



IBM CICS VSAM Recovery for z/OS V4.2 adds CICS Transaction Server V3.2 support and ABARS integration

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At a glance

CICS VR recovers CICS and batch VSAM data from physical or logical corruption:

- Helps recover from errors quickly
- Reduces the need for offline processing to exceed its batch window
- Improves availability of your online CICS systems

New in CICS VR V4.2:

- Support for CICS TS V3.2
- Integration with external backup products, including IBM DFSMS ABARS
- Manual control of VSAM sphere reorganization
- Enhanced logging support
- Enhanced hardware backup support

For ordering, contact:

Your IBM representative, an IBM Business Partner, or the Americas Call Centers at

800-IBM-CALL Reference: LE001

Overview

IBM CICS® VSAM Recovery for z/OS® (CICS VR) V4.2 delivers Day 1 toleration and exploitation support of CICS Transaction Server on z/OS (CICS TS) V3.2. This includes support for extended addressability Entry Sequenced Data Sets (ESDSs) used by CICS and batch, and integration with the Aggregate Backup and Recovery Support (ABARS) external backup utility.

New capabilities in CICS VR V4.2 include:

- Support for CICS TS V3.2 including support for extended addressability ESDSs used by CICS or by CICS VR batch logging and the ability to run in threadsafe mode
- Better control of the VSAM environment achieved through enhanced notification support enabling CICS VR to recover files backed up by the ABARS function of Data Facility Storage Management Subsystem (DFSMS), REPRO command of Access method services (IDCAMS), and other backup products
- Enhanced logging support including the ability to specify multiple UNDO logs, log stream retention, and log stream copy utility enhancements, plus 'log of logs' scan automation and a new Journal

Print utility

- Other enhancements including hardware backup support, message and installation verification program (IVP) improvements, extended reorganization support, and a new Notify sample

CICS VR, a member of the CICS Tools family, recovers CICS and batch VSAM data from physical or logical corruption. This helps you recover from errors quickly, reducing the need for offline processing to exceed its batch window and so improves the availability of your online CICS systems.

Key prerequisites

- z/OS V1.6, or later
- CICS TS V3.2 for extended ESDS support

Note: Except for extended ESDS support, CICS VR can be used with any supported release of CICS TS

Availability date

April 27, 2007

Description

CICS VR V4.2

- Helps automate recovery of damaged or lost VSAM data sets, caused by catastrophic hardware failure, software failure, or human error
- Supports CICS, batch, or combined environments
- Enhances environments where availability and VSAM data integrity is vital
- Delivers an ISPF panel interface and automates the construction of recovery jobs

The CICS VR ISPF panel interface supports:

- VSAM sphere forward recovery process using DFSMSHsm™, DFSMSdss™, ABARS, and IDCAMS backups
- Backup process to allow both sharp and fuzzy backups
- VSAM sphere reorganization process

CICS VR delivers a notification utility for backups other than DFSMSHsm, DFSMSdss and ABARS, allowing control of the backup and allocation of target data set prior to restoration from a backup for recovery.

CICS VR delivers a set of utilities allowing disaster recovery at a remote site, including:

- Log stream copy
- Recovery Control Data Set (RCDS) export/import
- Disaster recovery report

New and enhanced function in CICS VR V4.2

Support for CICS TS V3.2

- Extended addressability ESDSs used by CICS.
- Extended addressability ESDSs that can be used in a 'combined environment', sharing CICS VSAM Record Level Sharing (VSAM RLS) files with batch applications. This support requires APAR OA19958 for Transactional VSAM Services (TVS).
- Enhanced CICS VR Backout failure detection to operate in a threadsafe mode to complement the File Control threadsafe support in CICS TS V3.2

Integration with external backup products, including IBM ABARS

- Allows improved control of the VSAM environment achieved through enhanced notification support enabling file recovery via the ABARS function within the z/OS DFSMSHsm and DFSMSdss components, and IDCAMS REPRO.
- Delivers a new NOTIFY utility for backup of a VSAM sphere created by IBM or non-IBM products. CICS VR will then register information about the backup in the CICS VR RCDS. Thus backup information is available for the CICS VR ISPF dialog.

Note: This utility should not be used for those backup products that already have implemented CICS VR notification service, DFSMSdss, DFSMSHsm, and ABARS.

Manual control of VSAM Sphere reorganization

The new ISPF REORG Invocation allows you to manually reorganize VSAM spheres at any time. Previously, this function was integrated into the CICS VR Automated Recovery feature and is available only for datasets that had suffered a backout failure. ISPF REORG invocation can be used to generate and submit the reorganization job by means of the CICS VR ISPF Dialog interface. The reorganization job is used to increase the space allocated for the VSAM sphere, and/or to change the control interval sizes of any sphere component.

Enhanced logging support

- **Multiple UNDO Logs** — The new multiple undo logs enhancement allows you to use any number of undo logs for their undo logging tasks, instead of single undo log. The selection of the particular undo log to use depends on user ID, job name prefix, and VSAM sphere name high-level qualifier, and allows users to segment use of function, for example to separate test logs from production.
- **Log stream retention** — Using the CICS VR interface, you can set a retention period for MVS™ log streams and log of logs streams. The retention period for blocks value applies to all registered log streams. CICS VR 4.2 users can specify individual retention criteria for log streams registered to CICS VR.

The Automatic individual "de-register" field on the CICS VR individual log stream de-register window shows whether individual retention period is specified for any log stream (ON) or no log streams registered to CICS VR that have individual deregistration criteria specified (OFF).

• Log stream copy utility enhancements

- Enhanced granular specification of STARTIME and STOPTIME options.
- Specification of 'browse cursor' to control continuity of the log stream copying.
- New DELETE option lets you delete all blocks from the log stream up to the last copied block inclusively, which is useful when a customer wants to prevent log stream overloading. This provides an alternative to the existing CICS VR function of log stream auto-deregistration, and allows deletion of log stream data to proceed only upon successful copying of the log stream.

• 'Log of logs' scan automation

- The log of logs scan utility scans all the log of logs that are registered in the recovery control data set (RCDS), gathers information needed for recovery, and updates the RCDS with this information.
- The scan will run automatically when the panel interface is used to perform a forward recovery. CICS VR provides a capability to automatically run the log of logs scan at regularly scheduled times using the CICS VR server address space. It reduces overall overhead and cost of data sets recovery.
- Additionally, CICS VR provides a capability to manually run the log of logs scan at the most suitable times using the CICSVR server address space.

- **New Journal Print utility** — Prints information about records logged by CICS VR on an MVS log. The CICS VR Journal Print Utility is invoked by submitting a batch job executing the utility program, DWWJUP.

Other enhancements including hardware backups support

- Hardware backup support — Some hardware backup programs, (for example, FLASH COPY), do not use backup while open (BWO) protocol. To support these programs for VSAM data

sets forward recovery, a new "No tie-ups" option is available.

- Message improvements
 - When CICS VR detects an error which can lead to termination of the CICS VR server address space CICS VR will produce the appropriate "E" messages instead of "I" messages with the same or changed message text to simplify problem determination and resolution. This improves CICS VR usability and serviceability.
 - CICS VR ensures that all of the produced messages are written to the message data set and are available to browse when the "BROWSE MESSAGES" function of the panel interface is used, improving CICS VR usability and reliability.
- IVP improvements — the installation verification process of CICS VR includes jobs to verify product installation. One of the jobs is used to allocate the VSAM datasets with original names. In previous versions of CICS VR, the user had to change the parameters of the jobs (VSAM sphere names, volume) throughout the whole job to conform to personal needs and naming conventions. Now it is possible to specify all of the parameters as a PARM statement for the steps, at the top of the job.
- New Notify sample — The source code of a sample of the CICS VR file copy notification program DWWIFCNS in the DWW.SDWWSORC data set is provided.
- Migration Utility — The migration utility allows RCDS migration from CICS VR V2.2, V2.3, V3.1, V3.2, V3.3, V4.1 and CICS VR 4.1 with PK28852 to CICS VR 4.2. This utility automatically identifies the migrated CICS VR version and transforms RCDS tables to RCDS V4.2 format.

Accessibility by people with disabilities

The following features support use by people with disabilities:

- Operation by keyboard alone
- Optional font enlargement and high-contrast display settings
- Screen readers and screen magnifiers tested for use by people with visual impairment
- Suitable for people with hearing impairment

Softcopy PDF and BookManager® documentation is shipped with the product. PDF documentation supports optional font enlargement, high-contrast display settings, and may be operated by the keyboard alone. Alternative text will be available for unsuitable diagrams and HTML versions of the CICS VR manuals will be available for download.

You can request a U.S. Section 508 Voluntary Product Accessibility Template (VPAT) with details on accessibility compliance at

http://www.ibm.com/able/product_accessibility/index.html

Section 508 of the U.S. Rehabilitation Act

CICS VSAM Recovery for z/OS V4.2 is capable as of April 27, 2007, when used in accordance with associated IBM documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it.

Value Unit-based pricing

Value Unit pricing for eligible IBM eServer® System z™ IBM International Program License Agreement (IPLA) programs enables a lower cost of incremental growth and enterprise aggregation. Each System 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 System 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 System z IPLA program that you have acquired is referred to as **entitled license capacity**. If you wish to grow your entitled license capacity for a System z IPLA program, the calculation to determine additional needed Value Units is based upon the number of Value Units already acquired.

For each System 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, visit the Value Unit Converter Tool Web site

<http://ibm.com/zseries/swprice/vuctool>

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 System z IPLA program you selected, refer to the Terms and conditions section.

Product positioning

All users of CICS TS with business-critical data stored on VSAM should use CICS VR. In the event of a hardware or software failure that results in loss of data, CICS VR can recover lost VSAM data to the state that existed before the damage was done. It can also recover VSAM data that was updated through batch applications, using the CICS VR VSAM batch logging feature.

With this new release, CICS VR becomes the most functional VSAM recovery tool in the market. IBM has demonstrated its commitment to supporting this area of the zSeries® environment with successive releases of CICS VR which have each added significant new function. At the same time, as well as being a highly functional offering, CICS VR is priced competitively.

CICS VR is complementary to ABARS, a function within the optional DFSMSshm and DFSMSdss components of z/OS. If you use ABARS, consider the benefits of CICS VR.

CICS VR, a member of the CICS Tools family, can help you maintain a high level of performance and availability of CICS, and help speed up the overall end-to-end development effort for new applications. For more details of the CICS Tools family, visit

<http://www.ibm.com/software/htp/cics/tools/>

For more details on IBM System z software, visit

http://www.ibm.com/software/os/systemz/en_US/index.html

Reference information

For information on CICS VR V4.1, refer to [205-263](#), dated October 18, 2005.

For information on CICS TS V3.2, refer to [207-051](#), dated March 27, 2007.

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 IBM ID).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=207-052>

Trademarks

DFSMSdss, DFSMSshm, MVS, and System z are trademarks of International Business Machines Corporation in the United States or other countries or both.

CICS, z/OS, BookManager, eServer, and zSeries are registered trademarks of International Business Machines Corporation in the United States or other countries or both.

Other company, product, and service names may be trademarks or service marks of others.

Offering information

Product information is available via the Offering Information Web site

<http://www.ibm.com/common/ssi>

Publications

The following publications are provided for CICS® VR V4.2. Other than the Program Directory, they are offered only in displayable softcopy form, in PDF, HTML, and BookManager® format.

Title	Order number
CICS VR V4.2: Messages and Problem Determination	SC34-6803
CICS VR V4.2: User's Guide	SC34-6804
CICS VR V4.2: Implementation Guide and Reference	SC34-6802
CICS VR V4.2: Program Directory	GI10-2599

These publications are available free of charge to read or download from the IBM Publications Center Portal at

<http://www.ibm.com/shop/publications/order>

The Program Directory, in hardcopy, is the only publication shipped with the product.

In addition, the CICS VR books will be available in BookManager softcopy format with the following Collection Kits. These Collection Kits are updated and reissued at regular intervals; so they will not contain the new CICS VR V4.2 publications immediately at the time of initial product availability.

Title	Order number
IBM Transaction Processing and Data Collection	SK2T-0730
z/OS(R) Software Products Collection	SK3T-4270

Technical information

Specified operating environment

Hardware requirements: CICS VR V4.2 executes on any S/390® or z/Architecture™ processor that supports the required release of z/OS.

There is no change in 24-bit real or virtual storage from the previous release; CICS VR V4.2 requires a minimum of 4 MB of virtual storage below the 16 MB line.

Software requirements

- z/OS V1.6, or later is required.
- For extended ESDS support, CICS TS V3.2 is required.
- CICS VR 4.2 can be used with CICS TS V2.2, and above.

Compatibility: CICS VR migration utility allows Recovery Control Data Set (RCDS) migration from CICS VR V2.2, V2.3, V3.1, V3.2, V3.3, V4.1, and V4.1 with PK28852 applied to CICS VR V4.2 format.

CICS VR V4.2 can coexist with earlier releases of CICS VR. The RCDSs used by the lower release of CICS VR must be separate from the RCDSs used by CICS VR V4.2.

When migrating to CICS VR from another recovery product, you will be installing CICS VR and performing all required setup actions for the first time. CICS VR does not supply a utility that transfers recovery information stored by the previous recovery product into the CICS VR RCDS. However, by registering the log of logs to CICS VR and then periodically performing a log of logs scan, the CICS VR RCDS will automatically be populated with recovery information such as:

- Names of updated VSAM spheres
- Names of log streams that contain the log records
- Update activity dates and times

If DFSMSHsm™ is used to create backups, then the backups are automatically displayed through the CICS VR panel interface, because CICS VR dynamically queries the DFSMSHsm inventory. If DFSMSdss™, ABARs, or another product is used to create logical backups, CICS VR can be notified about new backups created for your VSAM data sets. The backup information is stored in the RCDS. Therefore, you should be able to create recovery jobs for VSAM spheres after performing a log of logs scan without migrating recovery information stored from the previous recovery product.

Users group requirements

The following FITS customer requirements are satisfied by CICS VR V4.2:

- MR00073233 — CICS VR automatic deregister recalls migrated files.
- MR0219063953 — Add extended addressability mode support for ESDS.
- MR050506273 — Provide general purpose batch utility to invoke DFSMS IGWABWO callable services.
- MR0621053217 — Define multiple log streams per system.
- MR0902053417 — CICS VR panels for non-VSAM backed up files.
- MR1005046519 — CICSVR inventory backup notification support DFSMSHsm ABARS ABACKUP.
- MR1117054236 — Supply sample NOTIFY program.
- MR1201054221 — Add IDCAMS automatic notification.
- MR1206053737 — Remove hardcoded DSNs in IVP.

Planning information

Packaging: CICS VR V4.2 is shipped on 3480 1/2-inch data cartridge — 34K bpi uncompressed media for the basic object material. Also shipped with the product are:

- IBM Program License Agreement (IPLA) in multilanguage booklet (Z125-3301)
- License Information for CICS VR V4.2, in multilanguage booklet (GC34-6688)
- Proof of Entitlement (PoE)
- Program Directory for CICS VR V4.2 (GI10-2599)

Security, auditability, and control

Program users may wish to employ the security and auditability features of Resource Access Control Facility (RACF®) to control the use of CICS VR.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

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 unmatched portfolio of capabilities. Together, we provide the global reach, intellectual capital, industry insight, and technology leadership to support any critical business need.

To learn more about IBM Software Services or to contact a Software Services sales specialist, visit

<http://www.ibm.com/software/sw-services/>

Ordering information

The ordering for CICS VR V4.2 is unchanged from V4.1. For ordering information refer to [205-263](#), dated October 18, 2005.

Charge metric

Program name	PID number	Charge metric
CICS VSAM Recovery for z/OS V4.2	5655-P30	Per Value Unit
CICS VSAM Recovery for z/OS -- Subscription and Support	5655-H93	Per Value Unit

Processor

A processor (commonly called a CPU or core) is a functional unit within a computing device that interprets and executes instructions. A processor consists of at least an instruction control unit and one or more arithmetic or logic unit. With multicore technology each core is considered a processor. With full capacity licensing, a PoE must be acquired for all activated processors available for use on the server.

The program in this announcement has Value Unit-Based pricing.

Program number	Program Name	Value Unit Exhibit
5655-P30	CICS VSAM Recovery for z/OS V4.2	VUE007

For each zSeries® 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 zSeries IPLA program you select
- The applicable Value Unit Exhibit
- The applicable Terms
- Whether your current mainframes are full-capacity or sub-capacity

Ordering z/OS through the Internet

ShopzSeries 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). ShopzSeries is available in the U.S. and several countries in Europe. In countries where ShopzSeries is not available yet, contact your IBM representative (or IBM Business Partner) to handle your order via the traditional IBM ordering process. For more details and availability, visit the ShopzSeries Web site at

Customized offerings

Product deliverables are shipped only via Customized Offerings (for example, CBPDO, ServerPac, SystemPac®).

CBPDO and ServerPac are offered for electronic delivery, where ShopzSeries product ordering is available. For more details on electronic delivery, refer to the ShopzSeries help information at

<http://www.software.ibm.com/ShopzSeries>

Media type for this software product is chosen during the customized offerings ordering process. Based on your customer environment, it is recommended that the highest possible density tape media is selected. Currently offered media types are:

- CBPDOs — 3480, 3480 Compressed, 3490E, 3590, 3592*
- ServerPacs — 3480, 3480 Compressed, 3490E, 3590, 3592*
- SystemPacs — 3480, 3480 Compressed, 3490E, 3590, 3592*

* 3592 is highest density media, which will ship the fewest number of media

Once a product becomes generally available, it will be included in the next ServerPac and SystemPac monthly update.

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 two weeks after inclusion in ServerPac.
- SystemPac shipments will begin four weeks after inclusion in SystemPac due to additional customization, and data input verification.

Terms and conditions

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

Licensing: IPLA including the License Information (LI) document and PoE govern your use of the program. PoEs are required for all authorized use.

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

These programs are licensed under the IPLA and the associated Agreement for Acquisition of Software Maintenance, which provides for support with ongoing access to releases and versions of the program. IBM includes one year of Software Maintenance with the initial license acquisition of each program acquired. The initial period of Software Maintenance can be extended by the purchase of a renewal option, if available. 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.

S/390 and System z™ IBM Operational Support Services — SoftwareXcel is an option if you want added services.

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. Consult the IBM Software Support Guide for further information at

<http://www.ibm.com/software/support>

IBM will maintain this information for at least one year after the original licensee acquires the program ("Warranty Period").

Program support: Enhanced support, called Subscription and Support, includes telephone assistance (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. You will be notified of discontinuance of support with 12 months' notice.

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

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

Authorization for use on home/portable computer: You may not copy and use this program on another computer without paying additional license fees.

Other terms

Volume orders (IVO): No

IBM International Passport Advantage Agreement:

Passport Advantage applies: No

Software Maintenance applies: No

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 newly announced 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 SoftwareXcel offering, visit

<http://www.ibm.com/services/sl/products>

For additional information on the revised IBM Operational Support Services, refer to [601-023](#), dated July 10, 2001.

IBM Operational Support Services — SoftwareXcel: No

System i™ Software Maintenance applies: No

Variable charges apply: No

Educational allowance available:

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

Replaced programs:

Program number	Program name
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5685-009
5695-010

CICS VSAM Recovery/MVS™ V1
CICS VSAM Recovery/MVS/ESA™ V2

Replacement program:

Program number	Program name
5655-P30	CICS VSAM Recovery for z/OS V4

Note: CICS VR V3 (5655-H91) does not appear in this list because, unlike V1 or V2, it is a one-time-charge product.

Sub-capacity terms and conditions

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

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

Program number	Program name	Terms	Parents
5655-P30	CICS VSAM Recovery for z/OS V4.2	Reference-based	5655-147 5697-E93 5655-M15

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

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

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

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

For more information on sub-capacity System z IPLA terms and conditions, refer to [204-184](#), dated August 10, 2004.

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

An environment is defined as either a single or standalone 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 System z IPLA program with referenced-based terms, each environment should be assessed separately.

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

- That meets the criteria defined in [198-001](#), dated January 13, 1998.
- Where MLC pricing is aggregated across the Sysplex.

Sub-capacity eligibility: To be eligible for sub-capacity charging on select System z 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 System z (or equivalent). On that machine:

- All instances of the OS/390® operating system must be migrated to the z/OS (or z/OS.e) operating systems
- Any licenses for the OS/390 operating system must be discontinued
- All instances of the z/OS operating (or z/OS.e) 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, visit the System z Software Pricing Web site

<http://ibm.com/zseries/swprice>

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 System z Workload License Charges (Z125-6516).
- The complete terms and conditions for sub-capacity EWLC are defined in the IBM Customer Agreement — Attachment for IBM eServer® System z 890 and 800 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 IBM System z9™ and eServer zSeries Programs Sub-Capacity Pricing (Z125-6929). Once the amendment is signed, the terms in the amendment replace any and all previous System z IPLA sub-capacity terms and conditions.

On/Off Capacity on Demand

To be eligible for On/Off Capacity on Demand pricing, you must be enabled for temporary capacity on the corresponding hardware, and the required contract, Attachment for Customer Initiated Upgrade and IBM eServer On/Off Capacity on Demand — Software (Z125-6611) must be signed prior to use.

Prices

Information on charges is available at

<http://www.ibm.link.ibm.com/>

Select "United States" and then click on "IBMLink 2000".

For charges information on CICS VSAM Recovery V4.2, refer to [205-263](#), dated October 18, 2005.

IBM Global Financing

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