IBM OMEGAMON for Application Performance Management extends visibility into IBM z/OS components, integrating new first-alert status, key data processing, and monitoring capabilities

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At a glance

The IBM Application Performance Management portfolio offers a set of hybrid cloud performance management capabilities that can be tailored to meet specific user needs and deployed on premises to manage any environment, whether public cloud, private cloud, or traditional data center. These offerings provide market-leading time to value and simplified administration, integrated analytics, and the broadest coverage for both traditional and cloud-based environments.

When integrated with your existing IBM OMEGAMON system monitoring products, this inventory of Application Performance Management agents provides first-alert status and key processing information about your systems running on z/OS platforms.

IBM OMEGAMON for Application Performance Management V5.4.0 capabilities include:

- Leverages clients’ existing OMEGAMON investments to bring relevant metrics from IBM z/OS systems and middleware into IBM Application Performance Management
- Monitors hybrid applications spanning public cloud to mainframe, with a single enterprise-wide view
- Identifies the components that are impacting these hybrid applications when problems occur
- Builds application dashboards for business applications that are deployed in part on IBM z Systems
- Updates application topologies to be aware of calls made to IBM z/OS resources, and aggregates transaction time information

Overview

OMEGAMON for Application Performance Management V5.4.0 leverages your existing OMEGAMON monitoring agents to provide views of all the z/OS-based components of your application in the IBM Application Performance Management products.

This enables businesses, from an application owner perspective, to see the health of z/OS components of critical applications alongside of the other application
components in an application-specific view. This provides application owners with insight into their mainframe components, to more effectively identify potential issues.

OMEGAMON for Application Performance Management works in conjunction with the OMEGAMON products and IBM Application Performance Management. To benefit from this entire solution, all three of the following products must be purchased and installed: one (or more) OMEGAMON on z Systems™, one of the IBM Application Performance Management portfolio products, and OMEGAMON for Application Performance Management (which provides connectivity between the other two components).

OMEGAMON for Application Performance Management V5.4.0 enables:

- Viewing of z Systems monitoring metrics in the IBM Application Performance Management dashboard
- Consistency of data between the z Systems OMEGAMON user interfaces for z Systems operators and subject matter experts, and the IBM Application Performance Management user interfaces for application owners and IT operations

For application owners, OMEGAMON for Application Performance Management fulfills the need to see the relevant KPIs that relate to the performance of the z/OS components of their application, to isolate problems that are impacting those applications.

**Key prerequisites**

Refer to the Software requirements and Hardware requirements sections.

**Planned availability date**

September 16, 2016

**Description**

The inventory of Application Performance Management agents is enriched to include z/OS agents which are integrated with OMEGAMON XE system monitoring products. The integrated agents are not intended to be troubleshooting tools; instead, for application owners, they provide first-alert status and key processing information about their systems running on z/OS platforms.

Agents are included for these systems:

- For CICS® systems, information is displayed per region on transaction rates; CPU utilizations; I/O rates; short on storage conditions; VTAM® Access control method block status; en queue wait counts; storage violation counts; attention identifier and interval control element counts; short-term and long-term processing bottlenecks; the health of dynamic storage areas in CICS; overall transaction response times; response times across CICS components; and the health of connections to DB2®, IMS™, and MQ systems.

- For IMS systems, a information per subsystem is displayed about control and dependent region CPU utilizations; Enqueue and Dequeue rates; overall transaction rates; transaction queue counts; highest R0 rates, subsystem details with individual region statuses and region occupancy percentages; highest transaction response times; and CPU percentages by address space.

- For DB2 systems, information is displayed about CPU utilizations per LPAR and per DB2 subsystem; current thread counts; transactions per second; lock conflict counts; extended CSA sizes; real 4K frames in use; in-doubt units of recovery; paging and storage statistics; buffer pool statistics; thread utilizations including
foreground, background and database access thread utilizations; DB2 storage statistics, and the health of connections to CICS and IMS systems.

- For JVM s running on z/OS systems, information is displayed about highest lock missed percentages; highest GCs per minute; highest percentage of time spent in garbage collection processing; highest average occupancy; highest number of threads blocked; general and integrated facility for application CPU percentages; lock utilizations; environmental data including collector id, job name, ASID and process ID; garbage collection statistics including garbage collection mode, heap sizes and maximum used percentages.

- For z/OS systems, information per LPAR is displayed about average CPU utilization percentages; resource monitor facility MVS CPU utilization percentages; real frames used percentages by category; common storage areas in use percentages; system paging rates; workload manager modes; address space counts; summary information about capped and uncapped million service unit capacities, and million service unit details information per 5-minute intervals.

- The MQ agent for distributed systems is extended to report its metrics for MQ on z/OS systems.

Value Unit-based pricing

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

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

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

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

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

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

Note that Value Units of a given product cannot be exchanged, interchanged, or aggregated with Value Units of another product.
To determine the required license capacity for the z Systems IPLA program you selected, refer to the Terms and conditions section.

**Product positioning**

OMEGAMON for Application Performance Management V5.4.0 leverages your existing OMEGAMON monitoring agents to provide views of all the z/OS-based components of your application in the IBM Application Performance Management products.

This enables businesses, from an application owner perspective, to see the health of z/OS components of critical applications alongside of the other application components in an application-specific view. This provides application owners with insight into their mainframe components, to more effectively identify potential issues.

OMEGAMON for Application Performance Management works in conjunction with the OMEGAMON products and IBM Application Performance Management. To benefit from this entire solution, all three of the following products must be purchased and installed: one (or more) OMEGAMON on z Systems, one of the IBM Application Performance Management portfolio products, and OMEGAMON for Application Performance Management (which provides connectivity between the other two components).

**Statement of general direction**

IBM intends to provide support for IBM Integration Bus on z/OS, WebSphere Liberty on z/OS and WebSphere Application Server on z/OS in a future update of IBM OMEGAMON for Application Performance Monitoring.

IBM intends to provide support for WebSphere Liberty on z/OS and WebSphere Application Server on z/OS V9 in IBM Tivoli Composite Application Manager Agent for WebSphere Applications V7.2.

IBM plans to discontinue the Tivoli OMEGAMON II agents and UIs commonly called Common User Access (CUA), and to discontinue OMEGAVIEW, which is comprised of Tivoli OMEGAMON II agents. IBM plans to remove the Tivoli OMEGAMON II agents and UIs commonly called Common User Access (CUA) from the next release of all Tivoli OMEGAMON XE products on z/OS. Important function provided by the CUA is replaced by equivalent function in either the OMEGAMON enhanced 3270 user interface (e3270UI) or Tivoli Enterprise Portal (TEP).

IBM previously announced this intention in the following announcements:

- Software Announcement ZP12-0049, dated February 07, 2012
- Software Announcement ZP14-0342, dated July 15, 2014

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remain at our sole discretion.

**Availability of national languages**

Translation information, if available, can be found at the Translation Reports website.
Program number

<table>
<thead>
<tr>
<th>Program number</th>
<th>VRM</th>
<th>Program name</th>
</tr>
</thead>
<tbody>
<tr>
<td>5698-ABF</td>
<td>5.4.0</td>
<td>IBM OMEGAMON for Application Performance Management</td>
</tr>
<tr>
<td>5698-ABG</td>
<td>1.1.0</td>
<td>IBM OMEGAMON for Application Performance Management S&amp;S</td>
</tr>
</tbody>
</table>

Product identification number

<table>
<thead>
<tr>
<th>Program PID number</th>
<th>Subscription and Support PID number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5698-ABF</td>
<td>5698-ABG</td>
</tr>
</tbody>
</table>

Education support

IBM training provides education to support many IBM offerings. Descriptions of courses for IT professionals and managers can be found on IBM authorized training website.

Contact your IBM representative for course information.

Offering Information

Product information is available on the IBM Offering Information website.

Publications

The following publications are available for ordering. To order, use the Publications Center or contact your IBM representative.

OMEGAMON Application Performance Management, V5.4.0 (5698-ABF)

<table>
<thead>
<tr>
<th>Title</th>
<th>Publication number</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM OMEGAMON for Application Performance Management Program Directory</td>
<td>GI13-4166</td>
</tr>
<tr>
<td>IBM OMEGAMON for Application Performance Management License Information</td>
<td>GI13-4167</td>
</tr>
<tr>
<td>IBM OMEGAMON for Application Performance Management License Information CDROM</td>
<td>LC27-8732</td>
</tr>
</tbody>
</table>

OMEGAMON for Application Performance Management V5.4.0 product documentation is published on IBM Knowledge Center, which can be viewed from a web browser with internet access and will be available on September 16, 2016.

The IBM 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. A large number of publications are available online in various file formats, and they can all be downloaded by all countries.

Services

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

Technical information

Specified operating environment

**Hardware requirements**

Refer to the [IBM Developer Works](https://www.ibm.com/developerworks) website for the hardware requirements.

**Software requirements**

Refer to the [IBM Developer Works](https://www.ibm.com/developerworks) website for the software requirements.

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

**Packaging**

The programs in this announcement are distributed with:

- International Program License Agreement (Z125-3301)
- License Information document
- Publications (refer to the [Publications](https://www.ibm.com) section)
- 3590 Tape

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

**Security, auditability, and control**

The programs 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.

Ordering information

Consult your IBM representative.

**Value Unit exhibit VUE007**

<table>
<thead>
<tr>
<th></th>
<th>MSUs minimum</th>
<th>MSUs maximum</th>
<th>Value Units/MSU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Tier A</td>
<td>4</td>
<td>45</td>
<td>0.45</td>
</tr>
<tr>
<td>Tier B</td>
<td>46</td>
<td>175</td>
<td>0.36</td>
</tr>
<tr>
<td>Tier C</td>
<td>176</td>
<td>315</td>
<td>0.27</td>
</tr>
<tr>
<td>Tier D</td>
<td>316</td>
<td>+</td>
<td>0.20</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Tier</th>
<th>MSUs</th>
<th>Multiplied by Value Units per MSU</th>
<th>Equal Value Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>3</td>
<td>1.00</td>
<td>3.00</td>
</tr>
<tr>
<td>Tier A</td>
<td>42</td>
<td>.45</td>
<td>18.90</td>
</tr>
<tr>
<td>Tier B</td>
<td>130</td>
<td>.36</td>
<td>46.80</td>
</tr>
<tr>
<td>Tier C</td>
<td>140</td>
<td>.27</td>
<td>37.80</td>
</tr>
<tr>
<td>Tier D</td>
<td>1,185</td>
<td>.20</td>
<td>237.00</td>
</tr>
<tr>
<td>Total</td>
<td>1,500</td>
<td></td>
<td>343.50</td>
</tr>
</tbody>
</table>

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

Ordering z/OS through the internet

Shopz 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). Shopz is available in the US and several countries in Europe. In countries where Shopz 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 Shopz.

Charge metric

<table>
<thead>
<tr>
<th>Program name</th>
<th>Program number</th>
<th>Charge metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM OMEGAMON for Application Performance Management</td>
<td>5698-ABF</td>
<td>Value Unit</td>
</tr>
<tr>
<td>IBM OMEGAMON for Application Performance Management Subscription &amp; Support</td>
<td>5698-ABG</td>
<td>Value Unit</td>
</tr>
</tbody>
</table>

Basic license

Translation from MSUs to Value Units

<table>
<thead>
<tr>
<th>MSUs</th>
<th>Value Units/MSU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>1-3</td>
</tr>
<tr>
<td>Tier A</td>
<td>4-45</td>
</tr>
<tr>
<td>Tier B</td>
<td>46-175</td>
</tr>
<tr>
<td>Tier C</td>
<td>176-315</td>
</tr>
<tr>
<td>Tier D</td>
<td>316+</td>
</tr>
</tbody>
</table>

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 OMEGAMON for Application Performance Management

Program PID: 5698-ABF

<table>
<thead>
<tr>
<th>Entitlement identifier</th>
<th>Description</th>
<th>License option/Pricing metric</th>
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</thead>
<tbody>
<tr>
<td>S018247</td>
<td>OMEGAMON for APM</td>
<td>Basic OTC, per MSU-day TUC</td>
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<tr>
<td></td>
<td></td>
<td>Basic OTC, per Value Unit</td>
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</table>
**Subscription and Support PID: 5698-ABG**

<table>
<thead>
<tr>
<th>Entitlement identifier</th>
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<th>License option/Pricing metric</th>
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</thead>
<tbody>
<tr>
<td>S01824B</td>
<td>OMEGAMON for APM S&amp;S</td>
<td>Basic MSC, per Value Unit SW S&amp;S</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No charge, decline SW S&amp;S</td>
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<tr>
<td></td>
<td></td>
<td>Per MSU SW S&amp;S registration</td>
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</table>

<table>
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<tr>
<th>Orderable supply ID</th>
<th>Description</th>
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<th>Distribution medium</th>
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<tbody>
<tr>
<td>S018278</td>
<td>OMEGAMON for APM</td>
<td>English US</td>
<td>3590 Tape</td>
</tr>
<tr>
<td></td>
<td>S&amp;S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Customized Offerings**

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

All of these customized offerings are offered for internet delivery in countries where Shopz product ordering is available. Internet delivery reduces software delivery time and allows you to install software without the need to handle tapes. For more details on internet delivery, go to the Help section on the Shopz website.

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

- 3590
- 3592

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

For additional information about the Product ServerPac option, refer to Software Announcement ZP12-0358, dated July 31, 2012.

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

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

**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(R) 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.

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

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

License Information number

<table>
<thead>
<tr>
<th>Description</th>
<th>Form number</th>
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<tr>
<td>IBM OMEGAMON for Application Performance Management, V5.4.0</td>
<td>GI13-4167</td>
</tr>
</tbody>
</table>

See the License Information documents page on the IBM Software License Agreement website for more information.

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, see the IBM Software 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.

**Volume orders (IVO)**

No

**Passport Advantage applies**

No

**Software Subscription and Support applies**

Yes. During the Software Subscription and Support period, for the unmodified portion of a program, and to the extent problems can be recreated in the specified operating environment, IBM will provide the following:

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

Additional details regarding Technical Assistance, which includes IBM contact information, are provided in the IBM Software Support Handbook.

Software Subscription and Support does not include assistance for:

- The design and development of applications
- Your use of programs in other than their specified operating environment
- Failures caused by products for which IBM is not responsible under the IBM Agreement for Acquisition of Software Maintenance

Software Subscription and Support is provided only if the program is within its support time frame as specified in the Software Support Lifecycle policy for the program.

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

While your Software Subscription and Support is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. IBM provides assistance by telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your end users.) IBM provides Severity 1 assistance 24 hours a day, every day of the year. For additional details, go to the IBM Support Handbooks page.
Software Subscription and Support does not include assistance for the design and development of applications, your use of programs in other than their specified operating environment, or failures caused by products for which IBM is not responsible under this agreement.

For more information about the Passport Advantage Agreement, go to the Passport Advantage and Passport Advantage Express website.

**IBM Operational Support Services - Support Line**

Yes

**System i Software Maintenance applies**

No

**Variable charges apply**

Yes

**Educational allowance available**

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

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

**ESAP available**

Yes, to qualified customers.

**Sub-capacity terms and conditions**

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

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

For more information on the Value Unit Exhibit for the z Systems IPLA program you selected, refer to the Ordering information section.

<table>
<thead>
<tr>
<th>Program number</th>
<th>Program name</th>
<th>Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>5698-ABF</td>
<td>IBM OMEGAMON Application Performance Management</td>
<td>z/OS -based</td>
</tr>
</tbody>
</table>

**Full-capacity mainframes**

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

Execution based, z/OS based, full machine based: The required capacity of a z Systems IPLA program with these terms equals the MSU-rated capacity of the machines where the z Systems IPLA program executes.
IBM full-capacity ratings that can be found on the Mainframe Exhibits section of the IBM z Systems Software Contracts website.

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

**Sub-capacity mainframes**

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

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

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

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

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

For more information on mainframe MSU-rated capacities, refer to The IBM z Systems Machines Exhibit, Z125-3901, or refer to the Mainframe Exhibits section of the IBM z Systems Software Contracts website.

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

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

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

- Where MLC pricing is aggregated across the sysplex

**Sub-capacity eligibility**

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

- All instances of the OS/390(R) 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(R) (64-bit) mode.

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

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

- The complete terms and conditions of sub-capacity WLC are defined in the IBM Customer Agreement - Attachment for z Systems Workload License Charges (Z125-6516).
- The complete terms and conditions for sub-capacity EWLC are defined in the IBM Customer Agreement - Attachment for EWLC, TWLC, zELC, and z/OS.e License Charges (Z125-6587).

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

**Sub-capacity utilization determination**

Sub-capacity utilization is determined based on the utilization of an eligible operating system and machine (for example, z/OS running in z/Architecture (64-bit) mode on a z Systems (or equivalent) server).

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.

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

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

**Prices**

Registered external customers and IBM Business Partners can access IBMLink for charges. Refer to Purchase/upgrade tools on the IBMLink website.

For software prices, select "Look up IBM System z software prices (ESWPrice)" under "Prices." Specify "Price type," "Search type," and "Search value," then click "Search."

**Note:** Enter program number in the "Search value."

You can also contact your local IBM representative or IBM Business Partner for the applicable charges.

For all local charges, contact your IBM representative or IBM Business Partner.
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