



# IBM WebSphere Application Server for z/OS delivers modular Java Enterprise Edition 7 Full Platform for Liberty profile

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## At a glance

IBM<sup>(R)</sup> WebSphere<sup>(R)</sup> Application Server for z/OS<sup>(R)</sup>, V8.5 Liberty profile is a lightweight, composable, fast-starting platform that is optimized for modern application workloads, such as cloud and mobile. It is designed for enhanced developer productivity, high-scale and resilient production deployments, and simple integration into modern DevOps workflows. Liberty profile delivers the latest in Java<sup>TM</sup> Standards, that are certified to Java EE 7 Full Platform.

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

- Java EE 7 full platform certification that allows deployment of any Java EE 7 based application that use the latest industry standards
- Two times improvement in throughput for WebSockets
- Java EE 7 technologies that improve application productivity and support for the modern web apps, batch processing, and improvements in dependency injection
- Powerful administration capabilities that deliver simple, intuitive platform capabilities to manage a range of server topologies from a simple single server with a few applications to thousands of servers in a collective and cluster management environment
- Superior end-to-end security for servers, applications, and back-end services that allow enterprises to seamlessly extend, scale, and integrate back-end security features to cloud and mobile users
- Simple integration into an end-to-end DevOps toolchain that enables a smarter development lifecycle to support delivery of continuous and rapid responses to changing business requirements
- WebSphere Application Server Developer Tools that provide flexibility to develop, deploy, test, and debug applications for either on-premise or off-premise cloud environments
- Extremely fast start-up time and light memory footprint that is highly optimized for throughput performance and policy-driven autonomic scaling to enable efficient resource utilization, significantly improve developer productivity, and lower the cost of ownership.
- Lower migration costs to future versions of WebSphere Liberty by eliminating migration of existing Java EE applications and configuration files
- Greater modular installation flexibility through WebSphere Liberty Repository enhancements that offers an offline, on-premise repository to share in-house, open source, and Liberty features that enable greater governance and foster better collaboration among developers

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## Overview

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Cloud, mobile, and social are the new engagement models with mobile and social options as the primary means of communication for everyone - customers, employees, and partners. To take advantage of this emerging engagement model requires organizations to reach out to the right people and provide an interaction that meets or exceeds their expectations for speed, agility, and user friendliness. While these changing market dynamics provide growth opportunities for businesses, capitalizing on them requires a new approach to delivering application infrastructure.

Key to success is to provide the ability for continuous delivery of new features, shorten product innovation time to market, and bring the business value chain closer to customers, partners, and employees. This must be accomplished by the development of engaging and responsive applications that provide a seamless omni-channel experience so consumers can move effortlessly from one channel to another.

To compete successfully in the new era of computing, traditional IT organizations need to tackle the dual challenge of maintaining the stability of existing IT infrastructure services while simultaneously providing new infrastructure capabilities that require the speed, agility, quality, and resilience for fast paced customer-facing cloud and mobile applications. Existing IT infrastructure services come at slower speed, but are critical for risk and regulatory compliance management and for core transactional activities. Balancing the transformation of the transactional architecture with the development of new high-speed architectures, which are often based around lightweight and independently scalable microservices, is forcing businesses to deploy an IT architecture that can operate at multiple speeds.

The WebSphere Application Server for z/OS product offerings include two profiles of the server:

- WebSphere Application Server for z/OS full profile
- WebSphere Application Server for z/OS Liberty profile

These two profiles help companies to rapidly develop their customer-facing capabilities with Liberty profile for z/OS, while maintaining the pace for traditional workloads with WebSphere Application Server for z/OS full profile. Liberty profile is designed and optimized for fast-paced deployment of applications that deliver business value through continuous integration and delivery.

For developers and IT administrators, Liberty profile enhancements offer support for the DevOps ecosystem tool chains of many Open Source and third-party offerings, as well as commercial solutions, such as IBM UrbanCode™ Deploy. Ease of integration of the DevOps ecosystem for app development and deployment empowers both IT developers and administrators with greater flexibility to offer and consume compute resources as services. This is accomplished by automating time-consuming and error-prone tasks of provisioning, managing, and scaling onto either on premise or hybrid clouds during peak or unpredictable workloads. The focus of the Liberty profile DevOps ecosystem toolchain is to provide enhancements in the following areas:

- Designing new products and applications
- Building new products for web, enterprise, cloud-ready, and mobile-ready applications
- Running applications where availability of production-like systems, flexibility, fast time to value, low cost, and deployment both on and off-premise is critical to speed innovation and cost control
- Managing apps and the underlying infrastructure lifecycle to ensure 24x7 availability and responsiveness

- Delivering end-to-end security to protect assets (systems and information) through prevention, detection, and response to improper access from within and outside the enterprise
- Optimizing middleware infrastructure availability through analytics, with actionable insights to help discover, isolate, and predict outages that will ultimately result in higher customer satisfaction

For IT operations managers, availability of Liberty profile tools and runtimes across on-premise and several cloud environments provides freedom to compose new business models with best-of-breed business services (inside and outside of the organization) and to open and exploit new business opportunities quickly. Liberty profile is an enterprise Java application platform that provides separation of concern and independence from the target hosting environment. This may include on-premise bare metal hardware, hypervisors or lightweight container ( Docker for virtualized environments), on-premise cloud offerings (IBM Pure Application Systems), several infrastructure as a service (IaaS) providers (SoftLayer<sup>®</sup>, Amazon AWS, and Microsoft<sup>™</sup> Azure), and platform as a service (PaaS) providers (BlueMix, Cloud Foundry, OpenShift, and Heroku).

For independent software vendors (ISVs) and IBM Business Partners, Liberty profile offers an ideal, premier Java runtime that allows them to start quickly and start small. It also offers a no-cost development offering that provides the flexibility to choose a correctly sized solution as they grow. These solutions can be enhanced as their business expands. This allows them to adopt the latest open standards offerings from the ecosystem that surrounds WebSphere Liberty to cater to new market needs.

For business leaders that are focused on growth, Liberty profile offers the ideal platform to provide a seamless, omni-channel experience so consumers can move effortlessly from one channel to another.

- Easily integrate applications with big data and advanced analytics to better understand customer behavior to help improve customer experience and increase sales through more effective cross-selling and up-selling.
- Improve capabilities in automating operations and integrating composable business services to enable quicker customer response times while cutting operating costs.

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## Planned availability date

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June 26, 2015

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## Description

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The new era of e-commerce and social networks and the rapid growth of mobile, cloud, and analytics is setting new expectations for speed, agility, and user friendliness. This challenges traditional businesses across a large spectrum of industries, such as banking, finance, insurance, health, retail, and telecommunication to deliver enriched customer experiences. Liberty profile delivers the industry's most composable container for delivering the high-speed, customer-centric, front-end applications as well as the transaction-focused back end applications. It delivers tools, runtime, and a rich ecosystem of partner offerings that shorten the time to value and also an application lifecycle that is optimized.

In addition, Liberty profile adds flexible deployment options for hybrid cloud integration. These capabilities enable on-demand scalability, end-to-end security, and autonomic operations that avoid time-consuming and costly activities, such as provisioning, configuration, and integration work.

Continuing the iterative delivery of new capabilities that build upon WebSphere Application Server for z/OS, V8.5, the new features offer enhancements to the WebSphere Application Server for z/OS Liberty profile for development and

production environments. The set of component technologies that are included in the Java EE 7 feature set are optionally installable either as individual features or as a single bundle from the WebSphere Liberty Repository. These new features can be used along with those previously available through WebSphere Liberty Repository.

### **Production-ready Java EE 7 certified environment**

Liberty profile support for Java EE 7 Full Platform expands the successful Java EE 6 offering that was first available in Liberty profile V8.5.0. The continuous delivery model incrementally provided selected Java EE 7 features through the Liberty Repository. This culminates in this final, compliant delivery of Java EE 7 Full Platform. The three major themes for Java EE 7 include:

- **Developing HTML5 applications**  
Liberty profile's support for WebSockets 1.0/1.1 and JSON-P 1.0 provides the ground work for low-latency data exchange and standardized JSON document parsing, respectively. Adding in the updates for Servlet 3.1 and JAX-RS 2.0 allows Liberty profile developers to create dynamic, scalable, and high-performance web applications. The ability of JSF 2.2 to support HTML5 markup provides a more complete framework for building application user interfaces.
- **Increasing developer productivity**  
Java EE 7 continues the developer productivity improvements that were started in Java EE 5. More boilerplate code was removed with the introduction of additional annotations and default resource processing. The key technologies that benefited from these improvements include Java Message Server (JMS) 2.0 and the JAX-RS 2.0 Client API. The use of default resources across several Java EE 7 technologies simplified and improved the initial customer experience. Also, the pruning of several older technologies, such as Container-Managed Persistence (CMP) Entity Beans demonstrates the commitment to staying current.
- **Meeting the demands of enterprise customers**  
Led by IBM, the Java Batch 1.0 specification in Java EE 7 continues to recognize the demands of IBM enterprise customers. Customers can now write Java batch applications by using a standardized API. The Concurrency Utilities 1.0 feature allows for multi-threaded applications, while still maintaining the Java EE qualities of service, such as reliability, scalability, and security.

### **Ease of installing the Java EE 7 certified environment**

The complete set of Java EE 7 Full Platform features can be installed with IBM Installation Manager, or after installation through the use of the featureManager or installUtility commands. Individual Java EE 7 features can also be installed.

### **High-performance threading model**

Liberty profile delivers a new, high-performance threading model that provides a significant performance boost for highly concurrent workloads. It minimizes I/O costs to support larger numbers of concurrent clients with fewer server instances. The new threading model significantly improves the scalability of Web Socket and high transactional workloads, which reduces the latency. The high-performance threading model contributes to improved workload throughput. This helps to maximize businesses competitiveness while minimizing total cost of ownership .

### **Significant performance improvements with IBM Java for z/OS, Version 8 for Liberty profile on z/OS**

Liberty performance is improved across startup, footprint, and runtime with IBM Java for z/OS, Version 8 for multiple workloads. Performance is optimized across multiple platforms. For example, the combined benefits of IBM Java 8 and IBM z Systems™ z13™ features that include Single Instruction Multiple Data (SIMD) vector engine, Symmetric Multi-Threading (SMT), and improved CP Assist for Cryptographic Function (CPACF) provide up to a two times improvement in throughput-per-core

for security-enabled applications and up to a 50% improvement for other generic applications.

### **Enhanced WebSphere Application Server Developer Tools**

The WebSphere Application Server Developer Tools for Eclipse are updated to support Java 8 and the full range of programming models available on Liberty profile, that include the Java EE 7 Full Profile (notably WebSockets, CDI, and Batch) and Session Initiation Protocol (SIP).

Working with Liberty profile from within the tools is easier than ever, with improved repository and proxy server support to install additional features, enhancements to the server configuration editor, and support for deploying applications and configuration straight from a developer's desktop to remote Liberty servers on all platforms supported by Liberty profile, which include z/OS.

### **Simplified scaling and management**

Enhancements to Liberty profile auto-scaling allows deployment of scaling policy to be specified within the server package during deployment, greatly simplifying integration with DevOps tool chain.

### **Enhanced WebSphere Liberty Administration Center (Admin Center)**

Enhancements include new capabilities to allow for easier management of large deployments, as well as providing more information about servers and applications within a collective. Additional enhancements include:

- Ability to customize the resource monitoring view, which include multiple graphs for application statistics, allows administrators to view only the data that they are interested in. The customized view is saved for each user and device. This gives each administrator a personalized view of servers and application metrics.
- Administrative metadata in the form of tags, owner, contacts, and notes can now be set for servers, clusters, and applications through Admin Center. Tags allow administrators to easily search for resources and to create custom groupings to help manage a collective topology.
- Auto-complete suggestions make searching easier and quicker to find resources in a topology.
- Performance enhancements enable Admin Center to manage larger-scale collective environments while maintaining a responsive user experience.

### **Liberty Repository enhancements**

The WebSphere Liberty Repository delivers a composable install experience for Liberty profile, which provides everything from an entire Java EE 7 compliant server to individual, fine-grained server features, open source integration packages and sample administrative configuration snippets. A new Open Source Liberty Asset Repository Service enables anyone to stand up their own repository and populate it with features from the WebSphere Liberty Repository, third-party features, or features that are created in-house. Each install client (Installation Manager, Command Line, and WebSphere Developer Tools) can be configured to federate across any number of repositories. That same Liberty Repository experience can be achieved without the need to step outside the corporate firewall. Development and Operation teams can share features, fostering greater collaboration and re-use.

<https://developer.ibm.com/wasdev/downloads>

### **Security enhancements**

WebSphere Liberty Repository already contains additional security features beyond Java EE 7:

- The Simple and Protected GSSAPI Negotiation Mechanism (SPNEGO) to enable single sign-on (SSO) mechanism for Liberty profile in Kerberos environments. This feature provides capabilities similar to those available for the WebSphere Application Server full profile.

- OpenID and OpenID Connect protocols to help simplify the task of authenticating and authorizing mobile and cloud-centric applications.
- Open Trusted Technology Provider Standard (OTTP-S) Accreditation. WebSphere Application server is now the leading OTTP-S accredited application server provider. WebSphere Application Server incorporated secure engineering practices, which empower businesses to build security and integrity into their end-to-end supply chains. This mitigates the risk of maliciously tainted and counterfeit technology components or products.

[http://securityintelligence.com/open-group-ottps-trust-software-hardware-vendor/#.VUe\\_I fIVikoo](http://securityintelligence.com/open-group-ottps-trust-software-hardware-vendor/#.VUe_I fIVikoo)

### **Extended migration tools**

The WebSphere Application Migration Toolkit is extended with a set of JPA rules to highlight differences in application code when using OpenJPA and EclipseLink. The Migration Toolkit for Application Binaries (Technology Preview) includes new rules to help move applications from WebSphere Application Server full profile to Liberty as well as moving between different versions of Java SE.

### **NoSQL database support**

Liberty profile now supports CouchDB in addition to MongoDB. Both are scalable, well-performing, and are easy-to-use document-style NoSQL databases.

### **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 is capable as of June 26, 2015, when used in accordance with associated IBM 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. A US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested via the IBM website

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

### **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 website

<http://www.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 z Systems IPLA program you selected, refer to the [Terms and conditions](#) section.

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## Statement of general direction

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Consistent with the previously announced statement of direction, it remains the intent of IBM to certify WebSphere Application Server for z/OS full profile to Java EE 7 Full Platform. For details, refer to Software Announcement [215-084](#), dated February 17, 2015.

IBM intends to enable web SSO support with the Security Assertion Markup Language (SAML) standard on WebSphere Application Server for z/OS Liberty profile. SAML facilitates exchanging authentication and authorization data between security domains. SAML support for SSO is already available for WebSphere Application Server for z/OS full profile.

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 about WebSphere Application Server for z/OS, V8.5 continuous delivery, refer to Software Announcement [215-098](#), dated February 17, 2015.

For information about WebSphere Application Server for z/OS, V8.5, refer to Software Announcement [212-106](#), dated April 24, 2012.

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## Availability of national languages

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All supported languages are available.

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## Program number

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Program number	VRM	Program name
5655-W65	8.5	WebSphere Application Server for z/OS
5655-F81	1.1	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-W65	5655-F81

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## 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<sup>(R)</sup> ID and password are required (use IBM ID).

[BP Attachment for Announcement Letter 215-278](#)

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## Publications

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The latest product documentation for WebSphere Application Server for z/OS, V8.5 is found in IBM Knowledge Center at

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

IBM Knowledge Center is the home for IBM product documentation as it brings IBM's technical publications together in a single location. 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. To learn more about how to use the WebSphere Application Server documentation in IBM Knowledge Center, see

<https://www.youtube.com/watch?v=-qFEFCm0Stg>

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<sup>TM</sup> and related technologies is required.



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## Services

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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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## Technical information

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### Specified operating environment

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#### *Software requirements*

For software requirements information, refer to Software Announcement [212-106](#), dated April 24, 2012.

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 the [Terms and conditions](#) section of this announcement, or to the license information document that is available on the IBM Software License Agreement website

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

### Planning information

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#### *Packaging*

This offering is delivered through the Internet. There is no physical media.

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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The programs in this announcement all have Value Unit-based pricing.

Program number	Program name	Value Unit exhibit
5655-W65	WebSphere Application Server for z/OS	VUE007

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

### 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

### 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:

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.

For ordering information, refer to Software Announcement [212-106](#), dated April 24, 2012.

### Charge metric

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

Ordering information is unchanged by this announcement. For more information, refer to Software Announcement [212-106](#), dated April 24, 2012.

### Customized Offerings

Product deliverables are shipped only via CBPDO and ServerPac. 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, refer to the Shopz 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 include:

- 3590
- 3592

Most products can be ordered in ServerPac the month following their availability in CBPDO. z/OS can be ordered via CBPDO and ServerPac 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, visit the Help section on the Shopz website at

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

For additional information on the Product ServerPac option, refer to Software Announcement [212-272](#), 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 shipments will begin two weeks after general availability.

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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>(R)</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 - SoftwareXcel is an option if you desire added services.

## **License Information number**

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

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

## **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 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).

## **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 Supportat*

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

### **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. A 15% education allowance applies to qualified education institution 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-W65	WebSphere Application Server for z/OS	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

<http://www.ibm.com/systems/z/resources/swprice/reference/exhibits/>

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.

<http://www.ibm.com/systems/z/resources/swprice/reference/exhibits/>

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, visit the z Systems Software Pricing website

<http://www.ibm.com/systems/z/resources/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 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.

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

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](#), dated April 7, 2015.

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

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.

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### **On/Off CoD**

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**

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**

The prices are unchanged by this announcement.

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