

IBM Z Batch Resiliency V1.1 provides operational resiliency and risk reduction for mainframe batch application data, leveraging analytics, and automation to deliver insight and resolution into data interdependencies and vulnerabilities

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At a glance

IBM Z^(R) Batch Resiliency V1.1 provides:

- Capability to recover batch applications at a fine grained level, potentially down to the job or even step level, enabling recovery from data corruption
- Near real-time visibility into running jobs and open data sets that might be at risk
- Point-in-time recovery capability for non-database systems
- Near real-time comprehensive inventory of data sets and backups (full-volume and logical) to help enable faster, panel-driven recovery
- Understanding of application interdependencies and recovery points
- Reporting of resiliency and audit gaps

Overview

IBM Z Batch Resiliency V1.1 delivers high-value resiliency management of batch applications, leveraging analytics and automated processes. IBM Z Batch Resiliency reduces the dependency on domain expertise and reduces the need to perform time-consuming and error-prone manual analysis. It can improve resiliency and reduce business risk for mainframe batch applications and data by offering immediate insight into application data inter-dependencies and vulnerabilities. The robust feature set is built on a foundation of near real-time collection and analysis of IBM^(R) System Management Facility (SMF) data. Analysis of data usage patterns and a comprehensive inventory of curated information (including batch applications and data backups) help to enable quick, automated recovery of mainframe batch data for operational use or disaster recovery events from any backup methodology without reliance on application expertise.

Near real-time SMF collection and analysis

The SMF collection and analysis capabilities of IBM Z Batch Resiliency are built for speed and efficiency. Collection is done continuously throughout the day and data is passed to the analysis subtasks for up-to-the-minute status of batch data usage and recoverability. IBM Z Batch Resiliency interfaces with multiple system

components to provide an accurate status of batch processing and a wealth of historical information:

- SMF data
- z/OS^(R) catalogs
- Tape management system
- Scheduling systems

Fast and automated recovery

IBM Z Batch Resiliency provides ease of recovery, accomplished without extensive application expertise, to greatly reduce the time to business resumption. When data sets need to be recovered, the IBM Z Batch Resiliency Interactive System Productivity Facility (ISPF) panel interface helps to enable a swift identification of the appropriate backup required, and automatically generates restore JCL to match the backup method. The source of the backup can be from backups that are initiated by IBM Z Batch Resiliency or those backups that are scanned in by IBM Z Batch Resiliency analysis processing. In addition to the templates that are provided for commonly available data movers, the IBM Z Batch Resiliency drivers enable you to create user-defined JCL templates for any methodology, including in-house-written utilities. During the restore process, users can choose to rename the data set to avoid overlaying an existing version.

With IBM Z Batch Resiliency, your installation gains the following capabilities:

- Granular, near real-time insight into batch jobs that are running on the system and any open data sets that may be at risk
- An understanding of the jobs that were running at a given point in time, identification of the data sets that were opened by those jobs, and a cascade report of downstream data dependencies
- The capability to restore data sets or applications by using the intuitive ISPF panel interface

Robust reporting portfolio

Using the wealth of information captured in the IBM Z Batch Resiliency databases, users can generate reports that detail the usage and relationships of batch applications and data by using the ISPF panel interface or running as a scheduled batch report. These reports identify resiliency and audit gaps to address compliance mandates by automatically providing audit reporting for recovery and data sharing regulations:

- Critical data sets without backup
- Critical data set sharing between applications (including between production and nonproduction jobs)
- Application data dependencies
- Duplication of backups
- IBM Db2^(R) database image copies audit
- IMS database backup audit

Key requirements

IBM Z Batch Resiliency requires the following:

- 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 (CA-1 TLMS, Control-M/Tape, DFSMSrmm, or ZARA).
- A disk backup and recovery methodology (for example, FlashCopy^(R), DFSMSshm aggregate backup and recovery support (ABARS), DFSMSdss, FDR, CA-DISK).

Planned availability date

May 3, 2019

Description

IBM Z Batch Resiliency V1.1 automates the analysis, backup, and restore of critical mainframe batch application data to provide operational resiliency and reduction of business risk. Users gain a robust inventory of data usage and backups and have the automated capabilities to recover mainframe batch data more quickly for operational or disaster recovery events.

IBM Z Batch Resiliency V1.1 is an end-to-end solution that consists of fully-integrated key components that bring value to the backup and recovery process.

Continuously intercept key SMF records

The SMF extractor component runs continuously to intercept the key SMF records that are input to the IBM Z Batch Resiliency analysis engine. The records are fed in near real-time to deliver a steady stream of information for analysis about the current state of application processing and recoverability.

Analyze SMF data in near real-time

IBM Z Batch Resiliency analyzes the incoming stream of SMF data in near real-time using multiple subtasks in parallel for processing speed and efficiency, minimizing system overhead. The resulting analysis provides a complete status of current batch processing and also updates the IBM Z Batch Resiliency databases for historical reporting. The information that is produced by the various analysis tasks provides the following benefits:

- History data is produced by the near real-time analysis subtask and retained, enabling users to produce analytical reporting.
- The near real-time backup subtask updates the changed date in the backup table for both direct access storage devices (DASDs) and tape data sets that are modified to reflect whether a tracked data set has a valid backup. Both full-volume and logical backups are tracked to enable restore of data at the data set, application or volume level.
- The near real-time scheduler subtask works with the inventory file to dynamically schedule backups when the data set becomes eligible for backup at the appropriate point in the batch processing stream.
- The virtual recovery simulator feature enables users to simulate a recovery scenario, ensuring that backups are available for the data sets that are required to resume processing.
- The TimeLiner feature tracks job and data set usage while jobs are processing. This provides accountability of jobs that are running at a given point-in-time, identifying data sets that are open and might need to be recovered in an operational event.
- SCANSMF gathers information for nonstandard utility backups, including in-house-developed tools, and updates the backup table to give a comprehensive inventory of all available data set backups.
- The scheduling interface captures updates to the production job scheduler and automatically updates the application table with new jobs or applications that are added, ensuring that backup requirements are identified for new or changed jobs.

- The fast copy interface captures backups that are executed by various Snapshot methodologies such as Flashcopy, zDP, TimeFinder, and ShadowImage, and includes them in the inventory of backups available for recovery.

Continuously capture data set activity

IBM Z Batch Resiliency TimeLiner feature runs continuously to capture data set open and close activity through Supervisor Calls (SVCs) and user exits, providing up-to-the-minute information about jobs executing on the system and the state of data sets used by the jobs. The TimeLiner proprietary system tracks and checkpoints information in its database and journal to provide operational and recovery personnel with valuable information to easily identify potential compromised data.

Improve backup and recovery with enhanced ABARS interface

The ABARS component of IBM Z Batch Resiliency enhances the existing capabilities of DFSMSHsm ABARS to give the user a simpler interface for using ABARS and more valuable information from the process by:

- Validating the ABARS aggregate lists before submission to DFSMSHsm so that ineligible files are not processed, reducing overhead and improving backup run times
- Scanning ABARS activity logs to update the IBM Z Batch Resiliency backup table, allowing for a simpler restore from an ABARS aggregate backup through the use of the IBM Z Batch Resiliency ISPF interface
- Capturing ABARS output and inserting it into the backup job, eliminating the need to scan through DFSMSHsm logs for backup results
- Identifying redundant backups across aggregates to reduce wasted resources

Value Unit-based pricing

Value Unit pricing for eligible IBM z Systems^(R) IBM International Program License Agreement (IPLA) programs enables a lower cost of incremental growth and enterprise aggregation. Each z Systems^(R) 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, see the [Terms and conditions](#) section.

Statement of general direction

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

- Analytic reports to help users analyze the data under Splunk and Elastic Stack

IBM Z Batch Resiliency plans to provide a variety of accurate and meaningful reports and dashboards for both Splunk and Elastic Stack, enabling deeper understanding of the data to reduce the time to value for analytic reporting.

To leverage these functions IBM Common Data Provider for z Systems will be required. IBM Common Data Provider for z Systems is a collection of software programs that rapidly centralize IBM z/OS operational data and feed it to analytics platforms.

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.

Program number

Program number	VRM	Program name
5698-BR1	1.1	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.

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^(R) ID and password are required (use IBMid).

[BP Attachment for Announcement Letter 219-160](#)

Publications

No publications are shipped with this program.

IBM Z Batch Resiliency, V1.1.0 and documentation is published in [IBM Knowledge Center](#).

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

The hardware requirements may vary according to the volume of data ingested or managed by the program. See the IBM Z Batch Resiliency V1.1 documentation in [Knowledge Center](#) for further details and updates about hardware requirements.

Software requirements

Note: The software requirements may vary depending on your specific configuration. See the IBM Z Batch Resiliency V1.1 documentation for further details and updates about 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 (CA-1 TLMS, Control-M/Tape, DFSMSrmm, or ZARA).
- A disk backup and recovery methodology (for example, FlashCopy, DFSMShsm aggregate backup and recovery support (ABARS), DFSMSdss, FDR, CA-DISK).

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 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	MSUs	Multiplied by Value Units per MSU	Equal Value Units
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	Charge metric	License Information document number
IBM Z Batch Resiliency	5698-BR1	Value Unit	L-EGON-B9KR5F

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
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
		On Off Capacity on demand Temporary Use Charge (MSU-DAYS)
		User-based License One-Time Charge Value Units
Orderable supply ID	Language	
S018FJR	Multilingual	

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	Basic ASC, per Value Unit SW S&S
		No charge, decline SW S&S
		Per MSU SW S&S registration
		Multi-Version Measurement S&S NC
Orderable supply ID	Language	
S018FJV	Multilingual	

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 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-EGON-B9KR5F

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 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)

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 Programs](#) 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, 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 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 Z Software pricing](#) 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, see *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 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 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.

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