



# IBM WebSphere Application Server for z/OS, V9.0 delivers the next-generation application infrastructure for modern applications to support seamless portability across hybrid cloud landscapes

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## At a glance

WebSphere<sup>®</sup> Application Server for z/OS<sup>®</sup>, V9.0, with its traditional and Liberty run times, continues to offer industry-leading, production-ready, standards-based Java<sup>™</sup> EE 7 compliant architecture.

Highlights of Version 9.0 include:

- Certification to the Java EE 7 Web Profile and Java EE 7 Full Platform for WebSphere Application Server traditional, which provides assurance that applications leverage standards-compliant programming models. WebSphere Liberty for z/OS was certified to Java EE 7 Web Profile and Full Platform in June, 2015.
- Easy-to-connect existing on-premise applications with Bluemix<sup>®</sup> services, which include Watson<sup>™</sup> cognitive for optimal business outcomes.
- Enhanced support for creating, documenting, and discovering APIs, and also integrating with API platforms, such as IBM API Connect<sup>™</sup>.
- Significant improvements in software delivery lifecycle times through seamless integration into DevOps workflows. This enables continuous delivery and removes cross-team dependencies for deployment.
- Use of Liberty App Accelerator to provide a quick start development of Java microservices.
- Best practices for creating new Java microservices by using Game On!, an exemplar application, which helps explore microservices concepts.
- WebSphere Application Server for z/OS functionality that takes advantage of z Systems<sup>™</sup> and z/OS qualities of service.

WebSphere Application Server for z/OS, V9.0 continues to offer the leading, open standards-based application foundation for traditional workloads and also modern applications that tend to be delivered as services. It enables accelerated delivery of innovative applications with unmatched operational efficiency, reliability, administration, security, and control.

## Overview

Social, mobile, analytics, and cloud technologies accelerate the pace of business. Software is key driver of differentiation and innovation, and also a gateway to new services, revenue streams, seamless omni-channel client experiences, and expansion into new markets. But success in the new era depends on how enterprises transform IT to bring increased agility and speed to their existing business. As enterprise IT is called upon to implement business strategy to enter new markets, reach new clients, and drive competitive differentiation, IT needs a new way to build software that is faster, more flexible, and more composable. It also requires reusable components that allow for rapid assembly of applications in support of dynamic business needs. This approach requires an application platform that offers modular architectures, next-generation integration techniques, a cloud-first, mobile-first mindset and seamless portability across a hybrid landscape.

WebSphere Application Server for z/OS, with its traditional and Liberty run times, offers industry-leading, production-ready, standards-based Java EE 7 compliant architectures that support the API economy and underpin business transformation. Additional features and enhancements to WebSphere Application Server for z/OS offer an ideal infrastructure that is well suited for enterprise IT, upon which businesses can deliver composable applications. This allows secure, flexible, and efficient access to internal or external software components and services. Other enhancements provide ease-of-integrating WebSphere run times in the DevOps workflows for continuous integration and continuous delivery.

- Java EE 7 Web Profile and Full Platform certification of WebSphere Application Server for z/OS traditional brings the traditional runtime to the same Java EE level as the Liberty for z/OS runtime. This supports deployment of any Java EE 7 based application that uses the latest industry standards for on-premises or in the cloud. It enables you to easily exploit HTML 5 to:
  - Improve application responsiveness.
  - Increase developer productivity.
  - Help meet the most demanding enterprise requirements.
- IBM<sup>®</sup> SDK for z/OS, Java Technology Edition Version 8 support for WebSphere Application Server for z/OS, V9.0 traditional and WebSphere Liberty for z/OS deliver enhanced developer productivity and significant application performance improvements.
- Enhanced WebSphere eXtreme Scale provides an easy-to-configure, easy-to-deploy, distributed caching solution where speed and performance are the main drivers of business success.

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## Key prerequisites

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WebSphere Application Server for z/OS, V9.0 requires z/OS V2.1 or later.

For details, refer to the [Technical requirements](#) section.

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## Planned availability date

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June 24, 2016

Refer to the [Availability of national languages](#) section for national language availability.

Availability of programs with encryption algorithm in France is subject to French government approval.

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## Description

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WebSphere Application Server for z/OS is a proven, high-performance transactional runtime that can help you build, run, integrate, and manage dynamic business applications. WebSphere Application Server for z/OS, V9.0 now brings the latest in Java enterprise standards, Java EE 7 Web Profile and Java EE 7 Full Platform, to WebSphere Application Server for z/OS traditional. WebSphere Application Server Liberty for z/OS is already certified to Java EE 7 Web Profile and Java EE7 Full Platform.

With Version 9, you can deliver a broad range of applications, which support traditional workloads that favor Systems of Record (SoR) type applications or the modern workloads (also known as Systems of Engagement (SoE) applications) that are typically delivered as microservices. WebSphere Application Server V9 supports development and delivery of both these styles of applications by offering two standards-based server runtimes and tools in a single offering:

- WebSphere Application Server for z/OS traditional, previously known as full profile
- WebSphere Application Server Liberty for z/OS

These two runtimes help you meet the demands of multi-speed IT. They provide the ability to rapidly develop new client-facing capabilities with Liberty, while maintaining the pace for traditional workloads with WebSphere Application Server traditional.

All WebSphere Application Server editions are built on a common server foundation that is designed to deliver the same Java EE and broad programming model support and transactional runtime. However, WebSphere Liberty is designed and optimized for fast-paced deployments of applications that deliver business value through continuous integration and delivery.

WebSphere Application Server for z/OS, V9.0 now enables applications that are deployed on WebSphere Application Server traditional in an on-premises environment to easily integrate with Watson cognitive cloud services, so every application can benefit from cognitive analytics in support of making optimal business decisions. WebSphere Application Server for z/OS traditional and WebSphere Liberty for z/OS continue to deliver the highest level of enterprise qualities of services required for the most demanding workloads, such as rock-solid security, high availability, reliability, and serviceability, a high-performance transaction engine, and intelligent management capabilities that minimize end-user outages and maximize operations.

WebSphere Application Server Liberty, while maintaining developer-friendly aspects, such as light weight, and fast startup, extends these capabilities through additional programming models and ease of integration with DevOps workflows that shorten the delivery lifecycle of modern applications.

Java EE 7 Web Profile and Full Platform certified runtime for WebSphere Application Server for z/OS traditional provides the following advantages to businesses:

- Extends the set of applications that can be rapidly developed on WebSphere Liberty for z/OS for deployment to both WebSphere Application Server Liberty for z/OS and WebSphere Application Server for z/OS traditional.
- Provides scalable infrastructure that facilitates building HTML5 applications for improved responsiveness through low-latency, bidirectional communication with WebSockets. It simplifies data parsing and exchange by using industry-standard JSON processing and supports many more concurrent users through asynchronous RESTful Web Services with JAX-RS 2.0 client support.
- Increases developer productivity with simplified application architecture, reduced boiler-plate code using dependency injection and default resources, broadened use of annotations to increase efficiency, and enhanced application portability with standard RESTful Web Services client support
- Meets the most demanding enterprise requirements, such as:
  - Breaking down batch jobs into manageable chunks for uninterrupted OLTP performance

- Defining multithreaded concurrent tasks easily for improved scalability
- Improving Managed Beans alignment (including transactional interceptors)
- Delivering transactional applications with choice and flexibility
- Improves usability through annotations and Contexts and Dependency Injection (CDI) Beans support and significantly reduces the code required to send and receive messages.

### **Accelerated development and deployment of Java microservices**

WebSphere Liberty for z/OS provides starting points, rules of engagement, and tools to help users create net new Java microservices applications. Enhancements to WebSphere Liberty microservices offerings include:

- Liberty App Accelerator. Liberty App Accelerator is a service that is hosted on Bluemix that gives users a starting point to build java microservices applications by using WebSphere Liberty. It now has a fresh, new interface and provides developers with a menu-driven approach to create Java-based microservices by using different technologies. Liberty App Accelerator includes technology types, such as Spring Boot and Watson. The resultant project can be deployed locally or on Bluemix.
- Game On!, a microservices application from scratch. IBM provides best practices and methodologies for creating a brand new microservices application. Game On! is an exemplar application that helps users explore basic and advanced microservices concepts. Game On! now includes support for Logmet, LogStash, and apiDiscovery functions.
- New microservice section on IBM Cloud Architecture Center. The microservice section in the IBM Cloud Architecture Center, which is dedicated to exploring microservices, serves as a reference for users to leverage the IBM cloud that provides the runtime and services for deploying microservices applications that are resilient, agile, and scalable. In this site, users can explore and experiment with microservices architecture patterns and technologies by building services to extend Game On!

### **WebSphere Application Server Developer Tools enhancement**

The WebSphere Application Server Developer Tools are enhanced to support Java 8 and the full range of programming models that are available on WebSphere traditional, which include the Java EE 7 Web profile and Full Platform.

### **Introduction of WebSphere Connect capabilities for easy adoption of API economy**

WebSphere Connect is a collection of capabilities provided by WebSphere Application Server for z/OS traditional and WebSphere Liberty for z/OS that helps you turn your WebSphere business assets into APIs. These capabilities enable you to easily produce and consume APIs and connect to and from the hybrid cloud to rapidly extend the value of your application investments.

Building on the API and hybrid cloud capabilities that were delivered in the previous WebSphere Application Server for z/OS Continuous Delivery, WebSphere Application Server now adds to WebSphere Connect with:

- Expanded WebSphere Application Server Developer Tools support for creating Swagger API documentation with further JSON validation and improvements to the generation of client-side code to consume APIs.
- Seamless integration between your on-premises WebSphere Liberty applications and IBM dashDB™, a fully-managed cloud data warehouse, which is purposely built for analytics.

Now not only is it easy to create, discover, and publish APIs, WebSphere provides an end-to-end API Management solution. It delivers a turnkey solution for entering the new API economy.

## Specific enhancements for WebSphere Application Server for z/OS that take advantage of z Systems and z/OS qualities of service

- Installation improvements on z/OS

Installation requires the IBM Installation Manager for z/OS, which is available as a separately orderable, no-charge product (5655-IMZ). The repositories used to install WebSphere Application Server are obtained from a secure web-based repository or from product media (DVD or DVD image). Service is available from the web-based repository or by download from IBM Fix Central. Preventive service (fix packs) and corrective service (interim fixes) use the same delivery mechanism, simplifying product maintenance.

Installations of WebSphere Application Server Liberty now include all optional WebSphere features by default.
- Dramatic reduction in installation package size on z/OS

The SMP/E deliverable consists of a small library of sample jobs that install the product from the Web, downloaded repositories, or physical media. The SMP/E component for WebSphere Application Server for z/OS, V9.0 ships only the sample jobs required to install the product from cloud-based or downloaded product and service repositories. As a result, disk space requirements for Version 9.0 are 75-90% smaller than for Version 8.5.5. New sample jobs are also provided for the installation of corrective service when necessary.
- Product customization improvements

The customization jobs that are generated by the WebSphere Customization Toolkit or the `zpmc.sh` command are simplified and improved. In particular, the `/tmp` directory is no longer used during customization if `$TMPDIR` is set.
- Total transition to 64-bit support for WebSphere Application Server for z/OS V9.0
- Support for running more than 256 servers on one z/OS logical partition (LPAR)
- Enhancements to the Display Work operator command
  - To include messages/work processed by the WebSphere Application Server adjunct region
  - To show 'High Water' levels for various types of work
- Exploitation of z/OS Workload Manager (WLM) Health API to pace work into newly started servant regions
- Support for tracing and logging of large call stacks and BUFFER OVERFLOW condition
- Dynamic expansion of Control Region thread pool (an elastic control region)
- Improved wild-carding for Classification XML file
- Trace filtering by Task Control Block (TCB)- What is that task doing?
- Simpler z/OS Modify commands automation - added support for CART write-to-operator (WTO) option
- Improvements to MSGROUTE options
- Enhanced Pause-Resume Listeners feature to include Activation Specifications
- WebSphere Optimized Local Adapter (WOLA) enhancements
  - Enhancements to support IMS™ two phase commit global transactions
  - Enhancements for Link Server control transaction, List Servers command (BBOC LIST\_SRVR)
  - Support for CICS® shutdown Program List Table program to clean up registrations at CICS shutdown automatically
  - Enhancements in support of RAD 7.0.1 for WebSphere Optimized Local Adapter
  - Round robin routing support for sharing registrations for WebSphere Application Server application outbound calls (`ola_locate_service_search_algorithm=2`)
  - WOLA- CICS correlator token for WebSphere Application Server/ CICS SMF record correlation

- Enhanced CICS channels and containers support (support for MappedRecords and multiple containers in a channel)
- Support for shared APIs between WOLA for WebSphere Application Server traditional and Liberty

### **IBM HTTP Server enhancements**

IBM HTTP Server (IHS) is a web server that is based on the Apache Software Foundation's Apache HTTP Server. It is included in the WebSphere Application Server distribution packages. The core runtime is now based on Apache HTTP Server 2.4, which provides:

- Improved vertical scalability on Linux™
- Advanced authorization logic for enhanced security
- Fine-grained logging and tracing for easy problem determination
- Improved FastCGI support for externally managed FastCGI applications

Additional enhancements include:

- Improved support for Transport Layer Security (TLS), a cryptographic protocol that provides communications security over a computer network. This feature provides support for name-based TLS virtual hosts via TLS Server Name Indication and TLS certificate monitoring for upcoming expiration.
- Support for scripts that are written in the [Lua](#) programming language for easy working with HTTP requests.
- Support for regular expression based manipulation of the HTTP responses.

### **Migration enhancements**

The WebSphere Migration Toolkit is enhanced to migrate applications from previous versions of WebSphere to WebSphere Application Server for z/OS, V9 through both source and binary scanning. It helps detect and mitigate issues related to:

- WebSphere API removals
- WebSphere API deprecations
- API behavior changes when moving to the latest Java EE 7 support. Java EE 7 migration is optional for JPA and JAX-RS
- Java 8 migration support

Source scanning tool enhancements include:

- Migration of applications from competitive application servers to WebSphere Application Server for z/OS, V9
- Support for Maven Eclipse projects

The design and usability of the binary scanner's reports also are enhanced as follows:

- Major design and usability enhancements for both report types
- Ability to include or exclude packages from the binary scan

WebSphere Application Server for z/OS configuration migration tools move the traditional configuration from Version 7.0, Version 8.0, and Version 8.5 to Version 9.0. Enhancements include:

- Simplified migration support for WebSphere Virtual Enterprise and Compute Grid. Supports these features as integrated components of Version 8.5.5 to Version 9, or as installed stack products on Version 7 and Version 8.
- Support for new clone migration strategy.
- New AppInstaller migration tool which allows concurrent deployment of applications, is reentrant, and replaces the old install\_all\_apps.jy script.

- Improved port assignment support for z/OS migrations.
- New migration properties file used to select options to make migrations consistent and repeatable.

### **Enhancements to WebSphere Application Server Liberty for z/OS include :**

- HTTP request chargeback and capacity planning support through SMF  
WebSphere Liberty for z/OS can now be configured to produce SMF 120-11 records for all incoming HTTP requests. These records contain information allowing chargeback and capacity planning for WebSphere Liberty for z/OS servers running HTTP workloads.
- Single management interface for both Java and Node.js across a hybrid topology  
As businesses demand that IT supports modern applications at a faster pace to meet the requirements of engaging applications for social and mobile, developer increasingly adopt a DevOps mindset. They turn to composing applications from multiple languages, such as Java and Node.js, and use container technologies to gain freedom from being tied to a single vendor, platform, or enterprise environment. These modern application workloads are typically characterized by unpredictable demand surges and require sub-second response times that in turn requires IT to provide additional capacity on demand.

To meet these demands, IT increasingly turns to extending their on-premises capacity with an on-demand capacity that is available from cloud vendors. This creates a hybrid topology of polyglot applications and servers across a hybrid environment. Managing these polyglot applications securely and intelligently in production requires sophisticated tools. WebSphere Application Server provides a single, integrated interface for polyglot applications and servers. Now, with the combination of WebSphere Liberty's Collective feature and WebSphere Administration Center, IT administrators can easily manage large scale topology that comprises of WebSphere Java and Node.js applications and servers, deployed across bare-metal, Docker container, or virtual machine (VM), on-premises or in the cloud, through a single interface.

The key features include:

- An administration center for visualization and operational control over both Java and Node.js applications
- Scalable clustering for Java applications
- Dynamic routing support (through a WebSphere Application Server plug-in) for Java and Node.js applications
- Scriptable deployment for both Java and Node.js applications

### **Security enhancements**

WebSphere Application Server for z/OS traditional and WebSphere Liberty for z/OS both support security enhancements that are defined in the Java EE7 specification. Additionally, WebSphere Liberty Repository contains several security features beyond Java EE7. New enhancements include:

- OAuth bearer token propagation: This enhancement enables a client to pass OAuth token when calling a downstream service through HTTP.
- Security Assertion Markup Language (SAML) support for token propagation to Java API for RESTful Services (JAX-RS) endpoints. This enhancement allows an external authentication proxy to pass SAML tokens directly to a JAX-RS endpoint, or for a client to pass SAML token directly to a downstream JAX-RS endpoint.
- Usability improvements:
  - Java EE application roles are automatically mapped to a group of the same name in the user registry if no binding is present. This eliminates the

requirement to specify bindings when role names are the same as group names.

- User registry configuration is now optional when not needed: for example, when custom or external authentication is configured.
- Custom password encryption enhancements include:
  - Support for custom encryption in the security utility command line tool
  - New API for password encryption and decryption

## Features available for WebSphere Liberty for beta offering

*Enhancement to Cloud Based Log Analytics Service from IBM Bluemix for on-premise applications*

This feature continues to be available as a beta offering. It provides an easy-to-integrate, cloud-based log analytics with your on-premises WebSphere servers and applications. It helps to quickly find errors in application logs, resolve problems, and intelligently search through logs to find the answers to your application problems. With the new enhancements set up of the Bluemix log collector feature in Liberty can be accomplished in minutes for your first server and seconds for subsequent servers.

## 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 found on the [IBM Accessibility](#) website.

## Value Unit-based pricing

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Value Unit pricing for eligible IBM z Systems™ IBM International Program License Agreement (IPLA) programs enables a lower cost of incremental growth and enterprise aggregation. Each z Systems 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 z Systems 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 z Systems IPLA program that you have acquired is referred to as **entitled license capacity**. If you wish to grow your entitled license capacity for a z Systems IPLA program, the calculation to determine additional needed Value Units is based upon the number of Value Units already acquired.

For each z Systems 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, go to the [IBM System z<sup>\(R\)</sup> Software Pricing](#) website.

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 z Systems 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 several configuration options and support for multiple business models and deployment platforms. It also supports a wide range of scenarios:

- Open-source-based projects and projects with no up-front budget
- Simple administration of a single server environment
- A clustered, highly available, high-volume environment with edge-of-network services

WebSphere Application Server V9.0 configurations are built on a common server foundation that delivers the same Java EE 7 and broad programming model support. Its proven transactional engine delivers increasingly higher qualities of service across product configurations. 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 for Java EE 7 compliant WebSphere Application Server include:

- No-charge and no-support option

WebSphere Application Server traditional and Liberty provide a no-charge and no-support option for web-centric applications for use in test and production environments. Usage in test and production environments is restricted to a maximum of 2 GB of JVM heap size across all instances of application servers for the licensee. IBM provides an in-place option to upgrade from a no-charge, no-support to other WebSphere Application Server editions.

- WebSphere Application Server Liberty Core V9.0

WebSphere Application Server Liberty Core V9.0, a lightweight and dynamic offering of WebSphere Application Server, that is Java EE 7 Web Profile compliant. Composed entirely of the developer-friendly Liberty profile, the WebSphere Application Server Liberty Core edition enables rapid development and deployment of web-centric and mobile-centric applications. It allows businesses to quickly respond to enterprise and market needs. Liberty profile servers can be members of collectives that enables them to be managed by a collective controller from a Network Deployment installation. The capabilities that are provided in the Liberty Core edition are a subset of the capabilities provided in the WebSphere Application Server and Network Deployment editions.

Highlights of the new Liberty Core offering include:

- Extremely lightweight offering that is composed of a subset of the Liberty profile that is certified for the Java EE 7 Web Profile
- An excellent development and production runtime for web applications
- Fast time to value
- Small download, small footprint, and fast startup easily packaged applications (includes configuration) for deployment, extensible through Liberty features SPI

- Support for IBM API Connect Essentials to easily create, discover, and publish APIs, as well as integrating with API Management solution right out of the box delivering a turnkey solution for entering the new API economy
- WebSphere Application Server V9.0
 

WebSphere Application Server, which includes traditional and Liberty, is now Java EE 7 Full Platform compliant. It is tailored for a single server to moderately-sized configurations of departmental or large-scale, dynamic web applications that require web tier clustering and failover across application server instances, and a variety of pricing alternatives. The Liberty capabilities include a superset of those found in WebSphere Application Server Liberty Core. They provide additional programming models, such as Web Services, full EJB, and Java Message Service. Liberty profile can be members of collectives, that enable it to be managed by a collective controller from a Network Deployment installation. It enables load balancing across servers, and includes WebSphere eXtreme Scale with support for session caching and DynaCache.
- WebSphere Application Server Network Deployment V9.0
 

WebSphere Application Server Network Deployment edition offers enterprises near-continuous availability, advanced management, and automated performance optimization for their mission-critical applications. WebSphere Application Server Network Deployment capabilities include a superset of those found in WebSphere Application Server Liberty Core, and WebSphere Application Server configuration. It offers:

  - World-class, clustering and high-availability management to help eliminate the cost of system downtime
  - Auto-scaling, auto-routing, and Internet-scale clustering for intelligent and efficient management of compute resources
  - Enterprise-level, Java batch capabilities, such as parallel job processing, job checkpoints and restart, workload management, and shared OLTP and batch processing, to support batch modernization and modern batch projects
  - 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
  - High performance that maximizes business competitiveness while minimizing total cost of ownership
  - Liberty profile collective cluster administration that improves resiliency of server and provides high availability for mission-critical application
  - Distributed caching through WebSphere eXtreme Scale that provides responsiveness to enterprise, cloud, and mobile application
- WebSphere Application Server Family Edition V9.0
 

The WebSphere Application Server Family Edition brings together the following key WebSphere Application Server products that are bundled under a common license entitlement.

  - WebSphere Application Server Network Deployment, which includes the Network Deployment editions of both the full profile and Liberty profile application servers
  - WebSphere Application Server, which includes the single-server editions of both the traditional and Liberty application servers
  - WebSphere Application Server Liberty Core

WebSphere Application Server Family Edition gives you the flexibility to deploy the application server edition that is specific to your business needs. It also

allows you to easily adjust the mix of products deployed from the bundle as the needs of your business change.

- WebSphere Application Server for z/OS, V9.0

WebSphere Application Server for z/OS offers all the capabilities that are available in the WebSphere Application Server Network Deployment. In addition, it takes advantage of the unique qualities of service of z Systems hardware and the z/OS operating system, such as policy-driven workload management, advanced transactional integrity, unsurpassed scalability and availability, built-in enterprise security capabilities, and more. Also, WebSphere Application Server for z/OS includes z/OS-specific features that large enterprise clients can appreciate, such as z/OS Connect and WebSphere optimized local adapters.

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## Statement of general direction

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IBM intends to provide equivalent support for WebSphere Application Server for z/OS V9.0 by WebSphere eXtreme Scale.

IBM intends to provide future general availability releases of the following products and utilities that will include development tools and code analysis support for WebSphere Application Server V9.0.

The IBM expectation is that delivery of this tooling and code analysis support will be after the general availability of WebSphere Application Server V9.0. The offerings will provide the development tools and code analysis support:

- Rational<sup>(R)</sup> Application Developer for WebSphere Software is an Eclipse-based Integrated Development Environment (IDE) that provides developers with many integrated capabilities that can enable faster application development and maintenance, and higher initial code quality.
- Rational Software Architect Designer is a modeling tool that provides many capabilities for modeling with Unified Modeling Language (UML), Business Process Model and Notation (BPMN), and various other domain-specific modeling languages, and also capabilities for transforming between such models and various types of application source code. It provides both an Eclipse-based interface, and a web-based interface to its collaborative, server-based, "design management" capabilities that complement the modeling tools.
- Rational Software Architect Designer Extension for SOA and WebSphere, an offering that extends Rational Software Architect Designer, adds a subset of the capabilities of Rational Application Developer for WebSphere Software, and also adds specific additional domain modeling and transformation capabilities, most notably for Enterprise Java and Service Oriented Architectures.
- Rational Software Architect Designer for WebSphere Software is a modeling tool with a complete IDE. This offering includes the full capabilities of both Rational Application Developer for WebSphere Software and the full capabilities of Rational Software Architect Designer, and also many additional modeling and transformation capabilities that are not available in those products.
- Rational Agent Controller is not a product, but instead a utility that is delivered as part of Rational Application Developer for WebSphere Software and as part of Rational Software Architect Designer for WebSphere Software and as part of WebSphere Application Server offerings. It enables developers to connect to remote instances of WebSphere Application Server and perform runtime code analysis on applications that are running on those remote WebSphere Application Server instances.

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding

potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remain at our sole discretion.

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## Reference information

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For information on WebSphere Application Server V9.0, refer to Software Announcement [ZP16-0344](#), dated June 7, 2016.

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## Availability of national languages

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| Description                                 | Availability date | Language             |
|---------------------------------------------|-------------------|----------------------|
| WebSphere Application Server for z/OS, V9.0 | June 24, 2016     | English and Japanese |

Translation information, if available, can be found at the [Translation Reports](#) website.

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## Program number

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| Program number | VRM   | Program name                                                              |
|----------------|-------|---------------------------------------------------------------------------|
| 5655-WAS       | 9.0.0 | WebSphere Application Server for z/OS                                     |
| 5655-F81       | 1.1.0 | WebSphere Application Server for z/OS - Software Subscription and Support |

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## Product identification number

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| Program PID number | Subscription and Support PID number |
|--------------------|-------------------------------------|
| 5655-WAS           | 5655-F81                            |

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## Offering Information

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Product information is available on the [IBM Offering Information](#) website.

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## Publications

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The latest product documentation for WebSphere Application Server for z/OS, V9.0 is found in [IBM Knowledge Center](#)

IBM Knowledge Center is the new home for IBM product documentation. It brings IBM's technical publications together in a single location, and replaces over 800 individual product Information Centers. IBM Knowledge Center simplifies the user experience, improves search, and refines the overall experience with other enhancements. Locate the desired WebSphere Application Server offering from the product list to obtain the product documentation.

You can find information on installing the continuous delivery features in the WebSphere Application Server product documentation. No hardcopy publications are shipped with this product. Using IBM Knowledge Center, users can define collections and produce custom PDF documents for their collections.

For optimal viewing of this documentation, browser support for JavaScript™ and related technologies is required.

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## Services

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### **Global Technology Services**

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Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings for the efficient installation, implementation, or integration of this product.

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## Technical information

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### **Specified operating environment**

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#### **Software requirements**

For details, refer to the [System Requirements](#) for WebSphere Application Server for z/OS, V9.0.

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.

#### **Limitations**

For additional information, refer to **Usage restrictions** in the Terms and conditions section of this announcement, or to the license information document that is available on the [IBM Software License Agreement](#) website.

### **Planning information**

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#### **IBM API Connect Essentials**

IBM API Connect Essentials is included as a supporting program within WebSphere Application Server and counts towards the number of entitlements required. Usage of the API Connect Essentials server is unrestricted, and entitlement provides for up to 500 Monthly API Calls per WebSphere Application Server Processor Value Unit (PVU) purchased.

#### **WebSphere Application Server for Developers**

WebSphere Application Server for Developers is not be offered in Version 9.0. It provided a WebSphere Application Server runtime for use in a development environment only, in order to effectively develop and test applications locally and deploy with complete fidelity to a WebSphere Application Server production environment. It made development to production migration a non-issue. WebSphere Application Server entitlement now includes a no-charge entitlement for developers developing on their desktops, making this edition obsolete for Version 9.

#### **WebSphere Application Server Express<sup>(R)</sup>**

WebSphere Application Server Express edition is not offered for Version 9.0. Clients have the option to trade up to WebSphere Application Server V9.0.

#### **WebSphere Application Server Liberty Core**

##### **20 Intranet User licenses**

Intranet User licenses are acquired in packs of 20 Authorized (named) users, and those users are authorized for that specific WebSphere Application Server Liberty Core server. Multiple Intranet User packs can be purchased for a single server to increase the server capacity beyond 20 Authorized Users. However, there is a

limitation of a single WebSphere Application Server Liberty Core server acquired through the Intranet User option per client location

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

WebSphere Application Server Hypervisor edition will not be offered for Version 9.0 and clients with current S&S will be entitled to WebSphere Application Server Network Deployment V9.0 for migration. IBM already delivered WebSphere Application Server Patterns, a single "plug-in" to create system and application virtualization patterns directly from WebSphere Application Server Network Deployment component binaries that are available in the Install Manager Repository. IBM does not expect any additional enhancements will be applied to the WebSphere Application Server Hypervisor Edition V8.0.x and V8.5.x. IBM will continue to deliver periodic fixpacks to customers deploying IBM WebSphere Application Server Hypervisor Edition V7.0.

The following programs were withdrawn, effective April 12, 2016. Entitlements to the bundles will be replaced by entitlements to individual products that were included in the bundles or that otherwise provide identical functional capabilities.

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

For details, refer to Software Announcement [ZP16-0101](#), dated January 12, 2016

### **The following features are removed from WebSphere Application Server V9.0**

- IBM WebSphere Application Server Secure DMZ Proxy for z/OS  
With the removal of Secure DMZ Proxy for z/OS, WebSphere DMZ Secure Proxy Server (for distributed platforms) is now a Supporting Program available for use by WebSphere Application Server for z/OS.
- Web 2.0 and Mobile Toolkit
- IBM Assembly and Deploy Tools for WebSphere Administration  
Previously, IBM Assembly and Deploy Tools were provided for administrators to package and publish applications and test wsadmin scripts. Those tools will not be included in WebSphere Application Server V9 because the majority of this function, along with additional tools for application development, newer programming models, updated Eclipse support, support for multiple WebSphere versions, are all available through the WebSphere Application Server Developer Tools on the Eclipse Marketplace.

### **Packaging**

#### **WebSphere Application Server for z/OS, V9.0**

- WebSphere Application Server
- WebSphere Application Server Liberty
- IBM SDK Java Technology Edition V8.0
- WebSphere Application Server Supplements (IBM HTTP Server and Web Server Plugins)<sup>1</sup>
- IBM Installation Manager V1.8.5<sup>1</sup>
- IBM DMZ Secure Proxy Server<sup>1</sup>
- WebSphere Edge Components: Load Balancer for IPv4 and IPv6<sup>1</sup>
- WebSphere Edge Components: Caching Proxy<sup>1</sup>
- WebSphere Adapters V7.5.0.3<sup>1</sup>
- API Connect Essentials V5.0<sup>1</sup>
- IBM Security Access Manager Virtual Edition V9.0<sup>1</sup>

- Security Access Manager Virtual Edition Federation Module V9.0<sup>1</sup>
- Firefox Version 3.6.25.2<sup>1</sup>

<sup>1</sup> Intended for installation on distributed platforms as supporting programs.

WebSphere Application Server for z/OS components are installed with IBM Installation Manager for z/OS (5655-IMZ), a separately-orderable, no-charge product. See [Knowledge Center](#) for installation instructions.

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.

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## Ordering information

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Consult your IBM representative.

### 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          | +            | 0.20            |

### 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 z Systems IPLA product, the applicable Value Units would be:

| Tier   | MSUs  | Multiplied by Value Units per MSU | Equal 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.

### WebSphere Application Server for z/OS, V9.0 (5655-WAS)

*Basic license one-time charge*

#### Charge metric

| Program name                                | Part number or PID number | Charge metric |
|---------------------------------------------|---------------------------|---------------|
| WebSphere Application Server for z/OS, V9.0 | 5655-WAS                  | Value Unit    |

#### Basic license

#### On/Off CoD

WebSphere Application Server for z/OS, V9.0 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, V9.0****Program PID: 5655-WAS**

| Entitlement identifier | Description                           | License option/Pricing metric             |
|------------------------|---------------------------------------|-------------------------------------------|
| S01806P                | WebSphere Application Server for z/OS | On/Off Capacity on Demand 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 or greater | 0.2             |

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, V9.0****Program PID: 5655-WAS**

| Entitlement identifier | Description                                 | License option/Pricing metric |
|------------------------|---------------------------------------------|-------------------------------|
| S01806P                | WebSphere Application Server for z/OS, V9.0 | Basic OTC, per Value Unit     |
| Orderable supply ID    | Language                                    | Distribution medium           |
| S01806N                | US English                                  | IBM 3590 Data Cartridge       |

**Subscription and Support PID: 5655-F81**

| Entitlement identifier | Description                                 | License option/Pricing metric                                                                |
|------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------|
| S00V3BC                | WebSphere Application Server for z/OS - S&S | Basic MSC, per Value Unit SW S&S<br>No charge, decline SW S&S<br>Per MSU SW S&S registration |
| Orderable supply ID    | Language                                    | Distribution medium                                                                          |
| S00V3BF                | US English                                  | Hardcopy publication                                                                         |

**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<sup>(R)</sup> and z Systems 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.

### **Delivery services - Custom QuickShip Program**

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This product is eligible for the IBM Custom QuickShip Program.

Custom QuickShip combines flexible configurations with fast delivery. Customers and Business Partners are able to create product configuration of their choice by using a combination or stand-alone selection of hardware, software, and a menu of additional features, including the option for software preload. The inclusion of feature number 1748 will ensure Custom QuickShip delivery of the complete product configuration or stand-alone order.

The committed response time under Custom QuickShip is six business days from order acceptance by IBM to customer delivery.

### **Customized Offerings**

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Product deliverables are shipped only through CBPDO, ServerPac, SystemPac, FunctionPac, and ProductPac<sup>(R)</sup>.

All of these customized offerings are offered for Internet delivery in countries where Shopz 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, go to the Help section on the [Shopz](#) website.

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 include:

- 3590
- 3592

Most products can be ordered in ServerPac, SystemPac, FunctionPac, and ProductPac the month following their availability in CBPDO. z/OS can be ordered through CBPDO, ServerPac, and SystemPac at general availability. Many products will also be orderable in a Product ServerPac without also having to order the z/OS operating system or subsystem. Shopz and CFSW will determine the eligibility based on product requisite checking. For more details on the product ServerPac, go to the Help section on the [Shopz](#) website.

For additional information about the Product ServerPac option, refer to Software Announcement [ZP12-0358](#), dated July 31, 2012 [ZP12-0358](#), dated July 7, 2012.

Production of software product orders will begin on the planned general availability date.

- CBPDO shipments will begin one week after general availability.
- ServerPac, SystemPac, FunctionPac and ProductPac 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<sup>®</sup> Agreement, and the IBM Agreement for Acquisition of Software Maintenance.

## **Licensing**

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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.

This software license includes Software Subscription and Support (also referred to as Software Maintenance).

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

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The IBM Agreement for Acquisition of Software Maintenance (Z125-6011) applies for Software Subscription and Support (Software Maintenance) and does not require customer signatures.

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. IBM z Systems Operational Support Services - Support Line is an option if you desire added services.

## **License Information number**

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L-SWIS-9YULTE

See the [License Information documents](#) page on the IBM Software License Agreement website for more information.

## **Limited warranty applies**

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Yes

## **Limited warranty**

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

## **Money-back guarantee**

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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.

### **Volume orders (IVO)**

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No

### **Passport Advantage applies**

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No

### **Software Subscription and Support applies**

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Yes. During the S&S period, for the unmodified portion of a Program, and to the extent problems can be recreated in the specified operating environment, IBM will provide the following:

- Defect correction information, a restriction, or a bypass.
- Program updates: Periodic releases of collections of code corrections, fixes, functional enhancements and new versions and releases to the Program and documentation.
- Technical assistance: A reasonable amount of remote assistance via telephone or electronically to address suspected Program defects. Technical assistance is available from the IBM support center in the Customer's geography.

Additional details regarding Technical Assistance, that includes IBM contact information, are provided in the [IBM Software Support Handbook](#).

S&S does not include assistance for:

- The design and development of applications
- Customer's use of Programs in other than their specified operating environment, or
- Failures caused by products for which IBM is not responsible under the IBM Agreement for Acquisition of Software Maintenance.

S&S is provided only if the Program is within its support timeframe as specified in the Software Support Lifecycle policy for the Program.

Yes. All distributed software licenses include Software Subscription and Support (also referred to as Software Maintenance) for a period of 12 months from the date of acquisition, providing a streamlined way to acquire IBM software and assure technical support coverage for all licenses. Extending coverage for a total of three years from date of acquisition may be elected.

While your Software Subscription and Support is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. IBM provides assistance by telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your end users.) IBM provides Severity 1 assistance 24 hours a day, every day of the year. For additional details, go to the [IBM Support Handbooks](#) page.

Software Subscription and Support does not include assistance for the design and development of applications, your use of programs in other than their specified operating environment, or failures caused by products for which IBM is not responsible under this agreement.

For more information about the Passport Advantage<sup>(R)</sup> Agreement, go to the [Passport Advantage and Passport Advantage Express<sup>\(R\)</sup>](#) website.

### **System i Software Maintenance applies**

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No

### **Variable charges apply**

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No

### **Educational allowance available**

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Yes. When ordering through the program number process, a 15% education allowance applies to qualified education institution customers.

Education Software Allowance Program applies when ordering through the program number process.

### **ESAP available**

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Yes, to qualified customers.

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

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For each z Systems 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 z Systems 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 z Systems IPLA program you selected, refer to the [Ordering information](#) section.

| <b>Program number</b> | <b>Program name</b>                         | <b>Terms</b>    | <b>Parent, if applicable</b> |
|-----------------------|---------------------------------------------|-----------------|------------------------------|
| 5655-WAS              | WebSphere Application Server for z/OS, V9.0 | Execution based | Not applicable               |

### **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 z Systems IPLA program with these terms equals the MSU-rated capacity of the machines where the z Systems IPLA program executes.

For more information on mainframe MSU-rated capacities, visit the [IBM z Systems Software Contracts](#) website.

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

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

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

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

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

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

When a z Systems IPLA sub-capacity program with reference-based terms is used in a qualified Parallel Sysplex environment, the required license capacity of the z Systems 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 z Systems 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 z Systems (or equivalent). On that machine:

- All instances of the OS/390<sup>(R)</sup> 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<sup>(R)</sup> (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, refer to the [z Systems Software Pricing](#) website

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 z Systems Workload License Charges* (Z125-6516).

- The complete terms and conditions for sub-capacity EWLC are defined in the *IBM Customer Agreement - Attachment for EWLC, TWLC, zELC, and z/OS.e 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 Amendment for IBM z Systems Programs Sub-Capacity Pricing* (Z125-6929). Once the amendment is signed, the terms in the amendment replace any and all previous z Systems IPLA sub-capacity terms and conditions.

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

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IBM Getting Started Sub-capacity Pricing for z/OS IPLA Software applies. IBM z Systems Collocated Application Pricing for z/OS may also apply. For more details, refer to Software Announcement 215-174 (70380), dated April 7, 2015.

### **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 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 z Systems 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 lawful, comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective.

**Important:** IBM does not warrant that any systems, products, or services are immune from, or will make your enterprise immune from, the malicious or illegal conduct of any party.

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## **Prices**

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Choose the option entitled Purchase/upgrade tools.

**Program name: WebSphere Application Server for z/OS, V9.0**

**Program PID: 5655-WAS**

| <b>Entitlement identifier</b> | <b>Description</b>                    | <b>License option/Pricing metric</b> |
|-------------------------------|---------------------------------------|--------------------------------------|
| S01806P                       | WebSphere Application Server for z/OS | Basic OTC, per Value Unit            |
|                               |                                       | 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, per Value Unit SW S&S |
|                        |                                             | No charge, decline SW S&S        |
|                        |                                             | Per MSU SW S&S registration      |

For all charges, contact your IBM representative.

### IBM Global Financing

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 go to the [IBM Global Financing](#) website for more information.

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

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## Corrections

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**(Corrected on July 26, 2016)**

The Software requirements section is revised.