

# IBM Automatic Binary Optimizer for z/OS, V2.1 delivers additional performance improvements and introduces sub-capacity pricing

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## At a glance

IBM<sup>(R)</sup> Automatic Binary Optimizer for z/OS<sup>(R)</sup>, V2.1 delivers the following:

- Ability to generate optimized programs with additional performance gains on the latest IBM Z<sup>(R)</sup> hardware.
- Improvements to reduce CPU resources and memory usage when optimizing COBOL binaries.
- Enhanced output from the IBM Run Time Instrumentation Profiler tool to clearly summarize and display the profiling results.
- A price-metric change from z/OS-based for Version 1 to execution-based for Version 2. Execution-based sub-capacity licensing is based on the processing power of the LPAR in which the product runs, providing flexibility for gradually adding capacity as the workload increases.

## Overview

Automatic Binary Optimizer for z/OS:

- Delivers advanced technology to improve the performance of already compiled COBOL programs.
- Allows you to directly optimize compiled programs. Source level migration, recompilation, and performance options tuning are not required.
- Allows the generation of code to target the latest IBM Z deployment systems (z14, z14 ZR1, z13s<sup>(R)</sup>, z13<sup>(R)</sup>, zEC12, and zBC12).
- Includes the IBM Run Time Instrumentation Profiler to help identify if COBOL modules are good candidates for optimization by using the Automatic Binary Optimizer.
- Complements Enterprise COBOL for z/OS, V6. Both Automatic Binary Optimizer and Enterprise COBOL can be used to improve the performance of COBOL applications by using:
  - Enterprise COBOL for z/OS to optimize COBOL programs in development
  - Automatic Binary Optimizer for z/OS to optimize COBOL program modules that are not regularly updated
- Integrates with IBM DevOps Tools for problem analysis of optimized applications across the development lifecycle. This includes the IBM Application Delivery Foundation for z/OS family of products.

The price metric for Automatic Binary Optimizer for z/OS, V2.1 is execution-based, sub-capacity licensing. Based on the processing power of the LPAR on which it runs, this price metric provides flexibility for gradually adding capacity as the Automatic Binary Optimizer for z/OS workload increases. While Automatic Binary Optimizer for z/OS, V2.1 is execution-based, sub-capacity licensing, Version 1.0, is z/OS-based. The IBM Sub-Capacity Reporting Tool (SCRT) is used to manage capacity.

Trial editions of Automatic Binary Optimizer for z/OS are available with a 90-day evaluation license at no charge, without support. The trial editions allow you to test and evaluate the benefits of optimizing your existing COBOL applications in non-production environments. The trial editions are available as either an on-premises installed trial or as a simplified cloud service:

- The on-premises version of IBM Automatic Binary Optimizer for z/OS Trial is available through IBM Shopz.
- The [Automatic Binary Optimizer for z/OS Trial Cloud Service](#) is a simplified version of the Automatic Binary Optimizer for z/OS Trial that does not require installation of the trial product.

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## Key requirements

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IBM Z servers that support:

- z/OS V2R4, or later
- z/OS V2R3, with applicable PTFs and APARs
- z/OS V2R2, with applicable PTFs and APARs

See the [Program Directory](#) for the applicable PTFs and APARs.

Required hard disk space is 2 GB.

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## Planned availability date

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September 6, 2019:

- IBM Automatic Binary Optimizer for z/OS, V2.1
- IBM Automatic Binary Optimizer for z/OS Trial, V2.1

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## Description

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### Advanced optimization technology

Automatic Binary Optimizer for z/OS, V2.1 automatically performs high-fidelity, deployment-specific optimizations without the need for source code recompiles. Automatic Binary Optimizer for z/OS increases the performance of business-critical COBOL applications and optimizes system resources. Source code recompiles nor performance options tuning are required.

Earlier COBOL compilers generate code at the ARCH(0) level only. Using the Automatic Binary Optimizer for z/OS:

- Upgrades these ARCH(0) level COBOL applications to exploit the latest ARCH(12) z14/z14 ZR1, ARCH(11) z13/z13s and ARCH(10) zEC12/zBC12 systems.
- On these executables, modernizes the applications in sync with the evolution of hardware technology with access to new hardware instructions that are already on the z14, z14 ZR1, z13, z13s, zEC12 and zBC12 machines.

Automatic Binary Optimizer for z/OS, V2.1 supports COBOL programs that were compiled with:

- Enterprise COBOL for z/OS, V4
- Enterprise COBOL for z/OS and OS/390<sup>(R)</sup>, V3
- COBOL for OS/390, V2
- COBOL for MVS™ & VM, V1.2
- COBOL/370, V1.1
- VS COBOL II, V1.3 and V1.4 (LE-enabled only)

### **Supported key features**

Automatic Binary Optimizer for z/OS supports the following key COBOL features and compiler options:

- ARITH
- CICS<sup>(R)</sup>
- CICS HANDLE ABEND
- CICS HANDLE AID
- CICS language translator generate SERVICE LABEL statements
- CMPR2 option
- Db2<sup>(R)</sup>
- DLL
- ENTRY
- I/O and Debugging Declaratives
- IMS
- NOOPTIMIZE, OPTIMIZE(STD | FULL)
- NUMPROC(NOPFD | PFD | MIG)
- RECURSIVE
- RENT and NORENT
- SORT and MERGE
- SQL
- SSRANGE
- TEST
- THREADTRUNC(STD | BIN | OPT)
- XML
- User written SERVICE LABEL statements

The HANDLERS option is deprecated in Automatic Binary Optimizer for z/OS, V2.1. The previously default HANDLERS=Y behavior now always applies. This change will not affect the function or behavior of the optimized modules.

### **Performance improvements**

Automatic Binary Optimizer for z/OS, V2.1 delivers additional performance improvements in the generated optimized COBOL programs. Areas of improved performance include programs with:

- INITIALIZE statements
- Packed and zoned decimal arithmetic statements
- INSPECT statements
- Long or variable MOVE operations
- Long or variable comparison operations
- Numeric editing statements

- Dynamic call statements
- Linkage section data items
- STRING statements

Automatic Binary Optimizer for z/OS, V2.1 provides reductions in resource usage. Significantly less system resources that include memory usage and CPU time, is required by Version 2.1 to optimize load modules as compared to previous releases of Automatic Binary Optimizer for z/OS. With Version 2.1, compute-intensive applications can deliver additional performance improvements when compared to Version 1.3. These improvements increases the return on investment of Automatic Binary Optimizer for z/OS.

### **Usability features**

Automatic Binary Optimizer for z/OS, V2.1 is easier to use with the implementation of additional usability features that include:

- Improvements to the IBM Run Time Instrumentation Profiler tool. This helps identify COBOL modules that are good candidates for optimization with the Automatic Binary Optimizer for z/OS. The profiling information is improved to more clearly summarize and display the profiling results.
- Improvements to the listings to include the instructions from the value clause initialization section of the input compiled program.
- Support for optimization of modules that contain COBOL programs that were previously compiled with the CMPR2 option.

### **Accelerate digital transformation**

Automatic Binary Optimizer for z/OS, V2.1 is a cost effective way to accelerate digital transformation. Automatic Binary Optimizer for z/OS can be used to modernize existing core business applications on IBM Z to support new mobile and cloud applications. Use the new features in Enterprise COBOL for z/OS, V6.3 to accelerate application modernization in development. Use Automatic Binary Optimizer for z/OS to maximize application performance of existing applications to cope with increases in workload.

### **Price metric change**

With the price metric change for Automatic Binary Optimizer for z/OS, V2.1 to execution-based, sub-capacity licensing, license charges are based on the processing power of the LPAR in which the product runs. This price metric provides flexibility for gradually increasing capacity as the Automatic Binary Optimizer for z/OS workload increases. While Automatic Binary Optimizer for z/OS, V2.1 is execution-based sub-capacity, Version 1 is z/OS-based. The IBM Sub-Capacity Reporting Tool (SCRT) is used to manage capacity.

### **Version to version upgrade for IBM Automatic Binary Optimizer for z/OS**

IBM Automatic Binary Optimizer for z/OS, V2.1 is the follow-on product to IBM Automatic Binary Optimizer for z/OS, V1.

The price-metric charge for Automatic Binary Optimizer for z/OS, V2.1 is execution-based. Execution-based sub-capacity licensing is based on the processing power of the LPAR in which the product runs, providing flexibility for gradually adding capacity as the workload increases.

In order to be eligible to upgrade licenses to Automatic Binary Optimizer for z/OS, V2.1 (5697-AB2), clients must have previously acquired licenses for Automatic Binary Optimizer for z/OS, V1 (5697-AB1) and have current active Software Subscription and Support (S&S) (5697-ABS).

### **Tooling support**

Optimized applications that were created with Automatic Binary Optimizer for z/OS are supported by IBM DevOps Tools for problem analysis across your development lifecycle. They include the IBM Application Delivery Foundation for z/OS family of products:

- Developer for z/OS Enterprise Edition that includes Debug for z/OS to help examine, monitor, and control the execution of application programs
- Fault Analyzer for z/OS to:
  - Help developers analyze and fix application and system failures.
  - Gather information about an application and the surrounding environment.
- Application Performance Analyzer for z/OS that helps developers in the design, development, and maintenance cycles with a non-intrusive application performance analyzer

Additional information can be found on the [Application Delivery Foundation for z/OS](#) website.

### **IBM Service and Support**

Automatic Binary Optimizer for z/OS brings with it IBM Service and Support. The IBM Service and Support organization is made up of teams of individuals who work together to provide the responsive platform and cross-platform software support that you require. For complex or code-related problems, IBM has specialized, skilled service teams with access to the experts in the development laboratories, as required. You have access to the right level of IBM expertise when you need it, no matter where you are located.

### **Trial products**

Trial editions of Automatic Binary Optimizer for z/OS are available with a 90-day evaluation license at no charge and without support. The trial editions allow testing and evaluation of the benefits of optimizing your existing COBOL applications in non-production environments. The trial editions are available as either an on-premises, installed trial or as a simplified cloud service:

- The on-premises version of IBM Automatic Binary Optimizer for z/OS Trial is available through IBM Shopz.
- The [Automatic Binary Optimizer for z/OS Trial Cloud Service](#) is a simplified version of the Automatic Binary Optimizer for z/OS Trial that does not require installation of the trial product.

### **Value Unit-based pricing**

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

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

Subsequent acquisitions of Value Unit priced programs offer additional price benefits. The quantity of each z Systems IPLA program that you have acquired is referred to as **entitled license capacity**. If you wish to grow your entitled license capacity

for a z Systems IPLA program, the calculation to determine additional needed Value Units is based upon the number of Value Units already acquired.

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

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

To simplify conversion from the designated measurement to Value Units or vice-versa, use the Value Unit Converter Tool. For additional information or to obtain a copy of the Value Unit Converter Tool, visit the Value Unit Converter Tool, go to the [IBM System z<sup>®</sup> Software Pricing](#) website.

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

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

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## Product positioning

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Automatic Binary Optimizer for z/OS optimizes previously compiled COBOL program modules to increase application performance and reduce CPU usage without source recompilation.

Automatic Binary Optimizer for z/OS complements Enterprise COBOL for z/OS, V6. Both Automatic Binary Optimizer and Enterprise COBOL can be used to improve the performance of COBOL applications:

- Use Enterprise COBOL for z/OS to optimize COBOL programs that are in development.
- Use Automatic Binary Optimizer for z/OS to optimize COBOL programs that are not regularly updated.

Trial editions of Automatic Binary Optimizer for z/OS are available with a 90-day evaluation license at no charge without support. The trial editions allow testing and evaluating the benefits of optimizing existing COBOL applications in non-production environments. The trial editions are available as either an on-premises installed trial or as a simplified cloud service:

- The on-premises version of IBM Automatic Binary Optimizer for z/OS Trial is available through IBM Shopz.
- The [Automatic Binary Optimizer for z/OS Trial Cloud Service](#) is a simplified version of the Automatic Binary Optimizer for z/OS Trial that does not require installation of the trial product.

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## Program number

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Program number	VRM	Program name
5697-AB2	2.1.0	IBM Automatic Binary Optimizer for z/OS
5697-TR2	2.1.0	IBM Automatic Binary Optimizer for z/OS Trial

  

Program PID number	Subscription and Support PID number
5697-AB2	5697-ABZ
5697-TR2	5697-TRS

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## Offering Information

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

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## Business Partner information

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If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to [BP Attachment for Announcement Letter 219-420](#) for this announcement. A PartnerWorld<sup>(R)</sup> ID and password are required (use IBMid).

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## Publications

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Technical documentation can be found in [IBM Knowledge Center](#).

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## Services

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### Software Services

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IBM Software Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of the lab-based software services team and the business consulting, project management, and infrastructure expertise of the IBM Global Services team. Also, IBM extends the reach of IBM Software Services through IBM Business Partners to provide an extensive portfolio of capabilities. IBM provides 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, contact your Lab Services Sales or Delivery Leader.

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## Technical information

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### Specified operating environment

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#### *Hardware requirements*

Automatic Binary Optimizer for z/OS, V2.1 and Automatic Binary Optimizer for z/OS Trial, V2.1 optimized modules run on the following IBM Z servers:

- z14
- z14 ZR1
- z13
- z13s
- zEnterprise<sup>(R)</sup> EC12
- zEnterprise BC12

#### *Software requirements*

Automatic Binary Optimizer for z/OS, V2.1 and Automatic Binary Optimizer for z/OS Trial, V2.1 require:

- z/OS V2R4, or later
- z/OS V2R3, with applicable PTFs and APARs
- z/OS V2R2, with applicable PTFs and APARs

For details, see the [Program Directory](#).

## **Companion products**

Automatic Binary Optimizer for z/OS is complementary to Enterprise COBOL for z/OS, V6.3. Use Enterprise COBOL for z/OS, V6.3 to compile COBOL programs under development to support digital transformation. Use Automatic Binary Optimizer for z/OS to optimize programs that were not compiled in a long time and are not in the recompilation plan.

Additional information can be found on the [Enterprise COBOL for z/OS](#) website.

Problem analysis on the optimized applications across the development lifecycle is supported by IBM DevOps Tools, which include the Application Delivery Foundation for z/OS family of products. These products deliver functions, features, and benefits that help modernize existing IBM Z applications:

- Developer for z/OS Enterprise Edition, which includes Debug for z/OS.
  - Helps examine, monitor, and control the execution of application programs.
- Fault Analyzer for z/OS.
  - Helps developers analyze and fix application and system failures.
  - Gathers information about an application and the surrounding environment.
- Application Performance Analyzer for z/OS.
  - Helps developers in the design, development, and maintenance cycles with an intrusive, application performance analyzer.

Additional information can be found on the [Application Delivery Foundation for z/OS](#) website.

## **Compatibility**

IBM Automatic Binary Optimizer for z/OS V2.1 is upwardly compatible with IBM Automatic Binary Optimizer for z/OS V1.3.

## **The IBM Support Community**

The [IBM Support Community](#) is your gateway to technical support tools and resources that are designed to help you save time and simplify support. Support Community tools can help you find answers to questions, download fixes, troubleshoot, automate data collection, submit and track problems, and build skills.

You can also access the [Service requests and PMRs](#) tool for more support.

## **Planning information**

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### **Packaging**

Packaging Information

- The Automatic Binary Optimizer for z/OS, V2.1 package includes:
  - Basic machine-readable material on the client-selected distribution medium
  - Program Directory (GI13-4513-04)
  - Licensed Information DVD (LC27-8544-03)
- The Automatic Binary Optimizer for z/OS Trial, V2.1 package includes:
  - Basic machine-readable material on the client-selected distribution medium
  - Program Directory (GI13-4516-04)
  - Licensed Information DVD (LC27-8571-03)



## Security, auditability, and control

Automatic Binary Optimizer for z/OS, V2.1 and Automatic Binary Optimizer for z/OS Trial, V2.1 use the security and auditability features of the host hardware.

The client 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.

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

Program number	Program name	Value Unit exhibit
5697-AB2	IBM Automatic Binary Optimizer for z/OS	VUE007
5697-ABZ	IBM Automatic Binary Optimizer for z/OS Subscription and Support	VUE007

For each IBM 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 IBM 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 VUE007

	MSUs minimum	MSUs maximum	Value Units/MSU
Base	1	3	1
Tier A	4	45	0.45
Tier B	46	175	0.36
Tier C	176	315	0.27
Tier D	316	+	0.20

### Ordering example

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

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

Tier	MSUs	Multiplied by Value Units per MSU	Equal Value Units
Base	3	1.00	3.00
Tier A	42	.45	18.90
Tier B	130	.36	46.80
Tier C	140	.27	37.80
Tier D	1,185	.20	237.00
Total	1,500		343.50

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

### 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). For more details and availability, go to the [Shopz](#) website.

## Charge metric

The charge metric for the licensed product can be found in the following License Information documents:

Program identifier	License Information document title	License Information document number
5697-AB2	Automatic Binary Optimizer for z/OS, V2.1	<a href="#">L-MCHN-BE7Q9Z</a>

Select your language of choice and scroll down to the Charge Metrics section. Follow-on releases, if any, may have updated terms. See the [License Information documents](#) website for more information.

## Basic license

### On/Off CoD

IBM Automatic Binary Optimizer for z/OS, V2.1 is eligible for On/Off CoD with a temporary use charge calculated based on MSUs per-day usage.

**Program name: IBM Automatic Binary Optimizer for z/OS, V2.1**

**Program PID: 5697-AB2**

Entitlement identifier	Description	License option/Pricing metric
S018G4F	IBM Automatic Binary Optimizer for z/OS, V2.1	Basic OTC, Per MSU-day TUC

Translation from MSUs to Value Units

	MSUs	Value Units/MSU
Base	1-3	1.00
Tier A	4-45	0.45
Tier B	46-175	0.36
Tier C	176-315	0.27
Tier D	316+	0.20

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 Automatic Binary Optimizer for z/OS, V2.1**

**Program PID: 5697-AB2**

Entitlement identifier	Description	License option/Pricing metric
S018G4F	IBM Automatic Binary Optimizer for z/OS	MultiVersion Measurement No Charge Value Units
		On Off Capacity on demand Temporary Use Charge MSU-DAY(s)
		Use-Based License One-Time Charge Value Units
Orderable supply ID	Language	Distribution medium
S018G4G	English	DVD

**Subscription and Support PID: 5697-ABZ**

<b>Entitlement identifier</b>	<b>Description</b>	<b>License option/Pricing metric</b>
S018G4J	IBM Automatic Binary Optimizer for z/OS S&S	Decline Subscription and Support No Charge Value Units
		MultiVersion Measurement S&S No Charge Value Units
		SW Subscription and Support Annual Support Charge Value Units
		SW Subscription and Support Registration No Charge Per MSU
		SW Subscription and Support Reseller One Year Value Units
<b>Orderable supply ID</b>	<b>Language</b>	<b>Distribution medium</b>
S018G4K	English	Paper Media

**Program name: IBM Automatic Binary Optimizer for z/OS Trial, V2.1****Program PID: 5697-TR2**

<b>Entitlement identifier</b>	<b>Description</b>	<b>License option/Pricing metric</b>
S018G5M	IBM Automatic Binary Optimizer for z/OS Trial	Unlimited installs, No charge
		MultiVersion Measurement No Charge
<b>Orderable supply ID</b>	<b>Language</b>	<b>Distribution medium</b>
S018G5P	English	DVD

**Subscription and Support PID: 5697-TRS**

<b>Entitlement identifier</b>	<b>Description</b>	<b>License option/Pricing metric</b>
S017VN6	IBM Automatic Binary Optimizer for z/OS Trial S&S	Unlimited installs, No charge
		SW S&S Registration, No charge
		MultiVersion Measurement S&S No Charge
<b>Orderable supply ID</b>	<b>Language</b>	<b>Distribution medium</b>
S017VN5	English	Paper Media

**Subscription and Support**

To receive voice technical support via telephone and future releases and versions at no additional charge, Subscription and Support must be ordered. The capacity of Subscription and Support (Value Units) must be the same as the capacity ordered for the product licenses.

To order, specify the Subscription and Support program number (PID) referenced above and the appropriate license or charge option.

IBM is also providing Subscription and Support for these products via a separately purchased offering under the terms of the IBM International Agreement for Acquisition of Software Maintenance. This offering:

- Includes and extends the support services provided in the base support to include technical support via telephone.
- Entitles you to future releases and versions, at no additional charge. Note that you are not entitled to new products.

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

The combined effect of the IPLA license and the Agreement for Acquisition of Software Maintenance gives you rights and support services comparable to those under the traditional ICA S/390<sup>(R)</sup> and IBM Z license or its equivalent. To ensure that you continue to enjoy the level of support you are used to in the ICA business model, you must order **both** the license for the program **and** the support for the selected programs at the same Value Unit quantities.

## **Customized Offerings**

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Product deliverables are shipped only through CBPDO and ServerPac. These customized offerings are offered for internet delivery. For more details on Internet delivery, go to the Help section on the [Shopz](#) website.

IBM recommends internet delivery. However, if you still require physical media, you can choose DVD.

Many products can be ordered in ServerPac the month following their availability in CBPDO. z/OS can be ordered through 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, go to the Help section on the [Shopz](#) website.

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 four weeks after general availability.

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## **Terms and conditions**

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

## **Licensing**

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

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

## **Software Maintenance**

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

These programs are licensed under the IBM International 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 Operational Support Services - SoftwareXcel is an option if you desire added services.

### **License Information number**

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The following License Information document applies to the offering in this announcement:

<b>Program identifier</b>	<b>License Information document title</b>	<b>License Information document number</b>
5697-AB2	Automatic Binary Optimizer for z/OS, V2.1	<a href="#">L-MCHN-BE7Q9Z</a>

Follow-on releases, if any, may have updated terms. See the [License Information documents](#) website for more information.

### **Limited warranty applies**

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Yes

### **Limited warranty**

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

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, see the [IBM Support Guide](#).

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

### **Program technical support**

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Technical support of a program product version or release will be available for a minimum of five years from the general availability date, as long as your Software Subscription and Support (also referred to as Software Maintenance) is in effect.

This technical support allows you to obtain assistance (by telephone or electronic means) from IBM for product-specific, task-oriented questions regarding the installation and operation of the program product. Software Subscription and Support (Software Maintenance) also provides you with access to updates (modifications or fixes), releases, and versions of the program. You will be notified, through an announcement letter, of discontinuance of support with 12 months' notice. If you require additional technical support from IBM, including an extension of support beyond the discontinuance date, contact your IBM representative or IBM Business Partner. This extension may be available for a fee.

For additional information on the IBM Software Support Lifecycle Policy, see the [IBM Software Support Lifecycle Policy](#) website.

### **Money-back guarantee**

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

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

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

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No

### **Passport Advantage applies**

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No

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

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Yes. During the 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 Support Guide](#).

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 timeframe as specified in the Software Support Lifecycle policy for the program.

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

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

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

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

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No

### **Variable charges apply**

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No

### **Educational allowance available**

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

### **Multi-Version Measurement**

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Multi-Version Measurement (MVM) replaces the previously announced Migration Grace Period time limit of six months and allows unlimited time for clients to run more than one eligible version of a software program. Clients may run multiple versions of a program simultaneously for an unlimited duration during a program version upgrade. Clients may also choose to run multiple versions of a program simultaneously for an unlimited duration in a production environment. MVM does not extend support dates for programs withdrawn from service.

For more information about MVM, including requirements for qualification, see the [MVM](#) web page. For a list of eligible programs, see the [IPLA Execution-Based](#) web page.

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

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For each IBM 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 IBM 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 IBM Z IPLA program you selected, see the [Ordering information](#) section.

<b>Program number</b>	<b>Program name</b>	<b>Terms</b>	<b>Parent, if applicable</b>
5697-AB2	IBM Automatic Binary Optimizer for z/OS	Execution-based	Not applicable

### **Full-capacity mainframes**

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

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

For more information on mainframe MSU-rated capacities, go to the [IBM Z software pricing resources](#) webpage.

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

z/OS-based: The required license capacity of an IBM Z IPLA program with these terms equals the license capacity of z/OS on the machines where the IBM Z IPLA program executes.

Reference-based: The required license capacity of an IBM 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 an IBM Z IPLA program with full machine-based terms equals the MSU-rated capacity of the machines where the IBM Z IPLA program executes.

For more information on mainframe MSU-rated capacities, see the *IBM z Systems Machines Exhibit, Z125-3901*, or see the Exhibits section on the [IBM Z software pricing resources](#) webpage.

IBM Z IPLA sub-capacity programs with reference-based terms add value to the parent program across the environment, regardless of where in the environment the IBM Z IPLA program executes.

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

When an IBM Z IPLA sub-capacity program with reference-based terms is used in a qualified Parallel Sysplex environment, the required license capacity of the IBM Z IPLA program must equal 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 IBM Z IPLA programs, you must first implement and comply with all terms of one of the following:

- Sub-capacity Workload License Charges (WLC)
- Sub-capacity Entry Workload License Charges (EWLC)
- Sub-capacity Advanced Workload License Charges (AWLC)
- Sub-capacity Advanced Entry Workload License Charges (AEWLC)

To implement sub-capacity WLC, EWLC, AWLC, or AEWLC, a machine must be an IBM Z (or equivalent). On that machine:

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



For that machine, you must create and submit a Sub-Capacity Report to IBM each month. Sub-Capacity Reports must be generated using the Sub-Capacity Reporting Tool (SCRT). For additional information or to obtain a copy of SCRT, go to the [IBM Z software pricing tools](#) webpage.

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).

You must comply with all of the terms of the AWLC or AEWLC offering, whichever is applicable:

- The complete terms and conditions for AWLC are defined in the *IBM Customer Agreement - Attachment for IBM System z Advanced Workload License Charges*, (Z125-8538).
- The complete terms and conditions for AEWLC are defined in the *IBM Customer Agreement - Attachment for IBM System z Advanced Entry Workload License Charges*, (Z125-8755).

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

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

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

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

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

### **On/Off CoD**

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To be eligible for On/Off CoD pricing, you must be enabled for temporary capacity on the corresponding hardware, and the required contract, Attachment for IBM z Systems On/Off Capacity on Demand (Z125-7883) must be signed prior to use.

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## **Statement of good security practices**

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IT system security involves protecting systems and information through intrusion 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 regulatory compliant, comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective.

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

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## Prices

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Registered external clients and IBM Business Partners can access [IBMLink](#) to view pricing information.

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.

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## Corrections

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**(Corrected on May 5, 2020)**

Price metric has been updated.