



# IBM Tivoli Workload Scheduler for z/OS V8.6 provides innovative automation for a better user experience

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## At a glance

IBM® Tivoli® Workload Scheduler for z/OS® V8.6 delivers:

- Enhanced flexibility, dynamic automation, and intrinsic high availability for clients adopting any type of cross-platform Tivoli Workload Scheduler end-to-end solutions such as:
  - Mainframe centric (engine residing on mainframe and agents residing on mixed platforms)
  - Distributed-centric (engine residing on distributed systems and agents residing on mixed platforms)
  - Intermediate (separate engines on mainframe and distributed scheduling environments)
- Support for batch modernization projects, through new capabilities that enable transformation, reuse, and integration of existing assets with Java-based applications and new types of workloads
- Improved usability and scalability

For ordering, contact Your IBM representative or an IBM Business Partner.  
For more information contact the Americas Call Centers at  
800-IBM-CALL (426-2255).

Reference: LE001

## Overview

IBM Tivoli Workload Scheduler for z/OS V8.6 represents an important step forward in streamlining the dynamic automation of end-to-end (cross-platform and cross-application) workloads. It helps to support batch modernization projects, allowing you to transform, reuse, or integrate your existing assets with emerging applications and technologies.

### Key enhancements

Streamlines dynamic automation of end-to-end workloads

- The spectrum of available end-to-end solutions is enriched with a new "distributed-driven" end-to-end, environment, which extends the reach of Tivoli Workload Scheduler (for distributed systems) to mainframe jobs, allowing you to manage your mixed workloads from a distributed oriented concept. Additionally, the z-centric end-to-end environment provides new dynamic capabilities, for

better optimization and resilience, and synchronization among any combination of z/OS and distributed engines is straightforward, through cross dependencies.

Supports batch modernization projects

- Tivoli Workload Scheduler for z/OS assists in modernizing batch infrastructure to make it more flexible and more responsive for new business and functional requirements. Tivoli Workload Scheduler for z/OS takes advantage of workload automation services such as Java™ API and Web Services, to support transformation and reuse of traditional assets through modern technologies. Most importantly, it helps integrate automation of traditional workloads and applications with emerging types of jobs in a z-centric end-to-end environment, through an extensible plug-in framework. Additionally, the integration of the z-centric end-to-end configuration is certified to run on IBM zEnterprise, simplifying the effort of managing workloads running on hybrid resources through a workload automation functional consistency, and reinforcing the value of the zEnterprise™.

Provides a better user experience

- Tivoli Workload Scheduler for z/OS provides enhanced usability and scalability. In particular, the ISPF Dialog panels are restyled to aggregate all related information in scrollable panels, improving speed of use. Various enhancements are implemented for further improvement of scalability. Batch generation of Tivoli Workload Scheduler for z/OS reports are provided through the Tivoli Dynamic Workload Console to asynchronously launch reports and schedule them. Note that the Job Scheduling Console user interface component, previously shipped with Tivoli Workload Scheduler for z/OS, is no longer available in V8.6 and has been replaced with the Tivoli Dynamic Workload Console component.

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## Key prerequisites

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Refer to the [Software requirements](#) and [Hardware requirements](#) sections.

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## Planned availability date

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July 29, 2011

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## Description

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IBM Tivoli Workload Scheduler for z/OS V8.6 is the premier enterprise workload automation product for System z® and end-to-end environments. It automates the planning, processing, and analysis of batch and event-based enterprise production workloads. This helps improve IT operation efficiency and reduce manual labor by maximizing throughput of work across the enterprise.

Tivoli Workload Scheduler for z/OS is part of an integrated suite of scheduling products that enables systematic enterprise-wide workload processing for both batch and event-based (real-time) workloads across applications and platforms.

In an end-to-end solution, the distributed portion of the network can span over a multilevel topology of fault-tolerant agents (agents capable to continue scheduling even in the absence of the link to the Tivoli Workload Scheduler for z/OS server).

### Key enhancements

#### Consolidation of the product role as the backbone for enterprise scheduling

- IBM Tivoli Workload Scheduler distributed Agent for z/OS is designed to extend the reach of Tivoli Workload Scheduler (for distributed systems) automation to mainframe jobs, and reuse workload automation processes and procedures

already in place to manage mixed workloads. When connected to the dynamic workload broker component of Tivoli Workload Scheduler, the agent produces a new end-to-end environment, called d-centric end-to-end, which enables the integration of mainframe, distributed, and external application workloads, and automation from within a Tivoli Workload Scheduler concept.

In order to deploy the d-centric end-to-end environment, the following products must be integrated:

- IBM Tivoli Workload Scheduler distributed Agent for z/OS (program number 5698-AA3).
- IBM Tivoli Workload Scheduler (program number 5698-WSH). Refer to the [Reference information](#) section for more information.
- Optional IBM Tivoli Workload Scheduler agents (program number 5698-WSH) and components. Components are available on ShopzSeries. Refer to the Ordering z/OS through the Internet section for more information on ShopzSeries.
- A new dynamic domain manager component is designed to bring both optimization and resiliency to the execution of workloads in a z-centric end-to-end environment. Z-centric end-to-end with dynamic scheduling capabilities provides automatic execution of workloads to best available machines, according to resource requirements and user policies. By implementing resource-based scheduling, the dynamic z-centric solution implements a high-availability mechanism, where workloads follow resource movements and are not affected by planned or unplanned resource outages.

In order to deploy the z-centric end-to-end environment with dynamic capabilities, the following products must be integrated:

- IBM Tivoli Workload Scheduler for z/OS (program number 5698-A17).
- IBM Tivoli Workload Scheduler Agent for z/OS (part number D0C4SLL within PID 5698-WSH).
- IBM Tivoli Workload Scheduler (program Number 5698-WSH). Refer to the [Reference information](#) section for more information.
- Optional components. Refer to components available on ShopzSeries.
- New cross dependencies are provided to synchronize the workload execution of two Tivoli Workload Scheduler scheduling environments. The cross dependencies capability helps define and monitor workflows spanning multiple engines, providing further flexibility in mapping business scenarios. It can greatly benefit those who have chosen - for business or organizational reasons - to manage mainframe and distributed workloads through separate engines, or who have installed multiple instances of the same engine.

Cross-dependencies are for clients who run a combination of the following two components:

- IBM Tivoli Workload Scheduler for z/OS (program number 5698-A17) or IBM Tivoli Workload Scheduler (program Number 5698-WSH). Refer to the [Reference information](#) section for more information on Tivol Workload Scheduler (distributed).
- Optional IBM Tivoli Workload Scheduler agents (program number 5698-WSH) and components. Refer to components available on ShopzSeries.
- A multiple engine monitoring view provides aggregated monitoring queries about jobs running on distributed and z/OS engines, in a single Tivoli Dynamic Workload Console view. This monitoring view can greatly benefit those who have chosen - for business or organizational reasons - to manage mainframe and distributed workloads through separate engines, or who have installed multiple instances of the same engine. Note that the Job Scheduling Console user interface component, previously shipped with Tivoli Workload Scheduler for z/OS, is no longer available in V8.6 and has been replaced with the Tivoli Dynamic Workload Console component.

In order to implement a multiple engines monitoring view, the following components must be integrated:

- IBM Tivoli Workload Scheduler for z/OS (program number 5698-A17) or IBM Tivoli Workload Scheduler (program Number 5698-WSH). Refer to the [Reference information](#) section for more information on Tivoli Workload Scheduler (distributed).
- Tivoli Dynamic Workload Console. Refer to components available on ShopzSeries.
- z/OS connector, if the Tivoli Dynamic Workload Console is connected to IBM Tivoli Workload Scheduler for z/OS. Refer to components available on ShopzSeries.

### **Evolution in support of batch modernization projects**

- Exposing the Tivoli Workload Scheduler for z/OS scheduling services through the Java API, using the z/OS Connector support of System z, enables the transformation of traditional Tivoli Workload Scheduler for z/OS programming interfaces to a Java API, consequently offloading MIPS to zAAP, which helps provide cost reduction.
- Exposing basic Tivoli Workload Scheduler for z/OS scheduling services, such as Web Services, provides a new web service for job submission that prompts for variable substitution. This is optionally preceded by jobstreams and dependencies modifications for "Batch as a Service" model implementation.
- Flexible workload automation in a z-centric end-to-end configuration, through an extensible plug-ins framework, is designed to make it easier for you and your Business Partners developing application plugins using a workbench, and to add new types of applications to the workload automation. When deployed, the new application plugins will make the product able to manage the new types of applications in the same fashion as the native job types.
- Z-centric end-to-end configuration has been certified to run on zEnterprise. This integration reinforces the value of the zEnterprise by simplifying the effort of managing workloads running hybrid resources through a functional consistency from a single point of control.

### **Extremely improved user experience**

- Improved speed of use of Tivoli Workload Scheduler for z/OS operations is provided through enhanced and restyled ISPF Dialog panels. All the information on current plan operations and application definitions are now in single scrollable panels, eliminating the need to navigate across the panels to find the right information or to issue the desired commands. New panels also provide color-coded information for operation and application status.
- Automatic retrieval of joblogs for "ended in error" jobs is provided when running Tivoli Workload Scheduler for z/OS restart and cleanup function. This enhancement helps prevent the risk of a failure in case of manual cleanup of datastore datasets that you may need to perform to reduce the disk space dedicated to the joblogs of all submitted jobs.
- Improved scalability through Extended VSAM support for Tivoli Workload Scheduler for z/OS JS VSAM file. The JS file stores JCL for each job that has been submitted through Tivoli Workload Scheduler for z/OS, therefore, in large shops it can reach the 4 gigabyte limit of the VSAM files, forcing the user to perform cleanup actions. The support of Extended VSAM has removed this limitation.
- Batch generation of Tivoli Workload Scheduler for z/OS reports is available through the Tivoli Dynamic Workload Console to asynchronously launch reports and schedule them.
- You can export Tivoli Dynamic Workload Console configuration settings in XML definitions for easy import into other scheduling environments.

### **Accessibility by people with disabilities**

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A U.S. 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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Tivoli Workload Scheduler for z/OS is capable as of July 29, 2011 when used in accordance with IBM's associated documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it. A US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested on the following website

<http://www-03.ibm.com/able/>

## Business Partner information

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

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=211-260>

## Value Unit-based pricing

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

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

Subsequent acquisitions of Value Unit priced programs offer additional price benefits. The quantity of each System z IPLA program that you have acquired is referred to as **entitled license capacity**. If you wish to grow your entitled license capacity for a System z IPLA program, the calculation to determine additional needed Value Units is based upon the number of Value Units already acquired.

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

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

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

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

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

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

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## Product positioning

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IBM Tivoli Workload Scheduler for z/OS V8.6 is a modern enterprise scheduler with the needed flexibility designed to help you adapt to your most demanding process complexity and scalability needs. With the possibility to host the complete stack on a single machine, it can be an entry-level product that offers the novice user a path to progressively learn and benefit from the product.

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## Reference information

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Refer to Software Announcement [211-263](#), dated July 26, 2011.

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## Program number

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Program number	VRM	Program name
5698-A17	8.6	IBM Tivoli workload scheduler for z/OS
5698-AA3	8.6	IBM Tivoli workload Scheduler distributed Agent for z/OS

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## Product identification number

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Program PID Number	Subscription and Support PID Number
5698-A17	5698-S51
5698-AA3	5698-R44

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## Education support

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Comprehensive education for IBM Tivoli products is offered through Worldwide Tivoli Education Delivery Services. A wide range of training options are available, including classes led by instructors, learning on demand, on-site training, and blended learning solutions.

For additional information, visit

<http://www-306.ibm.com/software/tivoli/education/>

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## Offering Information

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Product information is available via the Offering Information website

<http://www.ibm.com/common/ssi>

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## Publications

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No publications are shipped with this product.

The IBM Publications Center

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

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. Payment options for orders are via credit card (in

the U.S.) or customer number for 20 countries. A large number of publications are available online in various file formats, and they can all be downloaded by all countries, free of charge.

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## Technical information

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### Specified operating environment

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#### Hardware requirements

Tivoli Workload Scheduler for z/OS V8.6 and its components run on the hardware platforms that support the operating systems listed in the Software requirements section.

#### Software requirements

The following table lists the operating systems and related hardware supported by IBM Tivoli Workload Scheduler for z/OS V8.6, Tivoli Workload Scheduler distributed Agent for z/OS, and its components (Tivoli Dynamic Workload Console, z/OS Connector, and Tivoli Workload Scheduler for z/OS Agent).

For a detailed list of supported operating systems, software requirements, and hardware requirements, refer to the IBM Tivoli Workload Scheduler System Requirements document. This document will be available at general availability at

[http://publib.boulder.ibm.com/infocenter/tivihelp/v47r1/index.jsp?topic=/com.ibm.tivoli.itws.doc\\_8.6/welcome\\_TWA.html](http://publib.boulder.ibm.com/infocenter/tivihelp/v47r1/index.jsp?topic=/com.ibm.tivoli.itws.doc_8.6/welcome_TWA.html)

### Tivoli Workload Scheduler for z/OS V8.6 and Tivoli Workload Scheduler distributed Agent for z/OS

Operating system	Hardware
z/OS v1.10	System z
z/OS v1.11	System z
z/OS v1.12	System z

### Tivoli Workload Scheduler for z/OS V8.6 components

Operating system	Hardware	TDWC (1)	Z/OS connector	TWS for z/OS Agent
AIX 5L V5.3	System i® System p®			X X X
AIX 5L V6.1 and V7.1		X	X	X
Operating system	Hardware	TDWC (1)	Z/OS connector	TWS for z/OS Agent
IBM i5/OS® V5.4, V6.1, and V7.1	System i			X
Operating system	Hardware	TDWC (1)	Z/OS connector	TWS for z/OS Agent
HP-UX 11i v2	PA-RISC and Itanium	X	X	X
HP-UX 11i v3	Itanium®	X	X	X
Operating system	Hardware	TDWC (1)	Z/OS connector	TWS for z/OS Agent
Solaris 9	SPARC	X	X	X
Solaris 10	SPARC	X	X	X

Solaris 10 AMD (Opteron)				X
Operating system	Hardware	TDWC (1)	Z/OS connector	TWS for z/OS Agent
Red Hat Enterprise Linux (RHEL) 5.0	System x® and System i (AMD64, EM64T) Kernel 32	X	X	X
	System x (AMD64, EM64T) Kernel 64	X	X	X
	System i Kernel 64	X	X	X
	System p Kernel 64	X	X	X
	System z Kernel 64	X	X	X
Operating system	Hardware	TDWC (1)	Z/OS connector	TWS for z/OS Agent
Red Hat Enterprise Linux (RHEL) 6.0	System x Kernel 32	X	X	X
	System x Kernel 64	X	X	X
	System i Kernel 64	X	X	X
	System p Kernel 64	X	X	X
	System z Kernel 64	X	X	X
Operating system	Hardware	TDWC (1)	Z/OS connector	TWS for z/OS Agent
SUSE Linux® Enterprise Server 10.0	System x (IA32) and System i (AMD64 and EM64T) Kernel 32			X
	System x KERNEL 64			X
	System i Kernel 64	X	X	X
	System z Kernel 64	X	X	X
	System p Kernel 64	X	X	X
	Desktop Kernel x86-32, x86-64			
Operating system	Hardware	TDWC (1)	Z/OS connector	TWS for z/OS Agent
SUSE Linux Enterprise Server 11.0	System x (IA32) and System i (AMD64 and	X	X	X



	EM64T) kernel 32				
	System x kernel 64	X	X	X	
	System i kernel 64	X	X	X	
	System z kernel 64	X	X	X	
	System p kernel 64	X	X	X	
	Desktop kernel x86-64 64				X
Operating system	Hardware	TDWC (1)	Z/OS connector	TWS for z/OS Agent	
Windows Server 2003 Standard, Enterprise, and Datacenter Editions					X
Windows Server 2003 Standard, Enterprise, and Datacenter Editions					X
Windows Server 2008 Standard, Enterprise, and Datacenter Editions		X	X		X
Windows Server 2008 Standard, Enterprise, and Datacenter Editions For AMD64 and EM64T kernel 64		X	X		X
XP Professional with SP3	x86-32	X	X		X
Vista Ultimate	x86-32				X
Desktop windows® Vista	x86-32				X
Vista for AMD64 and EM64T	x86-64				X
Vista Enterprise with FDCC	x86-64				X
Desktop windows Vista Enterprise with FDCC	x86-64				X
Desktop windows 7 Enterprise with FDCC	x86-64				X
Desktop windows 7 Enterprise	x86-64				X

Note:

1. The Tivoli Dynamic Workload Console is included in this table to assist you in planning.

The following Tivoli Workload Scheduler for z/OS functions require specific IBM programs:

- The graphic function requires a terminal supporting Graphic Data Display Manager (GDDM/MVS) V2R2, or later.
- Tracking resource availability requires Resource Object Data Manager (RODM) in Tivoli NetView® for z/OS.
- Schedule generic alerts, as defined by that NetView release and to specify an alert receiver ID other than the default receiver, requires Tivoli NetView for z/OS.
- User authority support functions require z/OS Security Server RACF® V1.10, or later.
- The end-to-end enabler requires and uses UNIX® System Services (USS).
- Catalog management function to recall migrated data sets requires z/OS DFSMS™ with Hierarchical Storage Management component.
- The Tivoli Workload Scheduler for z/OS Control Language tool requires IBM Compiler Library for REXX/370 (5695-014) or the IBM Alternate Library for REXX™ on System z that can be downloaded from <http://www-01.ibm.com/support/docview.wss?rs=960&uid=swg24006107>
- Scheduling end-to-end in the distributed environment requires Tivoli Workload Scheduler.
- The Java program, used by the reporting and event-driven workload automation function, requires IBM 64-bit SDK for z/OS, Java Technology Edition, V6.
- History functionality requires IBM DB2® for z/OS V9.1, or later.
- Reporting functionality requires IBM DB2 V9.7 for Linux, UNIX, and Windows.
- Tivoli Dynamic Workload Console requires Internet Explorer V7.0, V8, or Firefox V3.

### **Prerequisites**

Tivoli Workload Scheduler for z/OS V8.6 has no mandatory prerequisite on any database, except for:

- The history functionality that requires IBM z/OS V1.10, or later.
- The reporting functionality that requires IBM DB2 9.7 for Linux, UNIX, and Windows.

IBM Tivoli Workload Scheduler V8.6 is a prerequisite for Tivoli Workload Scheduler distributed Agent for z/OS V8.6. Refer to the [Reference information](#) section for more information on Tivoli Workload Scheduler.

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.

### **Planning information**

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

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

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

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

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

## **Packaging**

IBM Tivoli Workload Scheduler for z/OS V8.6 is distributed with:

- International Program License Agreement (Z125-3301)
- License Information document
- Tape
- Publications (refer to the [Publications](#) section)

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

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The products in this announcement use the security and auditability features of the operating system software. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

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## **Software Services**

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

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

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

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## **Licensing metric definitions and pricing examples**

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### **IBM Tivoli Enhanced Value-Based Pricing terminology definitions**

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#### **Engine**

An engine is also referred to as a central processor (CP) or processor. Engines for traditional workloads are called General Purpose CPs. Engines for Linux workloads are called Integrated Facility for Linux (IFL) engines or Linux-only engines. Engines for Coupling Facility workloads are called ICF engines.

#### **IBM Integrated Facility for Linux (IFL)**

This optional facility enables additional processing capacity exclusively for Linux workload, with no effect on the model designation of a System z or OS/390® server. Consequently, executing Linux workload on the IBM IFL will not, in most cases, result in any increased IBM software charges for z/OS, OS/390, VM, VSE, or TPF operating systems and applications. There is, as indicated, a charge associated with the IFL, and there may also be a charge for applications which run on the IFL.

The IFL may be dedicated to a single Linux-mode logical partition or it may be shared by multiple Linux-mode logical partitions. Installations should note that the Linux workspace enabled by this facility will not support any of the traditional S/390® operating systems (OS/390, TPF, VSE, or VM). Only Linux applications or Linux operating in conjunction with the Virtual Image Facility, an environment that operates within a logical partition or in native S/390 mode and provides the capability to create multiple Linux images, are supported by IBM S/390 IFL.

## Millions of Service Units (MSUs)

MSU is defined as millions of CPU service units per hour, which is the measure of capacity used to describe the computing power of the hardware processors on which S/390 or System z software runs. Processor MSU values are determined by the hardware vendor, IBM, or Software Compatible Vendors (SCVs).

For more detailed information about System z software pricing, visit

<http://www-03.ibm.com/systems/z/resources/swprice/>

## Standby or backup systems

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

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

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

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

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

Doing work includes, for example, production, development, program maintenance, and testing. It also could include other activities such as mirroring of transactions, updating of files, synchronization of programs, data or other resources (for example, active linking with another machine, program, database or other resource, and so on), or any activity or configurations that would allow an active hot switch or other synchronized switch over between programs, databases, or other resources to occur.

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

## Value Units

A Value Unit (VU) is a unit of measure by which the Program can be licensed. Value Unit entitlements are based on the quantity of a specific designated measurement, for example MSUs, Users, Engines, Tape Drives, etc., for the given software. Licensee must obtain sufficient entitlements for the number of Value Units required for Licensee's environment as specified in the specific Program terms. The Value Unit entitlements are specific to the Program and may not be exchanged, interchanged, or aggregated with other Value Unit entitlements of another program.

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## Pricing examples

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### IBM Tivoli Workload Scheduler for z/OS and IBM Tivoli Workload Scheduler distributed Agent for z/OS

If the customer has installed 1,500 MSUs, the total number of Value Units will be:

MSUs		Value Units/MSU	Value Units
Base	3	1.00	3.00
Tier A	42	.15	6.30
Tier B	130	.08	10.40
Tier C	140	.04	5.60
Tier D	1,185	.03	35.55
Total	1,500		60.85

When calculating the total number of Value Units, the sum is rounded up to the next integer. So the customer will need to license 61 Value Units in this example.

System	Value Units/System
MP3000 H30	3
MR3000 H50	4
MP3000 H70	6
ESL Models	1

Value Units for IBM 9672 processors are based upon the full capacity of these systems. This is applicable to all System z systems measured on MSU capacity. Information on MSU capacities can be found in the IBM System/370™, System/390®, and zSeries® Machine Exhibit, Z125-3901.

### Value Unit Exhibit VUE020

Level	Minimum	Maximum	Value Units/MSU
Base	1	3	1
Tier A	4	45	0.15
Tier B	46	175	0.08
Tier C	176	315	0.04
Tier D	316	+	0.03

Value Units for mainframes without MSU ratings: Value Unit

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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
5698-A17	Tivoli workload Scheduler for z/OS V8.6	VUE020
5698-AA3	Tivoli workload Scheduler distributed Agent for z/OS V8.6	VUE020

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

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

### Value Unit exhibit VUE020

Level	Minimum	Maximum	Value Units/MSU
Base	1	3	1
Tier A	4	45	0.15
Tier B	46	175	0.08
Tier C	176	315	0.04
Tier D	316	+	0.03

Value Units for mainframes without MSU ratings:

HW	value Units/machine
MP3000 H30	3
MP3000 H50	4
MP3000 H70	6
ESL Models	1

### Ordering z/OS through the Internet

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

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

### Current licensees

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Current licensees of Tivoli Workload Scheduler for z/OS can order the new distribution medium via MES by specifying the desired distribution medium feature number.

### New licensees

Orders for new licenses will be accepted now.

Shipment will begin on the planned availability date.

### Basic license

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#### Ordering information for MSU-based System z offerings:

Translation from MSUs to value Units

	MSUs	Value Units/MSU
Base	1-3	1.00
Tier A	4-45	.45

Tier B	46-175	.36
Tier C	176-315	.27
Tier D	316+	.20

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

Program name: IBM Tivoli workload Scheduler for z/OS V8.6  
 Program PID: 5698-A17

Entitlement Identifier	Description	License option/ Pricing metric
S010CXL	IBM Tivoli workload Scheduler for z/OS	Basic OTC, per Value Unit Basic OTC, per MSU-day TUC

Orderable supply ID	Language	Distribution medium
S015SJL	German	3590 Tape Cartridge, CD-ROM, and Hardcopy Pub
S015SJK	English	3590 Tape Cartridge, CD-ROM, and Hardcopy Pub
S015SJN	Spanish	3590 Tape Cartridge, CD-ROM, and Hardcopy Pub
S015SJM	Japanese	3590 Tape Cartridge, CD-ROM, and Hardcopy Pub
S016S7F	Korean	3590 Tape Cartridge, CD-ROM, and Hardcopy Pub

Subscription and Support PID: 5698-S51

Entitlement identifier	Description	License option/ Pricing metric
S010CSM	Tivoli workload Scheduler for z/OS S&S	Basic ASC, per Value Unit SW S&S No charge, decline SW S&S Per MSU SW S&S registration

Orderable supply ID	Language	Distribution medium
S010CTM	German	Hardcopy publication
S010CTN	English	Hardcopy publication
S010CTR	Spanish	Hardcopy publication
S010CTP	Japanese	Hardcopy publication
S016SC3	Korean	Hardcopy publication

Program name: IBM Tivoli workload Scheduler distributed Agent for z/OS V8.6  
 Program PID: 5698-AA3

Entitlement Identifier	Description	License option/ Pricing metric
S016RW4	IBM Tivoli workload Scheduler distributed Agent for z/OS	Basic OTC, per Value Unit Basic OTC, per MSU-day TUC

Orderable supply ID	Language	Distribution medium
S016RW5	English	3590 Tape Cartridge, CD-ROM, and Hardcopy

Subscription and Support PID: 5698-R44

Entitlement identifier	Description	License option/ Pricing metric
S016RW7	IBM Tivoli workload Scheduler Distributed Agent for z/OS S&S	Basic ASC, per Value Unit SW S&S No charge, decline SW S&S Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S016RW9	English	Hardcopy publication

### Subscription and Support

Subscription and Support must be ordered to receive voice technical support via telephone during normal business hours, and future releases and versions, at no additional charge. The capacity of Subscription and Support (for example, Value Units or number of processors) must be the same as the capacity ordered for the product licenses.

To order, specify the Subscription and Support program product number 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 Support Maintenance (IAASM). This offering:

- Includes and extends the support services provided in the base support to include technical support via telephone during normal business hours.
- Entitles customers to future releases and versions, at no additional charge. Note that the customer is not entitled to new products.

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

### Customized Offerings

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

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

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

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

- 3590
- 3592

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

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



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## Terms and conditions

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The information provided in this announcement letter is for reference and convenience purposes only. The terms and conditions that govern any transaction with IBM are contained in the applicable contract documents such as the IBM International Program License Agreement, IBM International Passport Advantage® Agreement, and the IBM Agreement for Acquisition of Software Maintenance.

### ***Licensing***

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

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

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

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

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

IBM System z Operational Support Services - SoftwareXcel is an option if you desire added services.

### ***License Information form number***

- IBM Tivoli Workload Scheduler for z/OS V8.6 (5698-A17): L-SCAE-8G6HVB
- IBM Tivoli Workload Scheduler distributed Agent for z/OS V8.6 (5698-AA3): L-SCAE-8FVJ2B

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***

Yes

### ***Limited warranty***

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

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

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

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

***Program support***

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

***Money-back guarantee***

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

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

***Other terms***

***Volume orders (IVO)***

No

***IBM International Passport Advantage Agreement***

***Passport Advantage applies***

No

***Usage restriction***

Yes. Usage is limited to the quantity of Value Units licensed.

For additional information, refer to the License Information document that is available on the IBM Software License Agreement website

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

***Software Subscription and Support applies***

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

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

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

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

Yes

***System i Software Maintenance applies***

No

### **Variable charges apply**

No

### **Educational allowance available**

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

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

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

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

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

Program number	Program name	Terms
5698-A17	IBM Tivoli workload Scheduler for z/OS	Execution-based
5698-AA3	IBM Tivoli workload Scheduler distributed Agent for z/OS	Execution-based

### **Full-capacity mainframes**

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

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

For more information on mainframe MSU-rated capacities, visit

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

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

### **Sub-capacity mainframes**

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

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

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

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

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

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

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

For more information on sub-capacity System z IPLA terms and conditions, refer to Software Announcement [204-184](#), dated August 10, 2004.

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

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

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

- That meets the criteria defined in Hardware Announcement [198-001](#), dated January 13, 1998
- Where MLC pricing is aggregated across the sysplex

### **Sub-capacity eligibility**

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

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

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

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

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

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

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

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

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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 Capacity on Demand (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 System z On/Off Capacity on Demand (Z125-7883) must be signed prior to use.

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## **IBM Electronic Services**

IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, visit

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

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## **Prices**

Information on charges is available at website

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

In the Electronic tools category, select the option for Purchase/upgrade tools.

## Passport Advantage

For Passport Advantage and charges, contact your IBM representative or your authorized IBM Business Partner. Additional information is also available at

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

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## Order now

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To order, contact your local IBM representative or your IBM Business Partner.

To identify your local IBM Business Partner or IBM representative, call 800-IBM-4YOU (426-4968). For more information, contact the Americas Call Centers.

Phone: 800-IBM-CALL (426-2255)  
Fax: 800-2IBM-FAX (242-6329)  
For IBM representative: [callserv@ca.ibm.com](mailto:callserv@ca.ibm.com)

For IBM Business Partner: [pwswna@us.ibm.com](mailto:pwswna@us.ibm.com)

Mail: IBM Teleweb Customer Support  
ibm.com® Sales Execution Center, Americas North  
3500 Steeles Ave. East, Tower 3/4  
Markham, Ontario  
Canada L3R 2Z1

Reference: LE001

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

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

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