IBM Tivoli Workload Scheduler for z/OS V9.1 provides improved productivity, increased flexibility, and a new mechanism to serve peak or temporary workloads in end-to-end environments

At a glance

IBM® Tivoli® Workload Scheduler for z/OS® V9.1 delivers:

- Enhanced scheduling rules with new flexible and powerful run cycle groups
- Enhanced orchestration with additional criteria to decide how to resolve dependencies between jobs
- Enhanced flexibility to move distributed applications into the cloud
- Automatic upgrade of agents in a z-centric configuration
- Self-service catalog interface to easily trigger and monitor business services
- FIPS 140-2 compliance

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

Overview

IBM Tivoli Workload Scheduler for z/OS V9.1 helps automate, monitor, and control background workflows running in support of business services throughout the enterprise IT infrastructure. When used in combination with IBM Tivoli Workload Scheduler (distributed) components, it allows for managing end-to-end workflows (workflows spanning mainframe and distributed systems) from within IBM Tivoli Workload Scheduler for z/OS controller.

IBM Tivoli Workload Scheduler for z/OS V9.1 provides improved productivity with new scheduling management capabilities and increased flexibility with an enhanced ability to meet Service Level Agreement (SLA). In end-to-end enterprise environments, it allows you to run distributed workflows on just-in-time provisioned resources during peak or temporary workloads in an effort to help minimize fixed costs.

These new capabilities include:

- Run cycle group which is a set of run cycles combined together to define run dates. It is a new distinct object, separated from the applications and, as such, it decouples the scheduling logic from the scheduled objects, allowing you to define run cycle groups once and use them for as many applications as you want. Also,

run cycle groups can be combined at various levels, for additional flexibility in mapping complex scenarios. This can help minimize manual intervention, since the need for creating periods, that must be changed every year, is drastically reduced.

- Enhanced choreography phase that introduces additional criteria to resolve job dependencies plus the option to make a dependency mandatory for the plan to complete.
- Creation of historical reports for SLA jobs, for future analysis, tuning, and environment optimization.
- Self-service catalog interface, which is a new interface for business users so they can trigger a business service and monitor its execution without having to develop any knowledge about IBM Tivoli Workload Scheduler.
- Potentially simplifying the upgrade process through unified and automatic management of distributed agents upgrades and rollbacks in an end-to-end environment, where IBM Tivoli Workload Scheduler for z/OS V9.1 manages the distributed jobs through the IBM Tivoli Workload Scheduler for z/OS Agent. With the integration of IBM Tivoli Endpoint Manager, IBM Tivoli Workload Scheduler for z/OS V9.1 lets you centrally retrieve information at the agent's maintenance level and establishes the criteria to trigger the upgrade.
- Ability to save resource costs, and manage peaks or temporary workloads using newly provisioned resources in an end-to-end environment, where IBM Tivoli Workload Scheduler for z/OS manages the distributed jobs through the IBM Tivoli Workload for z/OS Agent V9.1. With the integration of SmartCloud Provisioning, IBM Tivoli Workload Scheduler for z/OS V9.1 allows you to run distributed jobs on just-in-time provisioned resources that can be recovered and reused once the jobs have completed. This represents a new and cost effective way to manage applications that need to run for a short period of time.

Key prerequisites

Refer to the Software requirements and Hardware requirements sections.

Planned availability date

- July 5, 2013

Description

IBM Tivoli Workload Scheduler for z/OS V9.1 enhancements

Streamlined scheduling logic

Run cycles and periods are key elements in the scheduling logic used to determine when the work will run. Version 9.1 introduces the run cycle group as a new distinct database object. The run cycle group is a set of run cycles that are combined together to produce a list of run dates. Being independent from the applications, it decouples the scheduling logic from the scheduled objects. This implies that the same run cycle group can be used by more than one application and that an application can use a mix of its own run cycles and one or more run cycle group. With run cycle groups, the scheduling logic has new constructions to be able to map all environment constraints and dependencies. In fact, inside run cycle groups, subsets of run cycles can be defined and logical rules can be applied to subsets rather than to all the run cycles in the group. Finally, run cycle groups can be used as periods and this reduces the manual effort to a minimum level. In fact, periods need annual maintenance, while run cycle groups are permanent objects. The flexibility provided by run cycle groups reduces the need for periods and, therefore, the manual maintenance effort, to a minimum level. Added flexibility allows seamless imitation of independent software vendor schedulers and, therefore, reduces the time and cost of migration from competitors.

Enhanced choreography flexibility

As a fundamental part of the modeling phase, IBM Tivoli Workload Scheduler for z/OS V9.1 allows the user to link workloads in workflows through dependencies that are indicated in long term plan as well as daily plan. Tivoli Workload Scheduler V9.1 introduces additional ways to resolve dependencies. By doing so, it provides more flexibility to match customer scenarios and imitates the Tivoli Workload Scheduler (distributed) component, facilitating movements from mainframe to distribute or vice versa.

With IBM Tivoli Workload Scheduler V9.1, criteria to solve dependencies can be indicated by the user. Based on those criteria, a job can be linked to the predecessor with the closest input arrival time within the same day, or within a relative interval, or within an absolute interval.

An example is if job A runs every Friday and job B runs every day, and the desire is to have job B depend on job A on Friday, you can then use the new matching criteria to link job B to the instance of job A which is the which is the closest preceding within the same day. In the absence of the criteria, Saturday's instance of job B would link to Friday's instance of job A, if that instance is still in the plan. Another important feature is represented by the mandatory dependency. Users can define, at various degrees, if the resolution of a dependency is mandatory for the long term plan and the daily plan to complete. Mandatory dependencies are useful to prevent unwanted running of jobs that depend on event-driven (rather than calendar-driven) jobs. With IBM Tivoli Workload Scheduler's flexible and competitive scheduling scenarios, you can reduce migration time and costs when migrating from a competitor.

Compliance to mandatory regulation (Federal Information Processing Standards (FIPS))

IBM Tivoli Workload Scheduler for z/OS V9.1 complies with FIPS standard over Secure Socket Layer (SSL) secured connections. It can be configured so that IBM Tivoli Workload Scheduler for z/OS activates FIPS 140-2 compliance when scheduling end-to-end configurations with z-centric agents or with fault-tolerant agents, and in the communications between the controller and the following interfaces: Tracker, Server, DataStore, remote ISPF dialogue, program interface (PIF).

Workload Service Assurance enhancements

Workload Service Assurance is a key feature that supports Service Level Agreement (SLA) jobs. IBM Tivoli Workload Scheduler for z/OS V9.1 enhances this feature with the ability to get SLA job information, such as latest start time or promotion flag, into historical reports.

Streamline upgrades in IBM Tivoli Workload Scheduler for z/OS z-centric environments

In an end-to-end environment, where IBM Tivoli Workload Scheduler for z/OS manages the distributed jobs through the IBM Tivoli Workload for z/OS Agent (also know as z-centric), V9.1 simplifies the upgrade process through unified and automatic management of distributed agents upgrade and rollback. Because of the integration with Tivoli Endpoint Manager, IBM Tivoli Workload Scheduler for z/OS V9.1 lets you centrally get information on the agents' maintenance level and establish the criteria to trigger the upgrade.

Run applications on just-in-time provisioned resources

In an end-to-end environment, where IBM Tivoli Workload Scheduler for z/OS manages the distributed jobs through z-centric, you are able to save resource costs, and manage peaks or temporary workloads using newly provisioned resources. Because of the integration with SmartCloud Provisioning, IBM Tivoli Workload Scheduler for z/OS V9.1 runs distributed jobs on just-in-time provisioned resources, which can be recovered and reused once the jobs are complete. This represents a

cost effective way to manage applications that need to be run for a short period of time (for example, applications that support a concert ticketing system).

Workload Service Assurance in IBM Tivoli Workload Scheduler for z/OS z-Centric environments

Workload Service Assurance is a key feature to support SLA jobs. In end-to-end environments, where IBM Tivoli Workload Scheduler for z/OS manages the distributed jobs through the IBM Tivoli Workload for z/OS Agent (z-centric), V9.1 introduces the possibility to automatically promote distributed jobs when they are on the critical path and their delay is threatening the critical job deadline. The promotion algorithm leverages the option of the operating system, accelerating their execution to get the target date on track.

Event Driven Workload Automation in IBM Tivoli Workload Scheduler for z/OS z-centric environments

Event Driven Workload Automation is a key feature that enables external events to trigger automatic scheduling actions. IBM Tivoli Workload Scheduler for z/OS V9.1 implements monitoring capabilities in IBM Tivoli Workload for z/OS Agents (z-centric). Therefore, deploying an additional IBM Tivoli Workload Scheduler (distributed) component in end-to-end environments, where IBM Tivoli Workload Scheduler for z/OS manages the distributed jobs through the IBM Tivoli Workload for z/OS Agent (z-centric), the Event Driven Workload Automation capability can be implemented. In response to external events, occurring on distributed systems, the z-centric agent sends an event to the event manager process, running in the IBM Tivoli Workload Scheduler (distributed) component, which in turn triggers IBM Tivoli Workload Scheduler for z/OS to submit a job.

Self-service catalog interface

In addition to the rich Dynamic Workload Console dedicated to power users and specialized operators, IBM Tivoli Workload Scheduler for z/OS V9.1 contains a simplified business interface formatted for mobile devices. In the new interface, existing jobstream assets are reformatted as friendly service items, organized in a typical catalog structure. The business user can browse the catalog, pick a service, firm up its running parameters, and launch a personal instance of that service, with the ability to simply track the progress until completion or until some error prevents a normal end. Secured assignments are fairly simple to configure and permits the access of business users just to their part of provided services.

Enhancement in end-to-end configuration where IBM Tivoli Workload Scheduler manages IBM Tivoli Workload Scheduler Agents for z/OS

In an end-to-end environment, where IBM Tivoli Workload Scheduler (distributed) manages the mainframe jobs through the IBM Tivoli Workload for Agent for z/OS , V9.1 introduces the ability to launch pre-existing mainframe jobs, just referencing them, instead of defining them into the product database.

Support of DB2® for z/OS in reporting function

Reports can be generated through DB2 SQL queries, where DB2 runs on distributed systems and stores scheduling data. With V9.1, you can run DB2 SQL queries, with DB2 running on z/OS .

Accessibility by people with disabilities

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

Section 508 of the US Rehabilitation Act

IBM Tivoli Workload Scheduler for z/OS V9.1 is capable as of July 5, 2013, 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/product_accessibility/index.html

Business Partner information

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=213-280

Value Unit-based pricing

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.

Product positioning

IBM Tivoli Workload Scheduler for z/OS V9.1 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.

Program number

```
Program            Program
number      VRM    name

5698-T08    9.1    IBM Tivoli Workload Scheduler for z/OS
```

Product identification number

```
                    Subscription and
Program PID Number  Support PID Number

5698-T08            5698-S51
```

Education support

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/

Offering Information

Product information is available via the Offering Information website

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

Publications

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.

Technical information

Specified operating environment

Hardware requirements

Tivoli Workload Scheduler for z/OS V9.1 and its components run on the hardware platforms that support the operating systems listed in the Software requirements section.

Software requirements

The detailed list of supported operating systems, software requirements, and hardware requirements for IBM Tivoli Workload Scheduler for z/OS V9.1 and its components (Tivoli Dynamic Workload Console, z/OS Connector, and Tivoli Workload Scheduler for z/OS Agent), will be available at general availability at

http://pic.dhe.ibm.com/infocenter/tivihelp/v47r1/topic/
com.ibm.tivoli.itws.doc_9.1/welc ome_TWA.html

To be able to produce a Software Product Compatibility Report for IBM Tivoli Workload Scheduler for z/OS , perform the following steps.

1. Refer to

   http://publib.boulder.ibm.com/infocenter/prodguid/v1r0/clarity/index.html
2. Click the "Operating systems for a specific product" report.
3. In the windows "Operating systems for a specific product", fill in the field "Enter a full or partial product name" with the value " IBM Tivoli Workload Scheduler for z/OS " and click Search.
4. In the Select version drop-down list, select V9.1 and Submit to run the report.

To be able to produce a Software Product Compatibility Report for IBM Tivoli Workload Scheduler for z/OS Agent, perform the following steps.

1. Refer to

   http://publib.boulder.ibm.com/infocenter/prodguid/v1r0/clarity/index.html
2. Click the "Operating systems for a specific product" report.
3. In the windows "Operating systems for a specific product", fill in the field "Enter a full or partial product name" with the value " IBM Tivoli Workload Scheduler for z/OS Agent" and click Search.
4. In the Select version drop-down list, select V9.1 and Submit to run the report.

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.

IBM Electronic Support

The IBM Support Portal is your gateway to technical support. This includes IBM Electronic Support tools and resources, for software and hardware, to help save time and simplify support. The Electronic Support tools can help you find answers to questions, download fixes, troubleshoot, automate data collection, submit and track problems through the Service Request online tool, and build skills. All these tools are made available through your IBM support agreement, at no additional charge.

Read about the Electronic Support portfolio of tools

http://ibm.com/electronicsupport

Access the IBM Support Portal

http://ibm.com/support

Access the online Service Request tool

http://ibm.com/support/servicerequest

Planning information

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 V9.1 is distributed with:

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

Security, auditability, and control

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.

Software Services

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/

Licensing metric definitions and pricing examples

IBM Tivoli Enhanced Value-Based Pricing terminology definitions

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, and tape drives 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.

Pricing examples

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

Ordering information

The program in this announcement has Value Unit-Based pricing.

```
Program
number     Program name          Value Unit exhibit

5698-T08   Tivoli Workload       VUE020
           Scheduler for z/OS
           V9.1
```

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

```
                        Value
Level    Minimum Maximum 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
HW               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

Single version charging

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

Current licensees

Current licensees, with support in effect, will receive instructions on how to order this update.

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

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 V9.1
Program PID: 5698-T08

Entitlement                         License option/
identifier     Description          Pricing metric

 S0177JM       IBM Tivoli Workload  Basic OTC, per Value Unit
               Scheduler for z/OS   Basic OTC, per MSU-day TUC

Orderable supply ID    Language     Distribution medium

S0177JH                German       3590 Tape Cartridge,
                                    CD-ROM, and Hardcopy
                                    Pub

S0177JG                English      3590 Tape Cartridge,
                                    CD-ROM, and Hardcopy
                                    Pub

S0177JL                Spanish      3590 Tape Cartridge,
                                    CD-ROM, and Hardcopy
                                    Pub

S0177JJ                Japan Kanji  3590 Tape Cartridge,
                                    CD-ROM, and Hardcopy
                                    Pub

S0177JK                Korean       3590 Tape Cartridge,
```

```
                              CD-ROM, and Hardcopy
                              Pub

Subscription and Support PID: 5698-S51

Entitlement                          License option/
identifier     Description           Pricing metric

S010CSM        Tivoli Workload       Basic ASC,
               Scheduler for z/OS     per Value Unit SW S&S
               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
```

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

Product deliverables are shipped only via CBPDO and ServerPac. These customized offerings 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 Shopz help information at

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

You choose the delivery method when you order the software. IBM recom- mends 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://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp

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.

Terms and conditions

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 V9.1 (5698-T08): L-LBOI-94UJ4E

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/sl/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

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                                       Parent,
number     Program name      Terms            if applicable

5698-T08   IBM Tivoli        Exectution based NA
           Workload Scheduler
           for z/OS, V9.1
```

Full-capacity mainframes

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

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

For more information on mainframe MSU-rated capacities, visit

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

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

Sub-capacity mainframes

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

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

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

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

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

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

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

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

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

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

- Where MLC pricing is aggregated across the sysplex

Sub-capacity eligibility

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

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

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

  http://ibm.com/zseries/swprice

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

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

Additionally, you must sign and comply with the terms and conditions specified in the amendment to the IPLA contract - *Amendment for IBM System z9® and System*

z Programs Sub-Capacity Pricing (Z125-6929). Once the amendment is signed, the terms in the amendment replace any and all previous System z IPLA sub-capacity terms and conditions.

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

Sub-capacity utilization determination

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

On/Off Capacity on Demand (CoD)

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.

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.

IBM Electronic Services

Electronic Service Agent™ and the IBM Electronic Support web portal are dedicated to providing fast, exceptional support to IBM Systems customers. The IBM Electronic Service Agent tool is a no-additional-charge tool that proactively monitors and reports hardware events, such as system errors, performance issues, and inventory. The Electronic Service Agent tool can help you stay focused on your company's strategic business initiatives, save time, and spend less effort managing day-to-day IT maintenance issues. Servers enabled with this tool can be monitored remotely around the clock by IBM Support all at no additional cost to you.

Now integrated into the base operating system of AIX® V5.3, AIX V6.1, and AIX V7.1, Electronic Service Agent is designed to automatically and electronically report system failures and utilization issues to IBM , which can result in faster problem resolution and increased availability. System configuration and inventory information collected by the Electronic Service Agent tool also can be viewed on the secure Electronic Support web portal, and used to improve problem determination and resolution by you and the IBM support team. To access the tool main menu, simply type smitty esa_main, and select Configure Electronic Service Agent . In addition, ESA now includes a powerful Web user interface, giving the administrator easy access to status, tool settings, problem information, and filters. For more information and documentation on how to configure and use Electronic Service Agent , refer to

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

The IBM Electronic Support portal is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. This portal enables you to gain easier access to IBM resources for assistance in

resolving technical problems. The My Systems and Premium Search functions make it even easier for Electronic Service Agent tool-enabled customers to track system inventory and find pertinent fixes.

Benefits

Increased uptime: The Electronic Service Agent tool is designed to enhance the Warranty or Maintenance Agreement by providing faster hardware error reporting and uploading system information to IBM Support. This can translate to less wasted time monitoring the symptoms, diagnosing the error, and manually calling IBM Support to open a problem record. Its 24 x 7 monitoring and reporting mean no more dependence on human intervention or off-hours customer personnel when errors are encountered in the middle of the night.

Security: The Electronic Service Agent tool is designed to be secure in monitoring, reporting, and storing the data at IBM . The Electronic Service Agent tool securely transmits either via the Internet (HTTPS or VPN) or modem, and can be configured to communicate securely through gateways to provide customers a single point of exit from their site. Communication is one way. Activating Electronic Service Agent does not enable IBM to call into a customer's system. System inventory information is stored in a secure database, which is protected behind IBM firewalls. It is viewable only by the customer and IBM . The customer's business applications or business data is never transmitted to IBM .

More accurate reporting: Since system information and error logs are automatically uploaded to the IBM Support center in conjunction with the service request, customers are not required to find and send system information, decreasing the risk of misreported or misdiagnosed errors. Once inside IBM , problem error data is run through a data knowledge management system and knowledge articles are appended to the problem record.

Customized support: Using the IBM ID entered during activation, customers can view system and support information in the My Systems and Premium Search sections of the Electronic Support website at

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

My Systems provides valuable reports of installed hardware and software using information collected from the systems by Electronic Service Agent . Reports are available for any system associated with the customer's IBM ID. Premium Search combines the function of search and the value of Electronic Service Agent information, providing advanced search of the technical support knowledgebase. Using Premium Search and the Electronic Service Agent information that has been collected from your system, customers are able to see search results that apply specifically to their systems.

For more information on how to utilize the power of IBM Electronic Services, contact your IBM Systems Services Representative, or visit

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

Prices

Passport Advantage

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

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

Information on charges is available at

http://www.ibm.com/support

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

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```

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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These products are available under IBM Software Value Plus, either directly from IBM or through authorized Business Partners who invest in skills and high-value solutions. IBM customers may benefit from the industry-specific or horizontal solutions, skills, and expertise provided by these Business Partners.

Additions to Software Value Plus will be communicated through standard product announcements. For a current list of IBM software available under Software Value Plus, visit

   http://www.ibm.com/partnerworld/page/svp_authorized_portfolio_criteria

For questions regarding Software Value Plus, visit

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