an "always-on" business experience by eliminating offline batch windows, and delivers enterprise qualities of service required by mission-critical batch applications. Batch jobs and online transaction processing can execute concurrently. Previously, these enhanced WebSphere Batch capabilities were available separately by using WebSphere Compute Grid. They are now included within the WebSphere Application Server itself. WebSphere Batch highlights include:

- End-to-end batch management of jobs running across disparate execution environments
- An optimal OLTP uptime experience through continuous interleaving of batch and interactive (OLTP) processes
- Parallel processing using Parallel Job Manager, where large problems can be partitioned, governed, and processed in parallel across a collection of server resources while hiding the complexities of multithreading and management
- Near real-time batch processing with ad-hoc and event-driven batch invocation, in addition to scheduled batch invocation
- Integration with enterprise schedulers such as Tivoli® Workload Scheduler
- Goal oriented Service Level Agreement (SLA) management via workload manager integration
- The ability to run COBOL applications for both batch and OLTP from within WebSphere Application Server for z/OS

- **Configuring bean security in the OSGi Blueprint XML file**

You can configure bean security in the Blueprint XML file by including an *access-constraint* element in a bean declaration. Only users that are in the role specified by the *access-constraint* element can access the methods of the bean.

- **High Performance Extensible Logging (HPEL) log viewer tool enhances filtering using log and trace record extensions**

Use the LogViewer command-line tool to filter records based on the content of log and trace record extensions. The application server automatically creates an *appName* extension for each log and trace record related to a Java EE application, indicating the name of that application. The application server also automatically creates a *request ID* extension when cross component trace is enabled for each log and trace record created during the processing of certain types of requests (for example, HTTP or JMS requests), indicating the unique ID of that request. You can add custom extensions to HPEL log and trace entries using the *LogRecordContext* API.

- **Cross Component Trace (XCT)**

XCT enables correlation of log and trace entries. Use the cross component trace facility to identify the root cause of problems across components. XCT annotates log and trace entries so that log entries that are related to a request that is serviced by more than one thread, process, or even server are identified as

belonging to the same unit of work. This enhancement enables administrators and support teams to follow the flow of a request from end-to-end as it traverses thread or process boundaries.

- **Improved troubleshooting using IBM Support Assistant Data Collector**

The IBM Support Assistant Data Collector for WebSphere Application Server tool focuses on automatic collection of problem data. It also provides symptom analysis support for the various categories of problems encountered by IBM software products. Information pertinent to a type of problem is collected to help identify the origin of the problem under investigation. The tool assists you by reducing the amount of time it takes to reproduce a problem with the proper RAS tracing levels set, as well as by reducing the effort required to send the appropriate log information in to IBM Support.

- **Enhanced administrative audit options**

WebSphere Application Server for z/OS, V8.5 enables you to audit any changes made to your application server configuration using repository checkpoints. When enabled, a security audit record is created for every change to your configuration. Repository checkpoints represent saved images of the repository before configuration changes are made. You can configure a checkpoint to back up copies of files from the master configuration repository. A full checkpoint is a complete copy of the entire configuration repository. A delta checkpoint is a subset snapshot of the configuration repository that is made when you change a product configuration. Use a checkpoint to restore the configuration repository back to a prior state.

## **Accessibility by people with disabilities**

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A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

[http://www.ibm.com/able/product\\_accessibility/index.html](http://www.ibm.com/able/product_accessibility/index.html)

## **Section 508 of the US Rehabilitation Act**

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WebSphere Application Server for z/OS, V8.5 is capable as of June 15, 2012, when used in accordance with IBM's associated documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it.

## **Value Unit-based pricing**

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Value Unit pricing for eligible IBM System z IBM International Program License Agreement (IPLA) programs enables a lower cost of incremental growth and enterprise aggregation. Each System z IPLA product with Value Unit pricing has a single price per Value Unit and a conversion matrix, called Value Unit Exhibit, for converting from some designated measurement to Value Units. Most commonly, Millions of Service Units (MSUs) is the measurement designated by IBM to be converted to Value Units. Some other measurements are engines or messages. Since MSUs are the most common measurement, that measurement will be used for the remainder of this description.

Value Unit pricing offers price benefits for you. For each System z IPLA program with Value Unit pricing, the quantity of that program needed to satisfy applicable IBM terms and conditions is referred to as the **required license capacity**. Each of the various Value Unit Exhibits stipulate that the larger your required license capacity, the fewer Value Units per MSU you will need. Value Unit Exhibits are uniquely identified by a three digit code and referred to using the nomenclature VUExxx, where xxx is the three digit code.

Subsequent acquisitions of Value Unit priced programs offer additional price benefits. The quantity of each System z IPLA program that you have acquired is referred to as **entitled license capacity**. If you wish to grow your entitled license capacity for a



System z IPLA program, the calculation to determine additional needed Value Units is based upon the number of Value Units already acquired.

For each System z IPLA program with Value Unit pricing, you should:

- Determine the required license capacity, in MSUs
- Aggregate the MSUs across the enterprise
- Convert the total MSUs to Value Units, using the applicable Value Unit Exhibit
- Multiply the price per Value Unit by the total number of Value Units to determine the total cost

To simplify conversion from the designated measurement to Value Units or vice-versa, use the Value Unit Converter Tool. For additional information or to obtain a copy of the Value Unit Converter Tool, visit the Value Unit Converter Tool website

<http://ibm.com/zseries/swprice/vuctool>

Note that Value Units of a given product cannot be exchanged, interchanged, or aggregated with Value Units of another product.

To determine the required license capacity for the System z IPLA program you selected, refer to the [Terms and conditions](#) section.

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## Product positioning

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The WebSphere Application Server family offers multiple configuration options and support for multiple business models and deployment platforms. It also supports a wide range of scenarios, from projects with no upfront budget, to simple administration of a single server environment, to a clustered, highly available, high-volume environment with Intelligent Management services.

WebSphere Application Server V8.5 configurations are built on a common server foundation that delivers the same Java EE and broad programming model support, and proven transactional engine, with increasingly higher qualities of service available across product configurations. Furthermore, the new Liberty profile is included across the various configurations delivering a highly composable, fast to start and ultra lightweight profile of the application server optimized for developer and operational productivity for web applications. This offers unparalleled flexibility to incrementally add higher quality of service to applications as business needs change without the cost of rearchitecting, reprogramming or migrating to different technology bases.

### Configuration options

#### **WebSphere Application Server - Express® V8.5**

An affordable, ready-to-go application foundation for single server, smaller scale deployments of dynamic web applications, which can be effortlessly migrated to more advanced versions of the WebSphere Application Server family as business needs change. Centralized administration of WebSphere Application Server - Express is available through the Flexible Management feature of WebSphere Application Server Network Deployment. WebSphere Application Server - Express is limited to single-server implementations and up to a maximum of 480 Processor Value Units per server.

#### **WebSphere Application Server for Developers V8.5**

The optimal development environment for building and testing applications on a developer's desktop, which will eventually run on WebSphere Application Server in production. Licensed for development use, WebSphere Application Server for Developers offers functional equivalence to the core WebSphere Application Server configuration to help developers reduce testing effort, develop with confidence, and deliver innovative applications faster. This configuration is also available at

no charge, with optional paid support, in order to lower the barrier to entry for developers building for WebSphere Application Server environments.

### **WebSphere Application Server V8.5**

This application foundation is tailored for single server to moderately sized configurations of departmental or large-scale, dynamic web applications requiring web tier clustering and failover across up to five application server instances, and a variety of pricing alternatives, including socket-based pricing. Centralized administration of WebSphere Application Server is available through the Flexible Management feature of WebSphere Application Server Network Deployment.

### **WebSphere Application Server Network Deployment V8.5**

For enterprises that need near-continuous availability, advanced management, and automated performance optimization for their mission-critical applications, WebSphere Application Server Network Deployment delivers an environment that is highly available, dynamically scalable, and easily managed. Building on the core WebSphere Application Server configuration, WebSphere Application Server Network Deployment offers:

- World-class clustering and high-availability management to help eliminate the cost of system downtime
- New Intelligent Management capabilities deliver breakthrough levels of resiliency and reliability (including capabilities formerly available from WebSphere Virtual Enterprise)
- Enterprise level Java batch capabilities, such as parallel job processing, job checkpoints and restart, workload management, and shared OLTP and batch processing
- Edge components, which offer sophisticated load balancing, caching, and centralized security for enhanced performance at the edge of the network
- Advanced centralized management and administration to make management of more complex environments less time-consuming and resource-consuming
- Enterprise proven leading security capabilities to safeguard your business
- Industry-leading performance that maximizes business competitiveness while minimizing total cost of ownership (TCO)

### **WebSphere Application Server for z/OS, V8.5**

This application foundation is optimized to take advantage of the unique qualities of service of IBM System z hardware and the z/OS operating system. WebSphere Application Server for z/OS offers functional equivalence to WebSphere Application Server Network Deployment, along with additional capabilities such as prioritized workload management, advanced native transaction integration with DB2®, MQ, CICS®, IMS™, and WOLA for z/OS in the WebSphere Application Server Full profile, and advanced native transaction integration with DB2 in the case of the Liberty profile, intense scalability, and data and workload collocation, made possible through tight integration with IBM System z and z/OS.

### **WebSphere Application Server Tools Editions**

You get three new bundled offerings that accelerate development and deliver high quality, innovative applications for WebSphere Application Server:

- WebSphere Application Server - Tools Edition
- WebSphere Application Server Network Deployment - Tools Edition
- WebSphere Application Server for Developers - Tools Edition for Eclipse

The WebSphere Application Server - Tools Edition and the WebSphere Application Server Network Deployment - Tools Edition bring together a server version of WebSphere Application Server (the leading open standards-based application foundation offering), and IBM Rational Application Developer (the industry leading

and top rated development environment) to provide organizations with a complete solution to develop, deliver, and manage high-quality enterprise applications.

WebSphere Application Server for Developers introduces WebSphere Application Server Developer Tools for Eclipse, which is a subset of Rational Application Developer plug-ins that can easily be installed on top of your existing Eclipse environment, and provides a lightweight set of tools for developing, assembling, and deploying Java EE, OSGi, Web 2.0, and mobile applications to a WebSphere Application Server environment. The content of this bundle is offered as a no-charge download with an optionally purchased support package.

## **Related products**

### **WebSphere Application Server Hypervisor Edition**

WebSphere Application Server Hypervisor Edition includes all the robust features of WebSphere Application Server and is optimized to run in server virtualized environments. Designed to reduce installation and configuration time, WebSphere Application Server Hypervisor Edition helps reduce time-to-value during development, test, and production of WebSphere based applications. Each WebSphere Application Server Hypervisor Edition offering is a preconfigured package that integrates WebSphere Application Server, IBM HTTP Server, and an operating system compatible with each supported hypervisor.

Enhanced operational cost reduction and business agility can be gained through the use of WebSphere Application Server Hypervisor Edition with IBM Workload Deployer, a cloud computing appliance that manages IBM products in a cloud environment. It dispenses patterns of virtual images into a pool of virtualized resources running a supported hypervisor.

### **WebSphere Application Server Community Edition V3.0**

WebSphere Application Server Community Edition V3.0 delivers a lightweight Java EE application server built on open-source Apache Geronimo technology. WebSphere Application Server Community Edition is backed by optionally available, world-class support from IBM, ensuring that you receive assistance and timely problem resolution from the IBM team of expert support professionals and developers. Simple socket-based pricing is also optionally available.

## **WebSphere Adapters**

WebSphere Adapters help accelerate business integration projects with rapidly deployable, enterprise-ready connections based on best practices. The WebSphere Adapters portfolio provides a comprehensive set of capabilities to reuse and extend your packaged and legacy applications. IBM WebSphere Adapters includes enhanced adapters for SAP software, Siebel Business Applications, Oracle E-Business Suite, JD Edwards EnterpriseOne, and PeopleSoft Enterprise. A development and unit testing license for WebSphere Adapters is provided with WebSphere Application Server to speed application integration and development.

A separate license entitlement for the appropriate WebSphere Adapter must be purchased when deploying WebSphere Adapter components to WebSphere Application Server for production use.

## **WebSphere Real Time**

WebSphere Real Time is a Java Runtime Environment (JRE) designed to provide more consistent performance for Java applications. It enables you to develop applications with low latency and highly predictable response times. A development and unit testing license to WebSphere Real Time is provided with WebSphere Application Server. A separate license entitlement for WebSphere Real Time must be purchased to use the Real Time capability in a production environment.

## Rational Application Developer

Rational Application Developer is the development environment that is optimized for WebSphere Application Server V8.5 and the Liberty profile, to help improve the productivity of your development team, from novice developers just getting up to speed, to experienced senior professionals.

Rational Application Developer provides capabilities to accelerate development of applications that leverage the latest programming models, such as Java EE 6, Java 7, SOA, OSGi, Cloud, Web 2.0, Mobile Web, Portal, Service Component Architecture (SCA), and WebSphere Batch, and includes tight integration with application server test environments to test, debug, fix, and maintain in an environment that mimics your production systems.

Rational Application Developer also provides developer test and analysis tools to ensure delivery of high-quality applications that are easily maintained to provide value and time savings across the entire life span of your software projects.

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## Reference information

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For information about WebSphere Application Server V8.5 for non-System z environments, refer to Software Announcement [212-109](#), dated April 24, 2012.

For product information about IBM Rational Application Developer V8.0.3, refer to Software Announcement [211-204](#), dated May 31, 2011.

For information on the web

- WebSphere Application Server family, visit  
<http://www.ibm.com/software/webservers/appserv>

For specific information about the IBM WebSphere Application Server for z/OS, visit

[http://www.ibm.com/software/webservers/appserv/zos\\_os390/](http://www.ibm.com/software/webservers/appserv/zos_os390/)

The WebSphere Application Server zone of Developer Domain has valuable information. Visit

<http://www7b.boulder.ibm.com/wsdd/zones/was/>

- The Washington Systems Center Techdocs site has valuable information. Visit  
<http://www.ibm.com/support/techdocs/atmastr.nsf/Web/Techdocs>
- For z/OS Internet library, visit  
<http://www.ibm.com/servers/eserver/zseries/zos/bkserv/>
- For IBM System z and S/390® e-business that has a wide range of information including the latest announcements, customer success stories, and technical information, visit  
<http://www-03.ibm.com/systems/z/>

## Business Partner information

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If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld ID and password are required (use IBM ID).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=212-106>

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## Program number

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Program number	VRM	Program name
5655-w65	8.5.0	webSphere Application Server for z/OS
5655-F81	1.1.0	webSphere Application Server for z/OS - Software Subscription and Support

## Product identification number

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Program PID number	Subscription and Support PID number
5655-w65	5655-F8

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## Education support

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IBM delivers a comprehensive portfolio of education services to help you successfully deploy and integrate IBM's WebSphere Application and Integration middleware products to their maximum potential.

Education is a key component to ensuring software success. The IBM education team is committed to providing the highest quality education available to help your company prosper in today's competitive marketplace. We take pride in our ability to deliver successful education programs that provide your people with the skills necessary to make your business profitable using IBM software.

The IBM education team works closely with IBM product developers and IBM services organizations to ensure that the courses we offer provide the most up-to-the-minute technical and product information. Our courses place an emphasis on the advanced knowledge and insight that only these sources can provide. We draw from an extensive pool of IBM technical experience in the development of our courses, and pass that knowledge on to our students.

For more information about available education offerings, refer to the website and search on the product name

<http://www.ibm.com/software/education>

Skill-based roadmaps can be found at

<http://www-03.ibm.com/certify/news/20040916.shtml>

IBM Global Services, IT Education Services, provides education to support many IBM offerings. Descriptions of courses for IT professionals and managers are on the IBM IT Education Services website.

<http://www.ibm.com/services/learning/>

Refer to the IBM IT Education Services website for information on course locations and availability dates.

Call IBM Global Services, IT Education Services at 800-IBM-TEACH (426-8322) for catalogs, schedules, and enrollments.

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## Offering Information

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Product information is available via the Offering Information website

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## Publications

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The primary delivery and latest product documentation for IBM WebSphere Application Server for z/OS, V8.5 can be found in the online information center available from the library web page at

<http://www.ibm.com/software/webservers/appserv/was/library/>

PDF versions of the documentation are also available from the preceding Library web page as well as from the IBM Publications Center at

<http://www.ibm.com/shop/publications/order>

Title	Order number
WebSphere Application Server for z/OS, V8.5 Overview	SA32-1086-00
WebSphere Application Server for z/OS, V8.5 Installing your application serving environment	GA32-1069-00
WebSphere Application Server for z/OS, V8.5 Setting up the application serving environment	GA32-1070-00
WebSphere Application Server for z/OS, V8.5 Developing and deploying applications	SA32-1071-00
WebSphere Application Server for z/OS, V8.5 Migrating WebSphere applications	GA32-1072-00
WebSphere Application Server for z/OS, V8.5 Securing applications and their environment	SA32-1073-00
WebSphere Application Server for z/OS, V8.5 Administering applications and their environment	SA32-1074-00
WebSphere Application Server for z/OS, V8.5 Troubleshooting and support	GA32-1075-00
WebSphere Application Server for z/OS, V8.5 Setting up intermediary services	SA32-1076-00
WebSphere Application Server for z/OS, V8.5 Tuning guide	SA32-1077-00
WebSphere Application Server for z/OS, V8.5 Tuning various types of applications	SA32-1090-00
WebSphere Application Server for z/OS, V8.5 Administering WebSphere applications	SA32-1078-00
WebSphere Application Server for z/OS, V8.5 Establishing high availability	SA32-1079-00
WebSphere Application Server for z/OS, V8.5 Establishing high availability services for applications	SA32-1091-00
WebSphere Application Server for z/OS, V8.5 Migrating, coexisting, and interoperating	GA32-1080-00
WebSphere Application Server for z/OS, V8.5 Scripting the application serving environment	SA32-1081-00
WebSphere Application Server for z/OS, V8.5 Scripting various types of applications	SA32-1088-00
WebSphere Application Server for z/OS, V8.5	SA32-1082-00

Securing WebSphere applications	
WebSphere Application Server for z/OS, v8.5 Developing WebSphere applications	SA32-1083-00
WebSphere Application Server for z/OS, v8.5 Monitoring	SA32-1084-00
WebSphere Application Server for z/OS, v8.5 Monitoring various types of applications	SA32-1089-00
WebSphere Application Server for z/OS, v8.5 Troubleshooting WebSphere applications	GA32-1085-00
WebSphere Application Server for z/OS, v8.5 Administering the Intelligent Management Pack	SA32-1092-00
WebSphere Application Server for z/OS, v8.5 Administering batch environments	SA32-1093-00
IBM HTTP Server for WebSphere Application Server, v8.5	SA32-1087-00

The Publications Center is a worldwide central repository for IBM product publications and marketing material. Payment options for orders are accepted with a credit card (in the U.S.) or customer number for 20 countries. A large number of publications are available online in various file formats, and they can all be downloaded by all countries free of charge.

News of many publications may be subscribed to using the My Support link on the IBM Publications Center welcome page.

<http://www.elink.ibm.link.ibm.com/public/applications/publications/cgibin/pbi.cgi>

The following publications are available with your order, through the IBM Publications Center, and on the Library web page at

<http://www.ibm.com/software/webservers/appserv/was/library/>

Title	Order number
WebSphere Application Server for z/OS, v8.5 Program Directory	GI11-9488-00
IBM Installation Manager for z/OS, v1.5.2 Program Directory	GI11-9487-00

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## Technical information

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### Specified operating environment

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#### **Hardware requirements**

For z/OS (31-bit and 64-bit WebSphere Application Server)

- Any hardware that supports z/OS V1.11, or later
- Minimum 3.5 GB (web installation) of available disk space
- Minimum 7 GB (local installation using Installation Manager) to 9 GB (local installation using SMP/E deliverables) of available disk space
- Minimum 1 GB of central storage; 1 GB per running application server recommended

For information on WebSphere Application Server, for z/OS, visit

<http://www.ibm.com/support/docview.wss?rs=180&uid=swg27006921>

## **IBM System z Application Assist Processors (zAAP)**

zAAPs are attractively priced specialty engines that provide a strategic z/OS Java execution and XML parsing environment on z/OS. zAAP can help you strategically integrate and run new Java and XML-based applications with core z/OS business applications and back-end database systems, increasing overall system productivity, and ultimately lower the overall cost of computing for running Java technology-based workloads on the platform.

Although not a hard requirement, WebSphere Application Server for z/OS V8.5 offers full support for zAAPs for its Java-based applications.

The IBM Java Virtual Machine (JVM) processing cycles can be executed on the configured zAAPs with no anticipated modifications to the Java applications. Execution of the JVM processing cycles on a zAAP is a function of the IBM Software Development Kit (SDK) for z/OS, z/OS, and Processor Resource/Systems Manager™ (PR/SM™).

When configured with general-purpose processors within logical partitions running z/OS, zAAPs may help increase general-purpose processor productivity and may contribute to lowering the overall cost of computing for z/OS Java technology-based applications. zAAPs are designed to operate asynchronously with the processors to execute Java programming under control of IBM JVM. This can help reduce the demands and capacity requirements on general-purpose processors, which may then be available for reallocation to other mainframe workloads.

The amount of general-purpose processor savings varies based on the amount of Java application code executed by zAAP. This is dependent upon the amount of Java cycles used by the relevant applications and on the zAAP execution mode that you select.

IBM does not impose software charges on zAAP capacity. Additional IBM software charges apply only when additional general-purpose central processing capacity is used. You are encouraged to contact your specific ISVs and USVs directly to determine if your charges will be affected.

For more details, see the zAAP Redbook at

<http://www.redbooks.ibm.com/abstracts/sg246386.html?Open>

### ***Software requirements***

For information on WebSphere Application Server, for z/OS, visit

<http://www.ibm.com/support/docview.wss?rs=180&uid=swg27006921>

### **Operating system**

- z/OS V1.13 System z (31 bit and 64 bit)
- z/OS V1.12 System z (31 bit and 64 bit)
- z/OS V1.11 System z (31 bit and 64 bit)

### **Databases**

- Apache Derby 10.8 and future releases, mod levels and fix packs
- CICS Transaction Server for z/OS V3.1, and V4.1 and future releases, modification levels, and fix packs
- DB2 9 for z/OS V9.1 and future releases, modification levels, and fix packs
- DB2 10 for z/OS V10.1 and future releases, modification levels, and fix packs
- DB2 Enterprise Server Edition V9.1 and future releases, modification levels, and fix packs
- DB2 Express 9.1 and future releases, modification levels, and fix packs



- DB2 for IBM i V6.1 and V7.1 and future releases, modification levels, and fix packs
- DB2 pureScale® Feature for Enterprise Server Edition V9.8 and future releases, modification levels, and fix packs
- DB2 Workgroup Server Edition V9.1 and future releases, modification levels, and fix packs
- IBM Informix® Dynamic Server 11.10 and future releases, modification levels, and fix packs
- IMS V10, IMS V11, and future releases, modification levels, and fix packs
- Microsoft™ SQL Server Enterprise Edition 2005 and 2008 and future releases, modification levels, and fix packs
- Oracle Database 10g Standard and Enterprise Editions Release 2 and future releases, modification levels, and fix packs
- Oracle Database 11g Standard and Enterprise Editions Release 1 and future releases, modification levels, and fix packs
- Sybase Adaptive Server Enterprise 15.0.3 and future releases, modification levels, and fix packs

### **JDBC drivers**

- Apache Derby 10.8 and future releases, modification levels, and fix packs
- DataDirect Connect for JDBC SQL Server Driver 4.1 and future releases, modification levels, and fix packs
- DB2 Connect™ Enterprise Edition V9.1 and future releases, modification levels, and fix packs
- IBM Data Server Driver for JDBC and SQLJ V3.4, and V4.2 and future releases, modification levels, and fix packs
- IBM Developer Kit for Java JDBC driver V5.4.x, V6.1.x, and V7.1.x, and future releases, modification levels, and fix packs
- IBM IMS JDBC Connector 10 and 11 and future releases, modification levels, and fix packs
- IBM Toolbox for Java and JTOpen JDBC Driver V6.0, and V7.0 and future releases, modification levels, and fix packs
- Informix Java Database Connectivity Driver 3.10.JC1
- Microsoft SQL Server JDBC Driver 2.0, and 3.0 and future releases, modification levels, and fix packs
- Oracle JDBC Driver 11g 11.1 and future releases, modification levels, and fix packs
- Sybase jConnect 6.05 EBF 14466 and future releases, modification levels, and fix packs

### **JMS providers**

- WebSphere MQ for z/OS, V6.0, and V7.0 and future fix packs
- WebSphere MQ V6.0.2, and V7.0 and future fix packs

### **LDAP servers**

#### **LDAP servers using Federated Repository Configuration**

- IBM Lotus® Domino® LDAP Server V7.0 and future releases, modification levels, and fix packs
- IBM Tivoli Directory Server V6.2 and V6.3 and future releases, modification levels, and fix packs
- IBM z/OS Integrated Security Services V1.8 and future releases, modification levels, and fix packs
- Microsoft Active Directory 2008 and future releases, modification levels, and fix packs
- Novell eDirectory 8.7.3 SP9 and future releases, modification levels, and fix packs

- Sun Java System Directory Server 6.1 and future releases, modification levels, and fix packs

### **LDAP servers using standalone LDAP Registry Configuration**

- IBM Lotus Domino LDAP Server 7.0 and future releases, modification levels, and fix packs
- IBM Tivoli Directory Server V6.2 and V6.3 and future releases, modification levels, and fix packs
- IBM z/OS Integrated Security Services V1.8 and future releases, modification levels, and fix packs
- Microsoft Active Directory 2008 and future releases, modification levels, and fix packs
- Microsoft Active Directory Application Mode (ADAM) 1.0 SP1 and future releases, modification levels, and fix packs
- Novell eDirectory 8.7.3 SP9 and future releases, modification levels, and fix packs
- Sun Java System Directory Server 6.1 and future releases, modification levels, and fix packs

### **Security**

- IBM Tivoli Access Manager for e-Business V6.0, and V6.1 and future releases, modification levels, and fix packs

### **Virtualization**

- IBM PR/SM any version and future releases, modification levels, and fix packs
- IBM z/VM® Hypervisor V5.4 and V6.1 and future releases, modification levels, and fix packs

### **Web browsers**

- Microsoft Internet Explorer 8.0 and 9.0 and future fix packs
- Mozilla Firefox ESR 10 and future modification levels, and fix packs

### **Web servers**

- Apache Server 2.2 and future releases, modification levels, and fix packs
- Domino 8.0 and future releases, modification levels, and fix packs
- IBM HTTP Server for i5/OS® any, and future releases, modification levels, and fix packs
- IBM HTTP Server V8.5 and future releases, modification levels, and fix packs
- Microsoft Internet Information Services 6.0, 7.0, and 7.5, and future modification levels, and fix packs
- Sun Java System Web Server 6.1 SP12 and 7.0 Update 1 and future modification levels, and fix packs

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a readme file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only in the English language.

### **Companion products**

IBM Tivoli Composite Application Manager for WebSphere Application Server is offered as a separate download for WebSphere Application Server V8.5.

IBM Tivoli Composite Application Manager for WebSphere Application Server, which was formerly provided within the application server offering, is now made available

as a separate web download from the Integrated Service Management Library as follows

<https://www-304.ibm.com/software/brandcatalog/ismlibrary/>

It provides additional request-based PMI metrics to help you understand the performance of your application server and more quickly identify issues. Also, because it uses the same data collector used by IBM Tivoli Composite Application Manager for Application Diagnostics, which provides advanced monitoring and deep diagnostics capability, it makes upgrade quick and easy for licensed users of that product, and provides further integration with Tivoli's Application Performance Monitoring solutions.

### **Limitations**

The following features are either not supported by WebSphere Application Server V8.5 or are being deprecated in V8.5:

- CEI is being deprecated.
- Dynamic Scripting Feature Pack is not supported in V8.5
- IBM Tivoli Composite Application Manager for WebSphere Application Server, which was formerly provided within the application server offering, is now being made available as a separate web download.

Refer to the Information Center for further details.

### **Planning information**

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WebSphere Application Server for z/OS, V8.5 can be installed independently and will coexist with prior versions of WebSphere Application Server for z/OS.

### **Standby or backup systems**

For programs running or resident on backup machines, IBM defines three types of situations: cold, warm, and hot. In the cold and warm situations, a separate entitlement for the copy on the backup machine is normally not required and typically no additional charge applies. In a hot backup situation, the customer needs to acquire another license or entitlements sufficient for that server. All programs running in backup mode must be solely under the customer's control, even if they are running at another enterprise's location.

As a practice, the following are definitions and allowable actions concerning the copy of the program used for backup purposes.

#### **Cold**

A copy of the program may reside, for backup purposes, on a machine as long as the program is not started. There is no additional charge for this copy.

#### **Warm**

A copy of the program may reside for backup purposes on a machine and is started, but is idling, and is not doing any work of any kind. There is no additional charge for this copy.

#### **Hot**

A copy of the program may reside for backup purposes on a machine, is started, and is doing work. The customer must acquire a license or entitlements for this copy and there will generally be an additional charge.

Doing work, includes, for example, production, development, program maintenance, and testing. It also could include other activities such as mirroring of transactions, updating of files, synchronization of programs, data or other resources (for example, active linking with another machine, program, database, or other resource, and so

on), or any activity or configurations that would allow an active hot switch or other synchronized switch over between programs, databases, or other resources to occur.

In the case of a program or system configuration that is designed to support a high availability environment by using various techniques (for example, duplexing, mirroring of files or transactions, maintaining a "heartbeat," active linking with another machine, program, database, or other resource, and so on), the program is considered to be doing work in the hot situation and a license or entitlement must be purchased.

### **Non-IBM WebSphere back-end servers**

**Edge components:** Users seeking to use Edge components with non-IBM WebSphere back-end servers may be entitled to warranty support for such usage, provided the problem is common to both the IBM WebSphere and non-IBM WebSphere back-end servers or, if otherwise, you agree to recreate the problem in an IBM WebSphere Application Server environment.

**Proxy Server Components:** Users seeking to use Proxy Server components and DMZ Secure Proxy Server components with non-IBM WebSphere back-end servers may be entitled to warranty support for such usage provided the problem is common to both the IBM WebSphere and non-IBM WebSphere back-end servers or, if otherwise, you agree to recreate the problem in an IBM WebSphere Application Server environment.

### **Assembly and Deploy Tooling**

IBM Assembly and Deploy Tools for WebSphere Administration is provided with WebSphere Application Server to rapidly assemble and deploy applications to WebSphere Application Server environments. These tools replace the previously available IBM Rational Application Developer Assembly and Deploy function and are restricted to assembly and deployment usage only.

### **Web 2.0 and Mobile**

The functionality delivered as the Web 2.0 and Mobile Feature Pack is delivered for WebSphere Application Server V8.5 as the Web 2.0 and Mobile Toolkit, and included as an option within the base product itself.

### ***Direct customer support***

Direct customer support is provided by IBM Operational Support Services - SoftwareXcel. This fee service enhances your productivity by providing voice and electronic access into the IBM support organization. IBM Operational Support Services - SoftwareXcel helps answer questions pertaining to usage and suspected software defects for eligible products.

Installation and technical support is provided by Global Services. For more information call 800-IBM-4YOU (426-4968).

For technical support or assistance, contact your IBM representative or visit

<http://www.ibm.com/support>

or contact your IBM representative for additional assistance at 1-800-IBM-SERV (800-426-7378), option #2 for software.

This product delivers functionality, Application Client Container, IBM Assembly and Deploy Tools for WebSphere Administration (IADT), Tivoli Access Manager (TAM), and WebSphere Edge Components on CD-ROM or DVD intended for deployment on distributed (non-z/OS) systems.

These applications are provided with entitlement for software defect support through a renewable support and subscription license for this product. Requests for defect service should be reported through the IBM Call Centers, specifying WebSphere Application Server for z/OS, V8.5.

The IBM Rational Application Developer Standard Edition for WebSphere Software trial product is delivered on DVD. It is intended for deployment on distributed (non-z/OS) systems. This application is provided as a trial program only. The website below describes trial support for Rational Application Developer Standard Edition. Visit

<http://www.ibm.com/developerworks/downloads/r/radse/>

### **Packaging**

Program components are delivered by traditional z/OS fulfillment:

- CBPDO
- ServerPac

All formal publications are delivered via the web.

WebSphere Application Server for z/OS customers will be given an option of how to receive the software:

- Internet delivery of CBPDO and ServerPac, along with electronic images of CDs and DVDs
- Physical delivery of CBPDO and ServerPac, along with physical copies of CDs and DVDs

When electronic delivery is selected, the customer will have the same window of time, two weeks, in which to download the CD/DVD images as the electronic images of the z/OS CBPDO or ServerPac.

WebSphere Application Server V8.5 customers on z/OS also have the option to use compressed product repositories from the product DVDs, rather than installing the initial product repositories using SMP/E. A separate Program Directory documents this form of install.

### **The following materials are included in the product CD and DVD set:**

WebSphere Supplements V8.5

- IBM WebSphere Application Server Web 2.0 and Mobile Toolkit V1.1.0.2
- WebSphere Edge Components V8.5
- IBM Tivoli Access Manager for e-business V6.1.1
- IBM Tivoli Federated Identity Manager for WebSphere Application Server Network Deployment V6.2.2
- IBM Rational Application Developer for WebSphere Software V8.5 Trial
- IBM Assembly and Deploy Tools for WebSphere Administration V8.5
- IBM WebSphere Adapters V7.5.0.1
- IBM Installation Manager V1.5.2
- IBM DMZ Secure Proxy Server V8.5
- IBM Rational Agent Controller V8.5
- IBM WebSphere Application Server for z/OS V8.5 compressed repositories
- IBM WebSphere SDK Java Technology Edition V7.0 compressed repositories

This program, when downloaded from a website, contains the applicable IBM license agreement and License Information, if appropriate, and will be presented for acceptance at the time of installation of the program. For future reference, the license and License Information will be stored in a directory such as LICENSE.TXT.

### **Security, auditability, and control**

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WebSphere Application Server for z/OS, V8.5 provides automated authorization checking and a very strong security implementation for authentication and

authorization. It is also designed to provide authentication and authorization service to clients, automatically checking security credentials of all clients accessing WebSphere Application Server for z/OS services. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

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## Software Services

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IBM Software Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of our lab-based, software services team and the business consulting, project management, and infrastructure expertise of our IBM Global Services team. Also, we extend our IBM Software Services reach through IBM Business Partners to provide an extensive portfolio of capabilities. Together, we provide the global reach, intellectual capital, industry insight, and technology leadership to support a wide range of critical business needs.

To learn more about IBM Software Services or to contact a Software Services sales specialist, visit

<http://www.ibm.com/software/sw-services/>

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## Ordering information

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### **Charge metric**

Program name	Part number or PID number	Charge metric
WebSphere Application Server for z/OS, V8.5	5655-W65	Value Unit

WebSphere Application Server for z/OS, V8.5 is priced per Value Unit.

### **Software Subscription and Support**

The annual price of Software Subscription and Support for WebSphere Application Server for z/OS (5655-F81) depends on the number of Value Unit license entitlements purchased.

### **ServerPacs**

WebSphere Application Server for z/OS, V8.5 can be ordered in a ServerPac, which can include other software products, and WebSphere Application Server for z/OS, V8.5 can also be ordered in a ServerPac alone, with no additional software products.

Production of WebSphere Application Server for z/OS, V8.5 orders will begin on the planned general availability date of June 15, 2012. Production of ServerPac and SystemPac® orders will begin on July 27, 2012. Ship dates for orders will be based on order sequence, Customized Offering selected, production capability, and customer-requested arrival date. Shipments of CBPDO orders will begin one week after general availability. Due to the amount of customization of ServerPac orders, shipments will begin approximately two weeks after general availability. Due to the amount of additional customization of SystemPac orders, shipments will begin approximately four weeks after availability in SystemPac. In all cases, no delivery commitments are to be made to the customer until confirmed arrival dates are in ESW.

The program in this announcement all have Value Unit-Based pricing.

Program Number	Program name	Value Unit Exhibit
5655-W65	WebSphere Application	VUE007

For each System z IPLA program with Value Unit pricing, the quantity of that program needed to satisfy applicable IBM terms and conditions is referred to as the **required license capacity**. Your required license capacity is based upon the following factors:

- The System z IPLA program you select
- The applicable Value Unit Exhibit
- The applicable terms
- Whether your current mainframes are full capacity or sub-capacity

**Value Unit exhibit VUE007**

	MSUs minimum	MSUs maximum	Value Units/MSU
Base	1	3	1
Tier A	4	45	0.45
Tier B	46	175	0.36
Tier C	176	315	0.27
Tier D	316	+	0.2

Value Units for mainframes without MSU ratings:

Hardware	Value Units/machine
MP3000 H30	6
MP3000 H50	8
MP3000 H70	12
ESL models	2

**Ordering example**

The total number of Value Units is calculated according to the following example.

If your required license capacity is 1,500 MSUs for your selected System z IPLA product, the applicable Value Units would be:

Translation from MSUs to value units

	MSUs	*	Value Units/MSU	=	Value Units
Base	3	*	1.00	=	3.00
Tier A	42	*	.45	=	18.90
Tier B	130	*	.36	=	46.80
Tier C	140	*	.27	=	37.80
Tier D	1,185	*	.20	=	237.00
Total	1,500				343.50

When calculating the total number of Value Units, the sum is to be rounded up to the next integer.

**Ordering z/OS through the Internet**

ShopzSeries provides an easy way to plan and order your z/OS ServerPac or CBPDO. It will analyze your current installation, determine the correct product migration, and present your new configuration based on z/OS. Additional products can also be added to your order (including determination of whether all product requisites are satisfied). ShopzSeries is available in the US and several countries in Europe. In countries where ShopzSeries is not available yet, contact your IBM representative (or IBM Business Partner) to handle your order via the traditional IBM ordering process. For more details and availability, visit the ShopzSeries website at

<http://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp>

Program number	Program name
5655-w65	WebSphere Application Server for z/OS, V8.5
5655-F81	WebSphere Application Server for z/OS - Software Subscription and Support

Basic license one-time charge

**Basic license**

**On/Off CoD**

WebSphere Application Server for z/OS, V8.5 is eligible for On/Off CoD with a temporary use charge calculated based on MSUs per-day usage.

Program name: WebSphere Application Server for z/OS, V8.5  
 Program PID: 5655-w65

Entitlement identifier	Description	License option/ Pricing metric
S016MLD	WebSphere Application Server for z/OS, V8.5	Basic OTC, Per MSU-day TUC

Translation from MSUs to Value Units

	MSUs	Value Units/MSU
Base	1-3	1.00
Tier A	4-45	0.45
Tier B	46-175	0.36
Tier C	176-315	0.27
Tier D	316+	0.20

To order, specify the program product number and the appropriate license or charge option. Also, specify the desired distribution medium. To suppress shipment of media, select the license-only option in CFSW.

Program name: WebSphere Application Server for z/OS, V8.5  
 Program PID: 5655-w65

Entitlement identifier	Description	License option/ Pricing metric
S016MLD	WebSphere Application Server for z/OS, V8.5	Basic OTC, per Value Unit

Orderable supply ID	Language	Distribution medium
S017085	English	3590 Tape Cartridge

Subscription and Support PID: 5655-F81

Entitlement identifier	Description	License option/ Pricing metric
S00V3BC	WebSphere Application Server for z/OS S&S	Basic ASC, per Value Unit SW S&S No charge, decline SW S&S Per MSU SW S&S registration

Orderable supply ID	Language	Distribution medium
S00V3BF	English	Hardcopy pub

**Subscription and Support**

To receive voice technical support via telephone and future releases and versions at no additional charge, Subscription and Support must be ordered. The capacity of



Subscription and Support (Value Units) must be the same as the capacity ordered for the product licenses.

To order, specify the Subscription and Support program number (PID) referenced above and the appropriate license or charge option.

IBM is also providing Subscription and Support for these products via a separately purchased offering under the terms of the IBM International Agreement for Acquisition of Software Maintenance. This offering:

- Includes and extends the support services provided in the base support to include technical support via telephone.
- Entitles you to future releases and versions, at no additional charge. Note that you are not entitled to new products.

When Subscription and Support is ordered, the charges will automatically renew annually unless cancelled by you.

The combined effect of the IPLA license and the Agreement for Acquisition of Software Maintenance gives you rights and support services comparable to those under the traditional ICA S/390 and System z license or its equivalent. To ensure that you continue to enjoy the level of support you are used to in the ICA business model, you must order **both** the license for the program **and** the support for the selected programs at the same Value Unit quantities.

### ***Single version charging***

To elect single version charging, you must notify and identify to IBM the prior program and replacement program, and the machine the programs are operating on.

### **Customized Offerings**

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Product deliverables are shipped only via CBPDO, ServerPac, SystemPac.

CBPDO and ServerPac are offered for Internet delivery in countries where ShopzSeries product ordering is available. Internet delivery reduces software delivery time and allows you to install software without the need to handle tapes. For more details on Internet delivery, refer to the ShopzSeries help information at

<http://www.software.ibm.com/ShopzSeries>

You choose the delivery method when you order the software. IBM recommends Internet delivery. In addition to Internet and DVD, the supported tape delivery options for CBPDO, ServerPac, and SystemPac, include:

- 3590
- 3592

Most products can be ordered in ServerPac and SystemPac the month following their availability on CBPDO. z/OS can be ordered via all three offerings at general availability. Production of software product orders will begin on the planned general availability date.

- CBPDO shipments will begin one week after general availability.
- ServerPac shipments will begin two weeks after general availability
- SystemPac shipments will begin four weeks after general availability due to additional customization, and data input verification.

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## **Terms and conditions**

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The information provided in this announcement letter is for reference and convenience purposes only. The terms and conditions that govern any transaction

with IBM are contained in the applicable contract documents such as the IBM International Program License Agreement, IBM International Passport Advantage® Agreement, and the IBM Agreement for Acquisition of Software Maintenance.

### **Licensing**

IBM International Program License Agreement including the License Information document and Proof of Entitlement (PoE) govern your use of the program. PoEs are required for all authorized use.

### **Agreement for Acquisition of Software Maintenance**

The following agreement applies for Software Subscription and Support (Software Maintenance) and does not require customer signatures:

- IBM Agreement for Acquisition of Software Maintenance (Z125-6011)

These programs are licensed under the IBM Program License Agreement (IPLA) and the associated Agreement for Acquisition of Software Maintenance, which provide for support with ongoing access to releases and versions of the program. These programs have a one-time license charge for use of the program and an annual renewable charge for the enhanced support that includes telephone assistance (voice support for defects during normal business hours), as well as access to updates, releases, and versions of the program as long as support is in effect.

### **License Information form number**

Program name	LI form number
WebSphere Application Server for z/OS, V8.5	L-JTHS-8R86XB
Web Server Plug-ins for IBM WebSphere Application Server for z/OS, V8.5	L-JTHS-8R88P2
IBM HTTP Server for WebSphere Application Server for z/OS, V8.5	L-JTHS-8R88NG

The program's License Information will be available for the IBM Software License Agreement website

<http://www.ibm.com/software/sla/sladb.nsf>

**Note:** Carefully read the WebSphere Application Server for z/OS, V8.5 IBM International Program License Agreement (GA22-7908), a copy of which is included with the order (hardcopy or electronic format). It may contain terms that supersede the licensed terms included with this program component.

### **Limited warranty applies**

Yes

### **Limited warranty**

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, consult the IBM Software Support Handbook found at

<http://www.ibm.com/support/handbook>

IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

***Program support***

Enhanced support, called Subscription and Support, includes telephone assistance, as well as access to updates, releases, and versions of the program as long as support is in effect. You will be notified of discontinuance of support with 12 months' notice.

***Money-back guarantee***

If for any reason you are dissatisfied with the program and you are the original licensee, you may obtain a refund of the amount you paid for it, if within 30 days of your invoice date you return the program and its PoE to the party from whom you obtained it. If you downloaded the program, you may contact the party from whom you acquired it for instructions on how to obtain the refund.

For clarification, note that for programs acquired under any of IBM's On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

***Other terms***

***Volume orders (IVO)***

No

***IBM International Passport Advantage Agreement***

***Passport Advantage applies***

No

***Software Subscription and Support applies***

No. For operating system software, the revised IBM Operational Support Services - SoftwareXcel offering will provide support for those operating systems and associated products that are not available with the Software Subscription and Support (Software Maintenance) offering.

This will ensure total support coverage for your enterprise needs, including IBM and selected non-IBM products. For complete lists of products supported under both the current and revised offering, visit

<http://www.ibm.com/services/sl/products>

***IBM Operational Support Services - SoftwareXcel***

Yes

***Other support***

SoftwareXcel

***System i Software Maintenance applies***

No

***Variable charges apply***

No

### **Educational allowance available**

Yes. A 15% education allowance applies to qualified education institution customers.

### **Sub-capacity terms and conditions**

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For each System z IPLA program with Value Unit pricing, the quantity of that program needed to satisfy applicable IBM terms and conditions is referred to as the required license capacity. Your required license capacity is based upon the following factors:

- The System z IPLA program you select
- The applicable Value Unit Exhibit
- The applicable terms
- Whether your current mainframes are full capacity or sub-capacity

For more information on the Value Unit Exhibit for the System z IPLA program you selected, refer to the [Ordering information](#) section.

Program number	Program name	Terms	Parent, if applicable
5655-w65	websphere Application Server for z/OS, v8.5	Execution-based	

### **Full-capacity mainframes**

In cases where full capacity is applicable, the following terms apply.

Execution based, z/OS based, full machine based: The required capacity of a System z IPLA program with these terms equals the MSU-rated capacity of the machines where the System z IPLA program executes.

For more information on mainframe MSU-rated capacities, visit

<http://www-1.ibm.com/servers/eserver/zseries/library/swpriceinfo/>

Reference based: The required license capacity of a System z IPLA program with these terms equals the license capacity of the applicable monthly license charge (MLC) program. This MLC program is called the parent program.

### **Sub-capacity mainframes**

In cases where sub-capacity is applicable, the following terms apply.

Execution based: The required capacity of a System z IPLA sub-capacity program with these terms equals the capacity of the LPARs where the System z IPLA program executes.

z/OS based: The required license capacity of a System z IPLA program with these terms equals the license capacity of z/OS on the machines where the System z IPLA program executes.

Reference based: The required license capacity of a System z IPLA program with these terms equals the license capacity of the applicable monthly license charge (MLC) program. This MLC program is called the parent program.

Full machine based: The required license capacity of a System z IPLA program with full machine based terms equals the MSU-rated capacity of the machines where the System z IPLA program executes.

For more information on mainframe MSU-rated capacities, refer to *The IBM System z Machines Exhibit*, Z125-3901, or visit the Mainframes section of the System z Exhibits website

<http://ibm.com/zseries/library/swpriceinfo/>

For additional information for products with reference-based terms, System z IPLA sub-capacity programs with reference-based terms adds value to the parent program across the environment, regardless of where in the environment the System z IPLA program executes.

An environment is defined as either a single or stand-alone machine or a qualified Parallel Sysplex. You may have one or more different environments across the enterprise. To determine the required license capacity for each System z IPLA program with referenced-based terms, each environment should be assessed separately.

When a System z IPLA sub-capacity program with reference-based terms is used in a qualified Parallel Sysplex environment, the required license capacity of the System z IPLA program must equal with the license capacity of the parent program across the Parallel Sysplex. Qualified Parallel Sysplex refers to one:

- Where MLC pricing is aggregated across the sysplex

### **Sub-capacity eligibility**

To be eligible for sub-capacity charging on select System z IPLA programs, you must first implement and comply with all terms of either sub-capacity Workload License Charges (WLC) or sub-capacity Entry Workload License Charges (EWLC). To implement sub-capacity WLC or EWLC, a machine must be System z (or equivalent). On that machine:

- All instances of the OS/390® operating system must be migrated to the z/OS operating systems.
- Any licenses for the OS/390 operating system must be discontinued.
- All instances of the z/OS operating systems must be running in z/Architecture® (64-bit) mode.

For that machine, you must create and submit a Sub-Capacity Report to IBM each month. Sub-Capacity Reports must be generated using the Sub-Capacity Reporting Tool (SCRT). For additional information or to obtain a copy of SCRT, visit the System z Software Pricing website

<http://ibm.com/zseries/swprice>

You must comply with all of the terms of the WLC or EWLC offering, whichever is applicable:

- The complete terms and conditions of sub-capacity WLC are defined in the IBM Customer Agreement - Attachment for System z Workload License Charges (Z125-6516).
- The complete terms and conditions for sub-capacity EWLC are defined in the IBM Customer Agreement - Attachment for IBM System z 890 and 800 License Charges (Z125-6587).

Additionally, you must sign and comply with the terms and conditions specified in the amendment to the IPLA contract - *Amendment for IBM System z9® and System z Programs Sub-Capacity Pricing* (Z125-6929). Once the amendment is signed, the terms in the amendment replace any and all previous System z IPLA sub-capacity terms and conditions.

IBM Getting Started Sub-capacity Pricing for z/OS IPLA Software applies.

### **Sub-capacity utilization determination**

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Sub-capacity utilization is determined based on the product's own execution as reported to IBM in accordance with the requirements for reporting sub-capacity utilization for products.

## On/Off Capacity on Demand (CoD)

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To be eligible for On/Off CoD pricing, you must be enabled for temporary capacity on the corresponding hardware, and the required contract, Attachment for IBM System z On/Off Capacity on Demand (Z125-7883) must be signed prior to use.

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## Statement of good security practices

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IT system security involves protecting systems and information through prevention, detection, and response to improper access from within and outside your enterprise. Improper access can result in information being altered destroyed or misappropriated or can result in misuse of your systems to attack others. Without a comprehensive approach to security, no IT system or product should be considered completely secure and no single product or security measure can be completely effective in preventing improper access. IBM systems and products are designed to be part of a comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective. IBM does not warrant that systems and products are immune from the malicious or illegal conduct of any party.

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## Prices

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Information on charges is available at

<http://www.ibm.com/support>

Choose the option entitled Purchase/upgrade tools.

Program Name: WebSphere Application Server for z/OS, V8.5  
Program PID: 5655-W65

Entitlement identifier	Description	License option/ Pricing metric
S016MLD	WebSphere Application Server for z/OS, V8.5	Basic OTC, Value Units Basic OTC, per MSU-day TUC

Subscription and Support PID: 5655-F81

Entitlement identifier	Description	License option/ Pricing metric
S00V3BC	WebSphere Application Server for z/OS S&S	Basic ASC, Value Units SW S&S No Charge, Decline SW S&S Per MSU SW S&S Registration

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## IBM Global Financing

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IBM Global Financing offers competitive financing to credit-qualified customers to assist them in acquiring IT solutions. Offerings include financing for IT acquisition, including hardware, software, and services, from both IBM and other manufacturers or vendors. Offerings (for all customer segments: small, medium, and large enterprise), rates, terms, and availability can vary by country. Contact your local IBM Global Financing organization or visit

<http://www.ibm.com/financing>

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For more financing information, visit

<http://www.ibm.com/financing>

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## Order now

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To order, contact the Americas Call Centers or your local IBM representative, or your IBM Business Partner.

To identify your local IBM representative or IBM Business Partner, call 800-IBM-4YOU (426-4968).

Phone: 800-IBM-CALL (426-2255)  
Fax: 800-2IBM-FAX (242-6329)  
Internet: [callserv@ca.ibm.com](mailto:callserv@ca.ibm.com)  
Mail: IBM Teleweb Customer Support  
ibm.com Sales Execution Center, Americas North  
3500 Steeles Ave. East, Tower 3/4  
Markham, Ontario  
Canada  
L3R 2Z1

Reference: LE001

The Americas Call Centers, our national direct marketing organization, can add your name to the mailing list for catalogs of IBM products.

**Note:** Shipments will begin after the planned availability date.

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