IBM Automatic Binary Optimizer for z/OS, V1.3 delivers increased application performance and generates COBOL code to fully exploit the new IBM z14 server

Table of contents
1 Overview
2 Key prerequisites
2 Planned availability date
2 Description
6 Program number
6 Publications
6 Technical information
8 Ordering information
12 Terms and conditions
17 Prices
18 Order now

At a glance

IBM (R) Automatic Binary Optimizer for z/OS (R), V1.3 delivers the following enhancements:

- Improved performance of previously compiled COBOL programs on the IBM z14 architecture and IBM z/OS V2.3 operating system
- Ability to exploit the new Vector Packed Decimal Facility that is delivered with the z14 system for additional performance improvements
- Ability to generate optimized programs with additional performance gains on previously supported IBM Z hardware (z13(TM), z13s, zEC12, and zBC12)
- Less memory and CPU resources that is required for the optimization process
- Inclusion of the Installation Verification Program (IVP), BOZJIVP, to verify that Automatic Binary Optimizer for z/OS is installed correctly and is functional
- A new tool, IBM Run Time Instrumentation Profiler, to help identify COBOL modules that are good candidates for optimization with Automatic Binary Optimizer for z/OS

Overview

Automatic Binary Optimizer for z/OS optimizes previously compiled COBOL program modules to increase application performance and reduce CPU usage without source recompilation. It performs high-fidelity optimizations and generates code that fully exploits z14, z13, and zEC12 architecture without changing program logic or behavior. Automatic Binary Optimizer for z/OS must be licensed on all machines where the optimizer is used and where the optimized applications are deployed and executed.

Automatic Binary Optimizer for z/OS:

- Delivers new 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.
- Leverages the latest technology advancements in COBOL optimizations.
• Lets you generate code to target the latest deployment systems (z14, z13 s, z13, zEC12, and zBC12).
• Delivers a simple, easy-to-install setup, which is also configurable, to allow setting of target architecture.
• Complements Enterprise COBOL for z/OS, V5 and 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 source that is changed.
  – Use Automatic Binary Optimizer for z/OS to optimize COBOL program modules that are not in the recompile plan.
• Integrates with IBM DevOps Tools for problem analysis of optimized applications across your development lifecycle, which includes IBM Application Delivery Foundation for z Systems™ family of products:
  – IBM Developer for z Systems Enterprise Edition, which includes the IBM Debug for z Systems (previously known as IBM Debug Tool for z/OS)
  – IBM Fault Analyzer for z/OS
  – IBM Application Performance Analyzer for z/OS

Trial editions of Automatic Binary Optimizer for z/OS are available with a 90-day evaluation license at no charge. 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-premise installed trial or as a simplified cloud service:
• The on-premise 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.

**Key prerequisites**

IBM z Systems™ servers that support:
• z/OS V2R3, with applicable PTFs and APARs, or later. For details, see the [Program Directory](#).
• z/OS V2R2, with applicable PTFs and APARs. For details, see the [Program Directory](#).
• z/OS V2R1, with applicable PTFs and APARs. For details, see the [Program Directory](#).

Required hard disk space is 2 GB.

**Planned availability date**

September 8, 2017:
• IBM Automatic Binary Optimizer for z/OS, V1.3
• IBM Automatic Binary Optimizer for z/OS Trial, V1.3

**Description**

Automatic Binary Optimizer for z/OS, V1.3 modernizes your existing COBOL applications, by optimizing already compiled COBOL program modules to increase application performance and reducing CPU usage without source recompilation. Automatic Binary Optimizer for z/OS performs high-fidelity optimizations and
generates code that fully exploits z14, z13 and zEC12 architecture without changing program logic or behavior.

Automatic Binary Optimizer for z/OS must be licensed on all machines where the optimizer is used and where the optimized applications are deployed and executed.

**Advanced optimization technology**

Automatic Binary Optimizer for z/OS, V1.3 automatically performs high-fidelity, deployment-specific optimizations without the need for source code recompilations. Automatic Binary Optimizer for z/OS increases the performance of business-critical COBOL applications. It does not require source code recompiles nor performance options tuning.

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, ARCH(11) z13/z13s and ARCH(10) zEC12/zBC12 systems. Using the Automatic Binary Optimizer on these executables is more than a 25-year jump forward in the evolution of hardware technology, with access to new hardware instructions that are already on the z14, z13, z13s, zEC12 and zBC12 machines.

Automatic Binary Optimizer for z/OS, V1.3 supports COBOL programs that were compiled with:

- Enterprise COBOL for z/OS, V4
- Enterprise COBOL for z/OS and OS/390®, 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:

- ARITH
- CICS®
- CICS HANDLE ABEND
- CICS HANDLE AID
- DB2®
- DLL
- I/O and Debugging Declaratives
- IMS™
- OPTIMIZE(STD | FULL)
- RECURSIVE
- SORT/MERGE
- SQL
- SSRANGE
- THREAD
- TRUNC
- XML
- ZWB

**Performance improvements**

Automatic Binary Optimizer for z/OS, V1.3 delivers additional performance improvements in the generated optimized COBOL programs. Areas of improved performance include programs with:
• SEARCH ALL statements
• Long or variable length MOVE and compares
• Multiply, divide and exponentiation operations compiled with VS COBOL II compiler
• Many sequential CALL operations
• Use of comp-1 data items and comp-2 data items
• Computations and MOVEs on decimal data types containing more than 18 fractional digits
• ARITH(EXTEND) option that have decimal multiply operations containing 30 or 31 digits
• Decimal divide operations on constant, literal or read only data items
• ON SIZE ERROR clauses
• All forms of decimal arithmetic specifically for z14 hardware by using the ARCH(12) option

Automatic Binary Optimizer for z/OS, V1.3 exploits the new Vector Packed Decimal Facility of z14. The Vector Packed Decimal Facility allows the dominant COBOL data types, packed and zoned decimal, to be handled in 16 byte wide vector registers instead of in memory, resulting in improvements in COBOL computational performance. Binary coded decimal computationally intensive COBOL programs optimized with Automatic Binary Optimizer V1.3 targeting z14 [ARCH(12)], can delivery CPU resource reductions over the original Enterprise COBOL for z/OS, V4 compiled programs on z14.

Version V1.3 provides reductions in resource usage. Significantly less system resources, including memory usage and CPU time, is required by Version 1.3 to optimize load modules as compared to Automatic Binary Optimizer for z/OS, V1.2. With Version 1.3, compute intensive applications are expected to deliver additional performance improvements when compared to Version 1.2. These improvements increases the return on investment of Automatic Binary Optimizer for z/OS.

Usability features
Automatic Binary Optimizer for z/OS, V1.3 is easier to use with the implementation of additional usability features. Additional usability features include:
• An Installation Verification Program (IVP), BOZJIVP, to verify that Automatic Binary Optimizer for z/OS is installed correctly and is functional
• A new tool, IBM Run Time Instrumentation Profiler, to help identify COBOL modules that are good candidates for optimization with the Automatic Binary Optimizer for z/OS.
• More efficient generation of the optimized programs by using less memory and CPU resources than with Automatic Binary Optimizer for z/OS, V1.2. This results in operational cost savings in the optimization phase.
• Generation of the optimized programs with additional reductions in CPU time, elapsed time, and service units that are consumed. This results in operational cost savings in the execution environment.

Tooling support
Optimized applications created with Automatic Binary Optimizer for z/OS are supported by IBM DevOps Tools for problem analysis across your development lifecycle, which include IBM Application Delivery Foundation for z Systems family of products:
• Developer for z Systems Enterprise Edition, which includes Debug for z Systems (previously known as Debug Tool 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 non-intrusive application performance analyzer.

Additional information can be found on the Application Delivery Foundation for z Systems 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 you with 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. Therefore, 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. 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-premise installed trial or as a simplified cloud service:

• The on-premise 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

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.

### Program number

<table>
<thead>
<tr>
<th>Program number</th>
<th>VRM</th>
<th>Program name</th>
</tr>
</thead>
<tbody>
<tr>
<td>5697-AB1</td>
<td>1.3.0</td>
<td>IBM Automatic Binary Optimizer for z/OS, V1.3</td>
</tr>
<tr>
<td>5697-TR1</td>
<td>1.3.0</td>
<td>IBM Automatic Binary Optimizer for z/OS Trial, V1.3</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>5697-AB1</td>
<td>5697-ABS</td>
</tr>
<tr>
<td>5697-TR1</td>
<td>5697-TRS</td>
</tr>
</tbody>
</table>

### Offering Information

Product information is available on the IBM Offering Information website.

### Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to BP Attachment for Announcement Letter 217-322 for this announcement. A PartnerWorld ID and password are required (use IBMid).

### Publications

No publications are shipped with this program.

### Services

**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, contact your Lab Services Sales or Delivery Leader.

### Technical information

**Specified operating environment**
**Hardware requirements**

Automatic Binary Optimizer for z/OS, V1.3 and Automatic Binary Optimizer for z/OS Trial, V1.3 run on the following IBM Z servers:

- z14
- z13
- z13s
- zEnterprise™ EC12
- zEnterprise BC12

**Software requirements**

Automatic Binary Optimizer for z/OS, V1.3 and Automatic Binary Optimizer for z/OS Trial, V1.3 require:

- z/OS V2R3, with applicable PTFs and APARs, or later. For details, see the [Program Directory](#).
- z/OS V2R2, with applicable PTFs and APARs. For details, see the [Program Directory](#).
- z/OS V2R1, with applicable PTFs and APARs. For details, see the [Program Directory](#).

**Companion products**

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

- Developer for z Systems Enterprise Edition, which includes Debug for z Systems (previously known as Debug Tool 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 Systems](#) website.

**Planning information**

**Packaging**

Packaging Information

- The Automatic Binary Optimizer for z/OS, V1.3 package includes:
  - Basic machine-readable material on the client-selected distribution medium
  - Program Directory (GI13-4513)
  - Licensed Information DVD (LC27-8544)

- The Automatic Binary Optimizer for z/OS Trial, V1.3 package includes:
  - Basic machine-readable material on the client-selected distribution medium
  - Program Directory (GI13-4516)
Security, auditability, and control

Automatic Binary Optimizer for z/OS, V1.3 and Automatic Binary Optimizer for z/OS Trial, V1.3 use the security and auditability features of the host hardware.

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

The Automatic Binary Optimizer for z/OS program in this announcement has Value Unit-based pricing.

<table>
<thead>
<tr>
<th>Program name</th>
<th>Program number</th>
<th>Value Unit exhibit</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Automatic Binary Optimizer for z/OS</td>
<td>5697-AB1</td>
<td>VUE007</td>
</tr>
<tr>
<td>IBM Automatic Binary Optimizer for z/OS Subscription and Support</td>
<td>5697-ABS</td>
<td>VUE007</td>
</tr>
</tbody>
</table>

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

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

### Value Unit exhibit VUE007

<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). For more details and availability, visit the Shopz website.

Automatic Binary Optimizer for z/OS, V1.3 (5697-AB1)

Automatic Binary Optimizer for z/OS Trial, V1.3 (5697-TR1)

### Charge metric

<table>
<thead>
<tr>
<th>Program name</th>
<th>Part number or PID number</th>
<th>Charge metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Automatic Binary Optimizer for z/OS</td>
<td>5697-AB1</td>
<td>Value Units</td>
</tr>
<tr>
<td>IBM Automatic Binary Optimizer for z/OS Subscription and Support</td>
<td>5697-ABS</td>
<td>Value Units</td>
</tr>
<tr>
<td>IBM Automatic Binary Optimizer for z/OS Trial</td>
<td>5697-TR1</td>
<td>No charge, unlimited Installs</td>
</tr>
<tr>
<td>IBM Automatic Binary Optimizer for z/OS Trial Subscription and Support</td>
<td>5697-TRS</td>
<td>No charge, unlimited Installs</td>
</tr>
</tbody>
</table>

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

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

### Value Unit Pricing

Value Unit pricing for eligible z Systems IPLA programs enables a lower cost of incremental growth and enterprise aggregation within a country. 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 customers. 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 offers additional price benefits for customers. 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 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 within a country
- Convert the total MSUs to Value Units for that country, using the applicable Value Unit Exhibit, and
- 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 VUs 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.

**Basic license**

**On/Off CoD**

IBM Automatic Binary Optimizer for z/OS, V1.3 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, V1.3**

**Program PID: 5697-AB1**

<table>
<thead>
<tr>
<th>Entitlement identifier</th>
<th>Description</th>
<th>License option/Pricing metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>S017V8C</td>
<td>IBM Automatic Binary Optimizer for z/OS, V1.3</td>
<td>Basic OTC, Per MSU-day TUC</td>
</tr>
</tbody>
</table>

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>1.00</td>
</tr>
<tr>
<td>Tier A</td>
<td>0.45</td>
</tr>
<tr>
<td>Tier B</td>
<td>0.36</td>
</tr>
<tr>
<td>Tier C</td>
<td>0.27</td>
</tr>
<tr>
<td>Tier D</td>
<td>0.20</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 Automatic Binary Optimizer for z/OS, V1.3**

**Program PID: 5697-AB1**

<table>
<thead>
<tr>
<th>Entitlement identifier</th>
<th>Description</th>
<th>License option/Pricing metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>S017V8C</td>
<td>IBM Automatic Binary Optimizer for z/OS</td>
<td>Basic OTC, Value Units</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Orderable supply ID</th>
<th>Language</th>
<th>Distribution medium</th>
</tr>
</thead>
<tbody>
<tr>
<td>S017V8B</td>
<td>English</td>
<td>3590 Tape</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Entitlement identifier</th>
<th>Description</th>
<th>License option/Pricing metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>S017V8G</td>
<td>IBM Automatic Binary Optimizer for z/OS S&amp;S</td>
<td>Basic ASC, Value Units SW S&amp;S</td>
</tr>
</tbody>
</table>

No charge, decline SW S&S

Per MSU SW S&S Registration
Program name: IBM Automatic Binary Optimizer for z/OS Trial, V1.3

Program PID: 5697-TR1

<table>
<thead>
<tr>
<th>Entitlement identifier</th>
<th>Description</th>
<th>License option/Pricing metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>S017VTW</td>
<td>IBM Automatic Binary Optimizer for z/OS Trial</td>
<td>Unlimited installs, No charge</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Orderable supply ID</th>
<th>Language</th>
<th>Distribution medium</th>
</tr>
</thead>
<tbody>
<tr>
<td>S017VTT</td>
<td>English</td>
<td>3590 Tape</td>
</tr>
</tbody>
</table>

Subscription and Support PID: 5697-TRS

<table>
<thead>
<tr>
<th>Entitlement identifier</th>
<th>Description</th>
<th>License option/Pricing metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>S017VN6</td>
<td>IBM Automatic Binary Optimizer for z/OS Trial S&amp;S</td>
<td>Unlimited installs, No charge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SW S&amp;S Registration, No charge</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Orderable supply ID</th>
<th>Language</th>
<th>Distribution medium</th>
</tr>
</thead>
<tbody>
<tr>
<td>S017VN5</td>
<td>English</td>
<td>Paper Media</td>
</tr>
</tbody>
</table>

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® and z Systems 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
Product deliverables are shipped only through CBPDO and ServerPac. These customized offerings are offered for internet delivery in countries where Shopz product ordering is available. Internet delivery reduces software delivery time and allows you to install software without the need to handle tapes. For more details on Internet delivery, 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 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.

For additional information about the Product ServerPac option, refer to Software Announcement 212-272, 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 shipments will begin four 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.

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

Agreement for Acquisition of Software Maintenance

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

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

**License Information number**

IBM Automatic Binary Optimizer for z/OS, V1.3 (5697-AB1): L-MCHN-AMVS4U

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 technical support**

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**

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)**
Passport Advantage applies

No

Usage restriction

Yes

This offering is subject to usage restrictions.

IBM Automatic Binary Optimizer for z/OS, V1.3

In addition to the entitlements required for use of the Program on the machine(s) on which the Program is deployed, Licensee must also obtain Value Unit entitlements for the machine(s) on which the COBOL applications optimized using the Program are deployed and executed.

See the License Information documents for details.

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 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**

No

**Variable charges apply**

No

**Educational allowance available**

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

**Multi-Version Measurement**

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**

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>
<th>Parent, if applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>5697-AB1</td>
<td>IBM Automatic Binary Optimizer for z/OS</td>
<td>z/OS-based</td>
<td>Not applicable</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.
For more information on mainframe MSU-rated capacities, go to the IBM System z 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 visit the Mainframes section of the z Systems Exhibits 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 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® 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, go to the IBM System z 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). Once 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.

### On/Off CoD

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

### Statement of good security practices

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.

### Prices

Registered external customers 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.
Order now

To order, contact the IBM Digital Sales Center, your local IBM representative, or your IBM Business Partner. To identify your local IBM representative or IBM Business Partner, call 800-IBM-4YOU (426-4968). For more information, contact the IBM Digital Sales Center.

Phone: 800-IBM-CALL (426-2255)
Fax: 800-2IBMFAX (242-6329)

For IBM representative: askibm@ca.ibm.com
For IBM Business Partner: pwcs@us.ibm.com

IBM Digital Sales Offices
1177 S Belt Line Rd
Coppell, TX 75019-4642, US

The IBM Digital Sales Center, 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.

Trademarks

z13, z Systems, IBM z Systems, MVS and IMS are trademarks of IBM Corporation in the United States, other countries, or both.
IBM, z/OS, S/390, Passport Advantage, z/Architecture, OS/390, CICS, DB2, System z, zEnterprise and Parallel Sysplex are registered trademarks of IBM Corporation in the United States, other countries, or both.
Other company, product, and service names may be trademarks or service marks of others.

Terms of use

IBM products and services which are announced and available in your country can be ordered under the applicable standard agreements, terms, conditions, and prices in effect at the time. IBM reserves the right to modify or withdraw this announcement at any time without notice. This announcement is provided for your information only. Additional terms of use are located at:

Terms of use

For the most current information regarding IBM products, consult your IBM representative or reseller, or visit the IBM worldwide contacts page

IBM United States