IBM Z Batch Resiliency 1.2 provides enhanced integration with IBM Z Workload Scheduler, along with support for adopting IBM Z Cyber Vault through analytical insight and recovery

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At a glance

IBM Z(R) Batch Resiliency 1.2 delivers high-value resiliency management of non-database managed data and applications, leveraging detailed analytic reporting to provide insights to reduce manual approaches required to manage data outside of database control. IBM Z Batch Resiliency reduces dependency on domain expertise and time-consuming, error-prone analysis needed to determine the impact of data corruption incidents. Similar to subsystem database tooling for non-database managed applications and data, it improves resiliency and reduces enterprise business risk by offering immediate insight into application data interdependencies and vulnerabilities.

Key features of IBM Z Batch Resiliency 1.2 include the following:

- Capability to recover non-database managed data and applications at a data set, job, or step level, enabling recovery from data corruption, operational errors, or data impacting events
- Journal-like capability to identify affected workloads and data sets that might be impacted by an event or data set restoration
- Visibility into executing jobs and open data sets that might be at risk
- Point-in-time recovery capability for non-database-managed systems, such as batch workloads
- Near real-time comprehensive inventory of data sets, including detailed attributes and status, plus complete repository of backups created using any methodology (full-volume and logical) to help enable faster panel-driven recovery
- Identification of all data sets in an IBM(R) DS8000(R) Safeguarded Copy backup, including all data sets that were open at the time of a Safeguarded Copy, and the capability for surgical recovery of any data sets from Safeguarded Copy current and previous versions
  - Understanding of application data interdependencies and recovery points

  - Reporting of resiliency readiness and audit gaps

Enhancements delivered in IBM Z Batch Resiliency 1.2 provide enhanced integration with IBM Z Workload Scheduler, support for IBM System Management Facility (SMF) 92 records to manage data residing on z/OS(R) Distributed File Service z/OS File

System (zFS), support for customers adopting IBM Z Cyber Vault, and Japanese language support.

Overview

IBM Z Batch Resiliency 1.2 delivers capabilities to further simplify the management of sequential non-database managed data, such as that used in batch workloads. This helps to reduce time-critical tasks to identify and recover from problems such as data corruption events, thereby saving resources and reducing stress to support business-critical operations.

Together with the latest IBM Z hardware, storage, and software updates, IBM Z Batch Resiliency 1.2 forms a key foundation of an IT enterprise resiliency strategy on IBM Z. Visibility is key to understanding where your data is stored and what to do when responding to changes or data problems. In today's environment, workload schedules can change with limited notice, so access to accurate information from IBM Z Workload Scheduler helps ensure that you can make accurate decisions about affected files in minutes. With an increasing number of batch jobs accessing and updating files on zFS, the capability to track data and usage across platforms driven by IBM Z Workload Scheduler is supported, together with z/OS UNIX$^{(R)}$ file-system-driven batch workloads.

When implementing a robust cyber resiliency strategy to protect your enterprise against the increasing threat of ransomware, and to provide disaster recovery, IBM Z Batch Resiliency forms part of the solution to bring your production workloads back online by working together with technologies such as IBM DS8000 SafeGuarded Copy.

New in IBM Z Batch Resiliency 1.2 are the following:

- Enhanced integration with IBM Z Workload Scheduler through:
  - Enabling up-to-date batch job information available from IBM Z Workload Scheduler
  - Tracking of data and applications across platforms managed by IBM Z Workload Scheduler, including updates to data on zFS file systems
- Improvements to the TimeLiner feature, providing a reverse cascade report to identify affected workloads and data sets that might be impacted by a data corruption event
- Support for managing data on z/OS UNIX file systems using SMF 92 records
- Capabilities to benefit IBM Z Cyber Vault deployments, including:
  - A Cyber Vault Health Check report that provides insight into IBM DS8000 Safeguarded Copy backups through inventory and status data set mapping of backups, enabling data validation and data set open status at the time of the copy for critical files that are opened for input and cannot be recreated in the batch cycle
  - Integration with IBM z/OS Data Set Mobility Facility to identify data sets missing encryption or requiring updates to encryption status
  - API access to TimeLiner data to enable extraction for third-party use
  - Japanese translation of documentation and interface panels

Key requirements

IBM Z Batch Resiliency requires the following:

- IBM z/OS V2.2.0, or later

IBM Z Batch Resiliency makes use of the following:

- SMF record types 14 (opens for input), 15 (non-VSAM output), 30 (job and step initiation and termination), 60 (VSAM Volume Data Set Updated), 61 (ICF catalog), 64 (VSAM status), and 65 (ICF deletes). In addition, the following optional record can be collected: 92 (z/OS UNIX file system), 202 (DFSMSdss input record).
- Access to the system catalog using IDCAMS.
- A tape management system; commonly available products such as CA-1 TLMS, Control-M/Tape, DFSMSrmm, or ASG-Zara.
- A disk backup and recovery methodology; for example, FlashCopy$^{(R)}$, DFSMShsm aggregate backup and recovery support (ABARS), DFSMSdss, FDR, or CA Disk.
- A scheduling tool; for example, IBM Z Workload Scheduler.

Planned availability date

May 28, 2021

Description

IBM Z Batch Resiliency 1.2 delivers high-value resiliency management of non-database managed data and applications, leveraging detailed analytic reporting to provide insights to reduce manual approaches required to manage data outside of database control. IBM Z Batch Resiliency reduces dependency on domain expertise and time-consuming, error-prone analysis needed to determine the impact of data corruption incidents. Similar to subsystem database tooling for non-database managed applications and data, it improves resiliency and reduces enterprise business risk by offering immediate insight into application data interdependencies and vulnerabilities.

IBM Z Batch Resiliency 1.2 delivers new capabilities to further simplify the management of sequential non-database managed data, such as that used in batch workloads, reducing time-critical tasks to identify and recover from problems such as data impacting events, thereby saving resources and reducing stress to support business-critical operations.

Enhanced integration with IBM Z Workload Scheduler

IBM Z Batch Resiliency 1.2 provides integration with most leading schedulers on z/OS. Support for IBM Z Workload Scheduler has been specifically enhanced to ensure IBM Z Batch Resiliency is up to date with information coming from the scheduler that might include ad hoc changes to submitted workloads, which is then reflected in the IBM Z Batch Resiliency internal APPTABLE. This enables a more accurate analysis of what workloads and jobs have been submitted when investigating the impact of an issue and knowledge of what jobs will need to be resubmitted by IBM Z Workload Scheduler following restoring of selected data sets. The support is further enhanced by the additional capabilities to track application data stored on z/OS UNIX file systems and updated by jobs submitted by IBM Z Workload Scheduler.

Support for managing data within z/OS UNIX file systems using SMF 92 records

Many batch workloads make use of data stored on a z/OS UNIX file system, such as z/OS Distributed File Service z/OS File System (zFS). IBM Z Batch Resiliency 1.2 provides insight into this through SMF 92 records, together with updated backup reporting and restore capabilities for zFS files systems.

New capabilities to benefit IBM Z Cyber Vault deployments

With the threat from malicious data corruption a major concern for many enterprises, the IBM Z Cyber Vault solution is positioned to help clients address the challenge of logical data corruption. When full system backups are taken to provide an air-gapped cyber vault of critical data, the capability to know which batch jobs

were running and files open at copy time can help clients understand the value of each backup when making a decision to restore.

New capabilities in IBM Z Batch Resiliency 1.2 provide health check insight into IBM DS8000 SafeGuarded Copy backups from a Cyber Vault Health Check report that identifies any non-database managed data set that is open for output at the time of the Safeguarded Copy. IBM Z Batch Resiliency TimeLiner Reverse Cascade reports can assist in forensic investigation to identify the original source of the corruption by identifying the jobs and steps that updated the corrupted files, aiding in the isolation of the program that caused the error. In addition, IBM Z Batch Resiliency can identify which data sets are critical and need to be restored and which ones can simply be recreated. IBM Z Batch Resiliency can then be used to perform the surgical recovery of any non-database managed data sets that were open for output at the time of the Safeguarded Copy, automatically generating accurate restore Job Control Language (JCL). In addition, the IBM Z Batch Resiliency TimeLiner Forward Cascade Report can help develop a forward recovery plan for the applications that use the data that is surgically recovered.

Improvements to TimeLiner reports

TimeLiner is a feature that monitors production jobs and identifies data sets that were in use when a failure occurred, which can help you determine the point-in-time recovery period and quickly return applications to full production. Enhancements to this feature provide navigation options that enable the user to traverse in time between job steps, and a Reverse Cascade report that enables the user to traverse back from an identified point in time to identify what might have impacted a job, step, or data set. In a corruption scenario, the Reverse Cascade functionality can also assist in the identification of jobs that might have corrupted data sets based on the date and time of the event.

Integration with z/OS Data Set Mobility Facility

z/OS Data Set Mobility Facility is used by many clients to encrypt nonextended and extended data sets. IBM Z Batch Resiliency is enhanced to help identify the best candidates for data set encryption associated with specific applications, and any interdependencies with other applications are also identified.

IBM Z Batch Resiliency creates the control cards and JCL that are used by IBM z/OS Data Set Mobility Facility to encrypt nonextended and extended data sets. The control cards generated are grouped by application. In addition, for very large applications, the output can be load balanced, based on a target maximum of data (MB) in each group.

API access to TimeLiner data to enable extraction for third-party use

Data from the TimeLiner tables are externalized for access via a RESTful API. This is designed to enable simple access for any third-party application to use this data.

Japanese translation

IBM Z Batch Resiliency is now available with Japanese translation of documentation and interface panels within the product.

Value Unit-based pricing

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

Value Unit pricing offers price benefits for you. For each 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** . 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 IBM Z IPLA program that you have acquired is referred to as **entitled license capacity** . If you wish to grow your entitled license capacity for an IBM Z IPLA program, the calculation to determine additional needed Value Units is based upon the number of Value Units already acquired.

For each IBM Z IPLA program with Value Unit pricing, you should:

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

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

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

To determine the required license capacity for the IBM Z IPLA program you selected, see the Terms and conditions section.

Statement of general direction

IBM intends to make the following enhancement to IBM Z Batch Resiliency:

- Surgical recovery of individual data sets that assists the logical restoration of a production environment from the Cyber Vault, automatically generating restore JCL for required data sets

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

Reference information

For more information about IBM Workload Scheduler for z/OS, see Software Announcement 219-010, dated February 12, 2019.

Business Partner information

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

Program number

Program number	VRM	Program name
5698-BR1	1.2	IBM Z Batch Resiliency
5698-BR2	1.1	IBM Z Batch Resiliency S&S

Program PID number	Subscription and Support PID number
5698-BR1	5698-BR2

Education support

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

Call IBM training at 800-IBM-TEACH (426-8322) for catalogs, schedules, and enrollments.

Offering Information

Product information is available on the IBM Offering Information website.

Publications

No publications are shipped with this program.

IBM Z Batch Resiliency 1.2 documentation is published in IBM Documentation.

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 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.

Technical information

Specified operating environment

Hardware requirements

The hardware requirements can vary according to the volume of data ingested or managed by the program. See IBM Z Batch Resiliency documentation for further details and updates about hardware requirements.

Software requirements

- IBM z/OS V2.2.0, or later
- SMF record types 14 (opens for input), 15 (non-VSAM output), 30 (job and step initiation and termination), 60 (VSAM Volume Data Set Updated), 61 (ICF catalog), 64 (VSAM status), and 65 (ICF deletes). In addition, the following optional record can be collected: 202 (DFSMSdss input record).
- Access to the system catalog using IDCAMS.
- A tape management system such as CA-1 TLMS, Control-M/Tape, DFSMSrmm, or ASG-Zara.
- A disk backup and recovery methodology; for example, FlashCopy, DFSMShsm aggregate backup and recovery support (ABARS), DFSMSdss, FDR, or CA-Disk.

  Note: The software requirements can vary depending on your specific configuration. See IBM Z Batch Resiliency documentation for further details and updates about software requirements.

IBM Support

IBM Support is your gateway to technical support tools and resources that are designed to help you save time and simplify support. IBM Support can help you find answers to questions, download fixes, troubleshoot, submit and track problem cases, and build skills. Learn and stay informed about the transformation of IBM Support, including new tools, new processes, and new capabilities, by going to the IBM Support Insider.

Planning information

Packaging

The program in this announcement is distributed with:

- International Program License Agreement (Z125-3301)
- License Information document

Direct client support

For technical support or assistance, contact your IBM representative or go to the IBM Support Portal website.

Security, auditability, and control

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

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 program in this announcement all have Value Unit-Based pricing.

Program number	Program name	Value Unit exhibit
5698-BR1	IBM Z Batch Resiliency	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 IBM Z 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

Definitions of the charge metrics for this licensed product can be found in the following License Information document:

Program name	PID number	License Information document number
IBM Z Batch Resiliency	5698-BR1	L-LESS-BZ8PZM

Select your language of choice and scroll down to the Charge Metrics section.

Basic license

On/Off CoD

IBM Z Batch Resiliency is eligible for On/Off CoD with a temporary use charge calculated based on MSUs per-day usage.

Translation from MSUs to Value Units

	MSUs	Value Units/MSU
Base	1-3	1.0
Tier A	4-45	.15
Tier B	46-175	.08

	MSUs	Value Units/MSU
Tier C	176-315	.04
Tier D	316 or greater	.03

To order, specify the program ID number and the appropriate license or charge option. To suppress shipment of media, select the license-only option in CFSW.

Program name: IBM Z Batch Resiliency

Program ID: 5698-BR1

Entitlement identifier	Description	License option/Pricing metric
S018FJP	IBM Z Batch Resiliency	MultiVersion Measurement No Charge Value Units Qty 1
		On Off Capacity on demand Temporary Use Charge MSU-DAYs Qty 1
		User-based License One-Time Charge Value Units Qty 1

Orderable supply ID	Language
S018FJR	Multilingual
S018KJ5	Japanese

You choose the delivery method when you order the software. IBM recommends internet delivery. However, if you still require physical media, you can choose DVD.

Subscription and Support Program ID: 5698 -BR2

Entitlement identifier	Description	License option/Pricing metric
S018FJT	IBM Z Batch Resiliency S&S	Decline Subscribe and Support No Charge Base with Qty 0
		MultiVersion Measurement S&S No Charge Value Units Qty 1
		SW Subs and Sup Rgst No Charge Per MSU Qty 0
		SW Subscription and Support Annual Support Charge Value Units Qty 1
		SW Subscription and Support Monthly Support Charge Value Units Qty 1

Orderable supply ID	Language
S018FJV	Multilingual
S018KJH	Japanese

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 ID referenced above and the appropriate license or charge option.

IBM is also providing Subscription and Support for these programs with 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 by telephone.

- Entitles you to future releases and versions, at no additional charge. Note that you are not entitled to new programs.

When Subscription and Support is ordered, the charges will automatically renew annually unless canceled 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 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

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.

You choose the delivery method when you order the software. 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.

Terms and conditions

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

Licensing

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

Software Maintenance

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

This program is 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. This

program has 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$^{(R)}$ Operational Support Services - SoftwareXcel is an option if you desire added services.

License Information number

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

Program identifier	License Information document title	License Information document number
5698-BR1	IBM Z Batch Resiliency	L-LESS-BZ8PZM

Follow-on releases, if any, may have updated terms. See the License Information documents 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 Support Guide.

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 three years from the planned 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 Continuous Delivery 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)

No

Passport Advantage applies

No

Software Subscription and Support applies

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

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

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

For operating system software, the revised IBM Operational Support Services - SoftwareXcel offering will provide support for those operating systems and associated products that are not available with the Software Subscription and Support (Software Maintenance) offering.

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

IBM Operational Support Services - SoftwareXcel

Yes

Variable charges apply

Yes

Educational allowance available

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

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[R] 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, see the Ordering information section.

Program number	Program name	Terms
5698-BR1	IBM Z Batch Resiliency	Execution-based

Full-capacity mainframes

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

Execution based, z/OS based, full machine based: The required capacity of a z Systems[R] 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[R] 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[(R)]. You may have one or more different environments across the enterprise. To determine the required license capacity for each z Systems IPLA program with referenced-based terms, each environment should be assessed separately.

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

- Where MLC pricing is aggregated across the sysplex.

Sub-capacity eligibility

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

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

For that machine, you must create and submit a Sub-Capacity Report to IBM each month. Sub-Capacity Reports must be generated using the Sub-Capacity Reporting Tool (SCRT). For additional information or to obtain a copy of SCRT, 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 an IBM Z, or equivalent, server.

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

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

Statement of good security practices

IT system security involves protecting systems and information through 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 for charges. Refer to Purchase/upgrade tools on the IBMLink website.

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

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

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

Variable charges: The applicable processor-based one-time charge will be based on the group of the designated machine on which the program is licensed for use. If the program is designated to a processor in a group for which no charge is listed, the charge of the next higher group listed applies. For movement to a machine in a higher group, an upgrade charge equal to the difference in the then-current charges between the two groups will apply. For movement to a machine in a lower group, there will be no adjustment or refund of charges paid.

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