IBM Tivoli Advanced Backup and Recovery for z/OS, V2.2 delivers powerful tool to help manage critical z/OS backup and recovery activity

At a glance

Highlights of IBM® Tivoli® Advanced Backup and Recovery for z/OS®, V2.2:

- Users of IBM Tivoli Monitoring can:
  - View backup information at a glance
  - Initiate backup and recovery functions from a single GUI by leveraging Tivoli Enterprise Portal (TEP)
- DB2® database image copies can be tracked to help ensure they are synchronized with related datasets used in composite applications.
- Users of distributed platform backup and replication tools, such as IBM Tivoli Storage Manager and IBM Tivoli Storage Productivity Center, can use extended capabilities of IBM Tivoli OMEGAMON® Dashboard Edition to help create a consolidated view of backup status across platforms.

For ordering, contact your IBM representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: LE001).

Overview

IBM Tivoli Advanced Backup and Recovery for z/OS, V2.2 helps maintain a resilient z/OS environment in which complex z/OS applications can be restored quickly from either local outages or disaster situations. It monitors applications automatically, determines the critical datasets that applications use, and helps ensure the applications are backed up when and where they should be.

Advanced Backup and Recovery for z/OS, V2.2 delivers the control and visibility that may be needed to help manage critical z/OS backup and recovery activity. It is designed to:

- Deliver powerful function for fast, reliable, and accurate backups
- Help identify data that is not backed up, whether by omission or due to system problems
- Provide alerts so corrective action can be taken

In addition, Advanced Backup and Recovery for z/OS, V2.2 can help reduce costs associated with remote Direct Access Storage Device (DASD) replication by helping to identify critical data for replication, providing a localized backup for recovery, and helping to eliminate duplicate backups. Automated, centralized tracking of z/OS
backups, including DB2 image copies, can enable quick recovery, ranging from local outages to recovering the z/OS environment offsite. This can help to save crucial time and money and to eliminate error-prone manual processes.

**Key prerequisites**

Refer to the Technical information section.

**Planned availability date**

March 19, 2010

**Description**

Tivoli Advanced Backup and Recovery for z/OS, V2.2 offers flexibility and choice to automate manual, time-consuming tasks by helping to identify critical data assets, automate the backup of those assets, and provide a centralized inventory of backups. These features can help users quickly recover from local, unplanned outages or recover their z/OS environment offsite, and thereby assist in saving crucial time and money.

**Enhancements to Advanced Backup and Recovery for z/OS, V2.2:**

- The Automated Critical Data Identification (ACDI) component delivers:
  - Improved integration of its Interactive System Productivity Facility (ISPF) panels and functions
  - Enhanced support for the Critical Backup/Tracking (CBTI) backup end function
- The CBTI component delivers improvements to its backup end process, which includes being functionally linked to ACDI application attributes and reporting enhancements.
- Tape Management System metadata support is provided for RMM and CA-1, in which user tape dataset space information is recorded and used by Aggregate Backup and Recovery (ABARS) Manager and Aggregate LoadBalancer.
- Tape location (OUTCODE) support is provided by the ABARS Manager Tape Pull List report and the CBTI Tape Pull List report.
- Aggregate LoadBalancer is improved by delivering:
  - The capability to include using the user tape dataset size in distribution calculation
  - Functional and reporting enhancements
- Online message presentation is improved to provide:
  - Support for searching by message ID mask
  - A standardized message format
- The Health Check utility is improved to help:
  - Validate ABARS Manager inventory record structure
  - Reconcile ABARS Manager and cataloged backup inventories

Advanced Backup and Recovery for z/OS, V2.2 has three key components, each of which adds value to the backup and recovery process:

- ACDI
- ABARS Manager
- CBTI
ACDI

The ACDI component works through your system's job scheduler, Job Control Language (JCL), and system management facilities (SMF) to automatically help identify critical input and output datasets that should be backed up so that as your applications change, the data that is backed up can automatically change as well. A list of the critical data assets used by the application is automatically constructed each time the application executes.

ACDI executes continuously to help identify data assets used by production batch applications, started tasks, and individual users. By automating this process, it helps to prevent critical errors and to devote developers' time to productive activities rather than monitoring the list of assets required for backups.

The list of critical datasets can be used to trigger immediate backup by utilities such as Advanced Backup and Recovery for z/OS's ABARS support manager component, DFDSS, Innovation's FDR, Innovation's FDR/ABR, or CA-DISK. In addition, the dataset list is an important application analysis tool for developers that can help them identify application data for replication or remote mirroring.

ABARS Manager

In the z/OS environment, those who used ABARS or in the past have considered ABARS too difficult to manage manually, may find that Advanced Backup and Recovery for z/OS, V2.2 can help simplify the process of backing up data from disk, tape, and DFSMShsm™ migration without recall by using a single data mover and intelligent automated features to help provide a backup and recovery system for critical application data.

One of the more difficult tasks in managing backup and recovery processes is setting up and managing the lists of data associated with z/OS applications, called aggregates. Powerful extensions to the ABARS facility of DFSMShsm help users take advantage of this archiving capability. When using ABARS Manager, users can create synchronized application backups for both local and off-site recovery, and recover applications, by application priority, at the recovery site.

Advanced Backup and Recovery for z/OS's ABARS Manager component automates and enhances ABARS processes to help:

- Create complete application backups, including disk, tape, and DFSMShsm migrated data sets needed for recovery
- Shorten backup windows and reduce cost by helping to eliminate redundant backups of data that have not changed
- Automate the backup of changed data in support of government and industry regulations and acts, such as the Sarbanes-Oxley Act
- Reduce or eliminate other utility backups, such as full-volume dumps, DFSMShsm automatic backup, or backups taken in batch processing
- Support local recovery with the Search for Data Set and Recovery feature, allowing single or selective data sets recovery, including tape and migrated data sets
- Access backup and recovery information and status through one centralized database, viewed using either the TEP interface or an easy-to-use ISPF interface
- View the full ABARS activity log, all error messages, and a condensed status summary online, which helps make managing backups simple
- Obtain detailed data set information, including VTOC information with recovery capacity requirements, recovery tape volume serial (VOLSER), and other key planning and operational details
- Create customized backups using powerful SDSL language that supports over 30 criteria, including the ability to select data by means other than using the data set name
- Monitor ABACKUP and ARECOVER events, while they are executing, using the ABARS monitor feature
• Ensure that users are not missing data needed to process forward into weekly, monthly, quarterly, and annual cycles, using the incremental ABARS feature
• Recover from only the most current backup copy of every data set to help avoid processing errors caused by restoring from older backup copies
• Prepare catalogs for "empty" or "full" recovery at the recovery site using CATSCRUB
• Recover applications by criticality at the recovery site to help meet recovery time objectives for critical applications

CBTI

The CBTI component helps track and inventory backups taken in a z/OS environment without JCL changes. This component helps track and manage backups created by DFSMShsm, Innovation's FDR, Innovation's FDR/ABR, IDCAMS, DFSMShsm Incremental, and AUTODUMP. In addition, it helps track backups taken by applications during their batch processing, with utilities such as IEBGENER, IEBCOPY, and DFSORT™. The inventory helps provide visibility to almost all backups in the environment and recovery support by generating restore jobs. Reporting helps provide proof that critical data is backed up and recoverable. In addition, the CBTI component helps identify what is not backed up in your environment and alerts users so that corrective action can be taken.

The CBTI component helps:

• Track and inventory all backups in the z/OS environment, including ABARS Manager and IBM Tivoli Advanced Catalog Management for z/OS backups
• Be resilient to outages and prepare for local or off-site recovery
• Find data assets and associated backups easily and restore data with an easy-to-use, familiar ISPF interface
• Provide proof that critical data has a backup, and helps identify what is not backed up to ensure critical data is not missing
• Identify which data sets are being backed up multiple times by more than one utility, so users can reduce the occurrence of redundant backups
• Eliminate the potential for back leveling more current data during restore
• Build restore JCL and restore data from the backup copy

Advanced Backup and Recovery for z/OS, V2.2 provides an easy-to-use GUI via TEP that can provide backup status and audit readiness at a glance. Integration with other products through the TEP helps make it easier to relate backup status to other aspects of managing the System z® storage environment. Common viewing and take-action capability make it easier to transfer learning from one element of storage management to the next, which can help improve time-to-value and reduce learning costs. The TEP interface provides an easy way to capture expert knowledge directly into the product, to help reduce the constant reliance on experienced subject matter experts, and add flexibility to the user workforce.

Integration with IBM Tivoli OMEGAMON XE for Storage through TEP

Advanced Backup and Recovery for z/OS, V2.2 integrates with the IBM Tivoli Monitoring V6.2 infrastructure components that enable it to supply TEP with key business performance metrics for enhanced visualization and correlation within new workspaces, as well as with other IBM Tivoli Monitoring V6.2 monitored systems. This integration delivers a single GUI though TEP, which is used by many IBM Tivoli monitoring and management products, including IBM Tivoli OMEGAMON XE for Storage, to help discover and investigate problems and take immediate corrective actions. A dedicated TEP workspace for Advanced Backup and Recovery for z/OS V2.2 shares key information with IBM Tivoli OMEGAMON XE for Storage to help immediately discover and investigate problems and automatically take corrective actions.

If you have not separately purchased a license to IBM Tivoli Monitoring V6.2, you can obtain the TEP-based function by acquiring a no-charge, limited use license to IBM Tivoli Monitoring Services on z/OS, V6.2 (5698-A79). This limited use license
is subject to usage restriction on use of the various IBM Tivoli Monitoring V6.2 components.

**IBM Tivoli Service Management Center for System z (SMCz)**

SMCz is an IBM Service Management-based methodology and unified product suite designed to increase the availability of business-critical IT services as well as their stability. It focuses on helping users to more easily program, manage, and administer a mainframe, which is the most robust platform from which to run the business of the enterprise.

Among the many hard dollar business values it endeavors to bring to the user's enterprise, SMCz may:

- Help optimize productivity of IT personnel and increase end-user satisfaction
- Align IT operations and the business objectives from a service assurance perspective
- Align and support the IT Infrastructure Library® (ITIL®) processes within the enterprise

SMCz solutions help to:

- Provide the required visibility, control, and automation across the service, technical support, operations, security, and financial domains
  - Visibility: Users have a single, integrated view of critical applications on the mainframe, showing the linkages between IT assets and business applications.
  - Control: Users can customize views to support such functions as business services, services requests, finance, security, IT production, support, and operational control.
  - Automation: Based on needs, SMCz combines process automation software such as IBM Tivoli Change and Configuration Management Database, IBM Tivoli Application Dependency Discovery Manager, IBM Tivoli Business Service Manager, and IBM Tivoli Service Request Manager®.
- Enable the transformation from a System z resource management focus to a centralized System z service management mode

One of the key components of SMCz is System z storage management software from IBM Tivoli. Because IBM Tivoli software provides a rich set of System z storage management offerings to help IT organizations address today's enterprise challenges, organizations can benefit from a comprehensive System z storage management solution that bridges silos of people, technology, processes, and information with increased IT operational efficiency and effectiveness.

In addition to traditional Interactive System Productivity Facility (ISPF), batch interfaces, or both, IBM Tivoli System z storage management offerings use TEP to provide simplified GUIs that help IT staff, who are new to the platform, learn and execute operational tasks. TEP integrates many IBM offerings, creating synergy across the solution. TEP interfaces aggregate and combine performance and availability operational data from many sources, helping to reduce the time and skills needed to diagnose problems and take corrective actions.

An organization may be able to leverage a new generation of workers as it grows and maintains System z skills. The System z storage solution helps manage disk and tape storage environments and hierarchical storage environments (including tapes) more efficiently and effectively.

**Key functions:**

- Help prevent storage-related abends
- Help monitor workload inputs and outputs
- Help manage performance and availability of both online and offline storage subsystems
- Help ensure the health and efficiency of the IBM DFSMSHsm environment
• Provide backup and recovery
• Check health
• Help maintain the critical Integrated Catalog Facility (ICF) catalogs and Virtual Storage Access Method (VSAM) files
• Share tapes across sysplexes

The IBM System z storage management portfolio includes the following component products (refer to the Web site following the product name for product information).

• IBM Tivoli OMEGAMON XE for Storage on z/OS
• IBM Tivoli Advanced Reporting for DFSMSshm
• IBM Tivoli Advanced Audit for DFSMSshm
• IBM Tivoli Advanced Catalog Management for z/OS
• IBM Tivoli Advanced Allocation Management
• IBM Tivoli Tape Optimizer on z/OS
• IBM Tivoli Automated Tape Allocation Manager for z/OS
• IBM Tivoli Advanced Backup and Recovery for z/OS

Entitlement information

If you have the current offering listed in the table below, you are entitled to Advanced Backup and Recovery for z/OS, V2.2. You can move your Subscription and Support entitlements based on the current Subscription and Support pricing of the replacement offering. You must be current on Software Subscription and Support (also referred to as Software Maintenance) to be eligible for move of Subscription and Support entitlements. If you are not current on Software Subscription and Support, you will have to pay a get-current or Software Subscription and Support reinstatement fee.

The Subscription and Support entitlement move is for the same capacity as currently licensed when moving to the replacement offering. You are entitled to use the software on the same systems that you are currently managing.

For more information on move of Subscription and Support entitlements, contact your IBM representative.

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<th>Replacement entitlement</th>
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Accessibility by people with disabilities

A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at


Value Unit-based pricing

Value Unit pricing for eligible IBM 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.

Program number

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Product identification number

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<th>Support PID number</th>
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Education support

Comprehensive education for IBM Tivoli products is offered through Worldwide Tivoli Education Delivery Services. A wide range of training options are available, including classes led by instructors, learning on demand, on-site training, and blended learning solutions.

For additional information, visit


Offering Information

Product information is available via the Offering Information Web site

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

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).


Publications

The following hardcopy publications are shipped with the basic machine-readable material.

<table>
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<th>Title</th>
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<tr>
<td>IBM Tivoli Advanced Backup and Recovery for z/OS, V2.2 Program Directory</td>
<td>GI11-8886</td>
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<tr>
<td>IBM Tivoli Advanced Backup and Recovery for z/OS, V2.2 Quick Start Guide</td>
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The publications listed below can be downloaded from the following Web site after the planned availability date.


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<td>SC23-9731</td>
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<td>IBM Tivoli Advanced Backup and Recovery for z/OS, V2.2 Monitoring Agent User Guide</td>
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Technical information

Specified operating environment

Hardware requirements
Any machine capable of running z/OS V1.9, or later.

Software requirements
z/OS V1.9, or later.

To run the Tivoli Enterprise Monitoring Agent and its TEP interface, the following software is required:

- IBM Tivoli Monitoring Services on z/OS, V6.2 or IBM Tivoli Monitoring V6.2
- One of the following operating systems for the TEP interface:
  - Microsoft® Windows®
  - Linux®
  - UNIX®

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a readme file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only in the English language.

Planning information

Direct customer support
Direct customer support is provided by IBM Operational Support Services - SoftwareXcel. This fee service enhances your productivity by providing voice and electronic access into the IBM support organization. IBM Operational Support Services - SoftwareXcel helps answer questions pertaining to usage and suspected software defects for eligible products.

Installation and technical support is provided by Global Services. For more information call 800-IBM-4YOU (426-4968).

For technical support or assistance, contact your IBM representative or visit http://www.ibm.com/support

Packaging
Advanced Backup and Recovery for z/OS, V2.2 is distributed with:

- International Program License Agreement (Z125-3301)
- License Information document
- 3480 tape cartridge
• Publications (refer to the Publications section)

Security, auditability, and control

Advanced Backup and Recovery for z/OS, V2.2 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.

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 or to contact a Software Services sales specialist, visit http://www.ibm.com/software/sw-services/

IBM Tivoli Enhanced Value-Based Pricing

IBM Tivoli software products are priced using IBM Tivoli’s Enhanced Value-Based Pricing. The Enhanced Value-Based Pricing system is based upon the IBM Tivoli Environment-Managed Licensing Model, which uses a managed-environment approach -- whereby price is determined by what is managed rather than the number and type of product components installed.

For example, all servers monitored with IBM Tivoli’s monitoring product (IBM Tivoli Monitoring) require entitlements sufficient for those servers. Other Tivoli products may manage clients, client devices, agents, network nodes, users, or other items, and are licensed and priced accordingly.

Unlike typical systems management licensing models that require entitlements of specific software components to specific systems, the IBM Tivoli Environment-Managed Licensing Model provides the customer flexibility to deploy its IBM Tivoli software products within its environment in a manner that can address and respond to the customer's evolving architecture. That is, as the architecture of a customer's environment changes, the customer's implementation of IBM Tivoli software can be altered, as needed, without affecting the customer's license requirements (as long as the customer does not exceed its entitlements to the software).

Under Enhanced Value-Based Pricing, licensing and pricing of server-oriented applications are determined based upon the server's use in the customer's environment. Typically, such applications are licensed and priced in a manner that corresponds to each installed and activated processor of the server managed by the IBM Tivoli application to help correlate price to value while offering a simple solution.

Where a server is physically partitioned, this approach is modified. This partitioning technique is the approach used with systems that have either multiple cards or multiple frames, each of which can be configured independently. For servers capable of physical partitioning (for example, IBM System p® Scalable POWERparallel Systems® servers, Sun Ultra servers, and HP Superdome servers), an entitlement is required for each processor in the physical partition being managed by the Tivoli application. For example, assume that a server has 24 processors installed in aggregate. If this server is not partitioned, entitlements are required for all 24 processors. If, however, it is physically partitioned into three partitions, each containing eight processors, and Tivoli products were managing only one of the
three partitions, then entitlements would be required for the eight processors on the
dependent partition managed by the IBM Tivoli application.

For servers with virtual or logical partitions, entitlements are required for all installed
and activated processors on the server. For each IBM Tivoli application managing
a clustered environment, licensing is based on the cumulative number of installed
and activated processors on each server in the cluster. Where the cluster includes
physically partitioned servers, the considerations described above concerning
physically partitioned servers apply as well.

Enhanced Value-Based Pricing recognizes the convergence of RISC and UNIX, and
Microsoft Windows and Intel® technologies, in order to simplify your licensing
requirements, and to provide a smoother, more scalable model. Pricing and licensing
does not differentiate between non-System z server platforms or operating systems.
For some products, this platform neutrality extends to System z and other host
servers as well.

**IBM Tivoli Enhanced Value-Based Pricing terminology definitions**

**Enterprise**

An enterprise is a person or single entity and those subsidiaries with more than 50% ownership.

**Managed processor (charging under full capacity in the managed environment)**

Managed processor charges are based on the active processors on the machines in
the computing environment affiliated with the program rather than on the server
where the program is run. The managed processors which require PoEs are defined
in the License Information's program-unique terms.

**Notes:**

- IBM defines a physical processor in a computer as a functional unit that interprets
  and executes instructions. A physical processor consists of at least an instruction
  control unit and one or more arithmetic and logic units.
- Multicore technology allows two or more processors (commonly called cores) to be
  active on a single silicon chip. With multicore technology, IBM considers each core
to be a physical processor. For example, in a dual-core chip, there are two physical
  processors residing on the single silicon chip.
- The program may not run on some or all of the processors for which PoEs are
  required by the program's valuation method.
- In the System z IFL environment, each IFL engine is considered a single physical
  processor.
- Threading, a technique that makes a single processor seem to perform as two or
  more, does not affect the count of physical processors.
- Where blade technology is employed, each blade is considered a separate server
  and charging is based upon the total number of processors on the blades with
  which the program is affiliated.
- Not all processors require the same number of Value Unit entitlements. To
determine the number of Value Unit entitlements required, refer to the processor
  Value Unit conversion table on the Passport Advantage® Web site
  
  http://www.ibm.com/software/passportadvantage

**Millions of Service Units (MSUs)**

MSU is defined as millions of CPU service units per hour, which is the measure of
capacity used to describe the computing power of the hardware processors on which
S/390® or System z software runs. Processor MSU values are determined by the
hardware vendor, IBM, or Software Compatible Vendors (SCVs).
Processor (per processor charging under full capacity)

In full capacity charging, PoEs must be acquired for all activated processors (available for use) that are on the server where the program or a component of the program is run.

Notes:

- IBM defines a physical processor in a computer as a functional unit that interprets and executes instructions. A physical processor consists of at least an instruction control unit and one or more arithmetic and logic units.
- Multicore technology allows two or more processors (commonly called cores) to be active on a single silicon chip. With multicore technology, IBM considers each core to be a physical processor. For example, in a dual-core chip, there are two physical processors residing on the single silicon chip.
- In the System z IFL environment, each IFL engine is considered a single physical processor.
- Threading, a technique that makes a single processor seem to perform as two or more, does not affect the count of physical processors.
- Where blade technology is employed, each blade is considered a separate server and charging is based upon the total number of processors on the blade on which the program is run.
- When a server is shipped with six processors, but two of them are inactive, four processors are active for the customer.
- Not all processors require the same number of Value Unit entitlements. To determine the number of Value Unit entitlements required, refer to the processor value unit conversion table on the Passport Advantage Web site http://www.ibm.com/software/passportadvantage

Server

A server is a computer system that executes requested procedures, commands, or applications to one or more user or client devices over a network. A PoE must be obtained for each server on which the program or a component of the program is run or for each server managed by the program. Where blade technology is employed, each blade is considered a separate server.

Standby or backup systems

For programs running or resident on backup machines, IBM defines three types of situations: cold, warm, and hot. In cold and warm situations, a separate entitlement for the copy on the backup machine is normally not required and typically no additional charge applies. In a hot backup situation, the customer needs to acquire other license or entitlements sufficient for that server. All programs running in backup mode must be solely under the customer's control, even if running at another enterprise's location.

As a practice, the following are definitions and allowable actions concerning the copy of the program used for backup purposes.

**Cold:** A copy of the program may reside, for backup purposes, on a machine as long as the program is not started. There is no additional charge for this copy.

**Warm:** A copy of the program may reside for backup purposes on a machine and is started, but is idling, and is not doing any work of any kind. There is no additional charge for this copy.

**Hot:** A copy of the program may reside for backup purposes on a machine, is started, and is doing work. The customer must acquire a license or entitlements for this copy and there will generally be an additional charge.

Doing work includes, for example, production, development, program maintenance, and testing. It also could include other activities such as mirroring of transactions, updating of files, synchronization of programs, data, or other resources (for
example, active linking with another machine, program, database or other resource, and so on), or any activity or configurations that would allow an active hot switch or other synchronized switch over between programs, databases, or other resources to occur.

In the case of a program or system configuration that is designed to support a high availability environment by using various techniques (for example, duplexing, mirroring of files, or transactions, maintaining a heartbeat, active linking with another machine, program, database, or other resource), the program is considered to be doing work in the hot situation and a license or entitlement must be purchased.

Value Units

A Value Unit is a pricing charge metric for program license entitlements, which is based upon the quantity of a specific designated measurement used for a given program. Each program has a designated measurement. The most commonly used designated measurements are processor cores and MSUs. However, for select programs, there are other designated measurements such as servers, users, client devices, and messages. The number of Value Unit entitlements required for your specific implementation of the given program must be obtained from a conversion table associated with the program. You must obtain a PoE for the appropriate number of Value Unit entitlements for your implementation. The Value Unit entitlements of a given program cannot be exchanged, interchanged, or aggregated with Value Unit entitlements of another program. Whenever the designated measurement is a processor core, not all processors require the same number of Value Unit entitlements. To determine the number of Value Unit entitlements required, refer to the processor value unit conversion table on the Passport Advantage Web site

http://www.ibm.com/software/passportadvantage

Product and licensing Web Sites

A complete list of IBM Tivoli products is available at

http://www.ibm.com/software/tivoli

IBM Tivoli product licensing documents are available at


Pricing example

The following pricing example applies to Advanced Backup and Recovery for z/OS, V2.2.

System z server = one 1,500 MSU System z server

The product in this example employs Value Unit slope Value Unit Exhibit 007 (VUE007). The scales below are used to calculate the equivalent number of Value Units for a specified number of MSUs.

In the example below, if the customer has installed 1,500 MSUs, the applicable number of Value Units is:

<table>
<thead>
<tr>
<th>MSUs</th>
<th>Value Units / MSU</th>
<th>Value Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>3</td>
<td>3.00</td>
</tr>
<tr>
<td>Tier A</td>
<td>42</td>
<td>18.90</td>
</tr>
<tr>
<td>Tier B</td>
<td>130</td>
<td>46.80</td>
</tr>
<tr>
<td>Tier C</td>
<td>140</td>
<td>37.80</td>
</tr>
<tr>
<td>Tier D</td>
<td>1,185</td>
<td>237.00</td>
</tr>
<tr>
<td>Total</td>
<td>1,500</td>
<td>343.50</td>
</tr>
</tbody>
</table>

When calculating the total number of Value Units, the sum is rounded up to the next integer. In this example, the customer needs to license 344 Value Units.
Value Units for non MSU-based System z processors:

<table>
<thead>
<tr>
<th>System</th>
<th>Value Units / System</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP3000 H30</td>
<td>6</td>
</tr>
<tr>
<td>MP3000 H50</td>
<td>8</td>
</tr>
<tr>
<td>MP3000 H70</td>
<td>12</td>
</tr>
<tr>
<td>ESL Models</td>
<td>2</td>
</tr>
</tbody>
</table>

Value Units for IBM 9672 processors are based upon the full capacity of these systems. This is applicable to all System z systems measured on MSU capacity. Information on MSU capacities can be found in the IBM System z Machines Exhibit, Z125-3901.

**Ordering information**

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

<table>
<thead>
<tr>
<th>Program number</th>
<th>Program name</th>
<th>Value Unit exhibit</th>
</tr>
</thead>
<tbody>
<tr>
<td>5698-B17</td>
<td>IBM Tivoli Advanced Backup and Recovery for z/OS, V2.2</td>
<td>VUE007</td>
</tr>
</tbody>
</table>

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

**Value Unit exhibit VUE007**

<table>
<thead>
<tr>
<th>MSUs minimum</th>
<th>MSUs maximum</th>
<th>Value Units/MSU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Tier A</td>
<td>4</td>
<td>45</td>
</tr>
<tr>
<td>Tier B</td>
<td>46</td>
<td>175</td>
</tr>
<tr>
<td>Tier C</td>
<td>176</td>
<td>315</td>
</tr>
<tr>
<td>Tier D</td>
<td>316</td>
<td>+</td>
</tr>
</tbody>
</table>

Value Units for mainframes without MSU ratings:

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Value Units/machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP3000 H30</td>
<td>6</td>
</tr>
<tr>
<td>MP3000 H50</td>
<td>8</td>
</tr>
<tr>
<td>MP3000 H70</td>
<td>12</td>
</tr>
<tr>
<td>ESL models</td>
<td>2</td>
</tr>
</tbody>
</table>

**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

**Single version charging**
To elect single version charging, you must notify and identify to IBM the prior program and replacement program, and the machine the programs are operating on.

**Current licensees**
Current licensees, with support in effect, will receive instructions on how to order this update.

**New licensees**
Orders for new licenses will be accepted now.

Shipment will begin on the planned availability date.

**Basic license**

**Ordering information for 5698-xxx MSU-based System z offerings:**

<table>
<thead>
<tr>
<th>Translation from MSUs to Value Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MSUs</strong></td>
</tr>
<tr>
<td>Base</td>
</tr>
<tr>
<td>Tier A</td>
</tr>
<tr>
<td>Tier B</td>
</tr>
<tr>
<td>Tier C</td>
</tr>
<tr>
<td>Tier D</td>
</tr>
</tbody>
</table>

To order, specify the program product number and the appropriate license or charge option. Also, specify the desired distribution medium. To suppress shipment of media, select the license-only option in CFSW.

**Program name:** IBM Tivoli Advanced Backup and Recovery for z/OS, V2.2
**Program PID:** 5698-B17

<table>
<thead>
<tr>
<th>Entitlement identifier</th>
<th>Description</th>
<th>License option/ Pricing metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>S01523J</td>
<td>IBM Tivoli Advanced Backup and Recovery for z/OS</td>
<td>Basic OTC, per Value Unit Basic OTC, per MSU-day TUC</td>
</tr>
</tbody>
</table>

**Orderable supply ID** | Language | Distribution medium |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S01544W</td>
<td>English</td>
<td>3480 tape cartridge</td>
</tr>
</tbody>
</table>

**Subscription and Support PID:** 5698-R17

<table>
<thead>
<tr>
<th>Entitlement identifier</th>
<th>Description</th>
<th>License option/ Pricing metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>S0154V1</td>
<td>IBM Tivoli Advanced Backup and Recovery z/OS S&amp;S</td>
<td>Basic ASC, per Value Unit SW S&amp;S No charge, decline SW S&amp;S Per MSU SW S&amp;S registration</td>
</tr>
</tbody>
</table>

**Orderable supply ID** | Language | Distribution medium |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S0154J9</td>
<td>English</td>
<td>Hardcopy publication</td>
</tr>
</tbody>
</table>
Subscription and Support

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

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

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

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

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

Customized Offerings

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

CBPDO and ServerPac are offered for Internet delivery, where ShopzSeries product ordering is available. Internet delivery of ServerPac may help improve automation and software delivery time. For more details on Internet 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. Selecting 3592 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**

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.

**Agreement for Acquisition of Software Maintenance**

The following agreement applies for Software Subscription and Support (Software Maintenance) and does not require customer 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 System z Operational Support Services - SoftwareXcel is an option if you desire added services.

**License Information form number**

GI11-8137

The program’s License Information will be available for review on the IBM Software License Agreement Web site


**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, consult the IBM Software Support Handbook found at

http://www.ibm.com/support/handbook

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

**Program support**

Support for the program product will be available for a minimum of three years from the general availability date with a fee-based option to extend support for up to two additional years. Enhanced support, called Subscription and Support, includes telephone assistance, 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.

Volume orders (IVO)
No

Passport Advantage applies
No

Usage restriction
Yes. Usage is limited to the quantity of Value Units licensed.

For additional information, refer to the License Information document that is available on the IBM Software License Agreement Web site


Software Subscription and Support (Software Maintenance)
Software Subscription and Support (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 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, visit

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

IBM Operational Support Services - SoftwareXcel
Yes

System i Software Maintenance applies
No

Variable charges apply
No

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

<table>
<thead>
<tr>
<th>Program number</th>
<th>Program name</th>
<th>Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>5698-B17</td>
<td>IBM Tivoli Advanced Backup and Recovery for z/OS</td>
<td>z/OS based</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Full-capacity mainframes

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

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


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.

Execution based: The required capacity of a System z IPLA sub-capacity program with these terms equals the capacity of the LPARs where the System z IPLA program executes.

z/OS based: The required license capacity of a System z IPLA program with these terms equals the license capacity of z/OS on the machines where the System z IPLA program executes.

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.

Full machine based: The required license capacity of a System z IPLA program with full machine based terms equals the MSU-rated capacity of the machines where the System z IPLA program executes.

For more information on mainframe MSU-rated capacities, refer to The IBM System z Machines Exhibit, Z125-3901, or visit the Mainframes section of the System z Exhibits Web site [http://ibm.com/zseries/library/swpriceinfo/](http://ibm.com/zseries/library/swpriceinfo/)

For more information on sub-capacity System z IPLA terms and conditions, refer to Software Announcement [204-184](http://ibm.com/zseries/library/swpriceinfo/), dated August 10, 2004.
For 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 the environment the System z IPLA program executes.

An environment is defined as either a single or stand-alone machine or a qualified Parallel Sysplex®. You may have one or more different environments across the enterprise. To determine the required license capacity for each 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 Hardware Announcement 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 operating systems
- Any licenses for the OS/390 operating system must be discontinued
- All instances of the z/OS operating systems must be running in z/Architecture® (64-bit) mode

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

**Sub-capacity utilization determination**

Sub-capacity utilization is determined based on the utilization of an eligible operating system and machine (for example, z/OS running in z/Architecture (64 bit) mode on a System z (or equivalent) server).
**On/Off Capacity on Demand (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 Customer Initiated Upgrade and IBM eServer™ On/Off Capacity on Demand - Software* (Z125-6611) must be signed prior to use.

**IBM Electronic Services**

IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a Web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, visit

http://www.ibm.com/support/electronic

**Prices**

For additional information and current prices, contact your local IBM representative.

Information on charges is available at

http://www.ibm.com/support

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Order now

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Fax: 800-2IBM-FAX (242-6329)
For IBM representative: callserv@ca.ibm.com
For IBM Business Partner: pwswna@us.ibm.com
Mail: IBM Teleweb Customer Support
      ibm.com® Sales Execution Center, Americas North
      3500 Steeles Ave. East, Tower 3/4
      Markham, Ontario
      L3R 2Z1

Reference: LE001

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Note: Shipments will begin after the planned availability date.

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