



IBM DB2 Tools enhancements for your DB2 for z/OS environments

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At a glance

IBM^(R) DB2^(R) Tools deliver enhancements in the following areas:

- Administration management:
 - IBM DB2 Administration Tool for z/OS^(R), V11.2 (5655-DAT)
 - IBM DB2 Administration Toolkit for z/OS the SAP Edition, V3.2 (5697-DAR)
 - IBM DB2 Object Comparison Tool for z/OS, V11.2 (5655-DOC)
- Recovery management:
 - IBM DB2 Fast Copy Solution Pack for z/OS, V1.2 (5697-DFM)
 - IBM DB2 Recovery Expert for z/OS, V3.2 (5655-W78)
- Utilities management:
 - IBM DB2 Cloning Tool for z/OS, V3.2 (5655-N15)

For ordering, contact your IBM representative or an IBM Business Partner. For more information, contact the Americas Call Centers at: 800-IBM-CALL (426-2255).

Reference: LE001

Overview

IBM DB2 Administration Tool for z/OS, V11.2 (5655-DAT) allows you to manage the tasks that keep DB2 for z/OS performing at peak levels. It provides a comprehensive set of functions that helps your DB2 for z/OS personnel manage their DB2 for z/OS environments efficiently and effectively, including:

- Providing in-depth catalog navigation by:
 - Displaying and interpreting objects in the DB2 for z/OS catalog
 - Executing dynamic SQL statements
- Integrating with other DB2 Tools to simplify the task process flow:
 - Table editing
 - SQL cost analysis
- Adding summary reports to provide an overview of complex data changes and migrations

Key new features of DB2 Administration Tool for z/OS, V11.2 include:

- Optimizing use of REORG in dealing with the complex ALTERs
- Ability to use IBM DB2 Analytics Accelerator for z/OS features in batch
- Ability to use authorization switching between multiple IDs
- Ability to use authorization switching on GRANT, REVOKE, and DROP VIEW statements by using panels
- Enable authorization switching in the change management analyze process
- Restart enhancements in the batch restart program ADBTEP2 to allow user-controlled restart points in a Work Statement List (WSL)
- Address navigational consistency issues for improved usability
- Reduce the number of job steps within IBM Tools Customizer for z/OS to simplify deployment across multiple DB2 for z/OS subsystems
- Ability to customize the appearance of list panels

IBM DB2 Cloning Tool for z/OS, V3.2 (5655-N15) provides usability improvements and streamlined processes that give you more control over your cloning operations and deliver a superior tool for moving enterprise data across the IT landscape. This release offers the following enhancements:

- Enables the cloning of an entire DB2 for z/OS subsystem by data sets instead of volume copies
- Reduces manual intervention by automatically handling additional target processes, such as rebuilding indexes after data masking or log apply processes
- Offers more choices for consistent data sources by adding the capability to clone from image copies or from system-level backups that are stored on tape
- Increases DB2 for z/OS migration confidence through better support for DB2 for z/OS, V11 object types and processes
- Implements parallelism to improve throughput when cloning multiple data set objects by processing each extent of a large object in a separate task
- Offers increased flexibility to accommodate additional utility operations such as CHECK, REBUILD, REORG, QUIESCE, and RUNSTATS in order to streamline the cloning process

IBM DB2 Object Comparison Tool for z/OS, V11.2 (5655-DOC) helps maximize system availability by keeping production and testing database environments running in parallel. It can:

- Simplify the process of comparing objects and their dependents from different sources
- Synchronize sources
- Consistently keep production databases in step with those for testing and development

Key new features of DB2 Object Comparison Tool for z/OS, V11.2 include:

- Optimizing use of REORG when dealing with the complex ALTERs
- Improved reports that provide hierarchical relationship information within a database
- Ability to use authorization switching between multiple IDs
- Ability to enable authorization switching in object compare and the change management analyze process

IBM DB2 Recovery Expert for z/OS, V3.2 (5655-W78) includes many new features that enhance an already powerful, cost-effective recovery solution. These new features focus on making it even easier to protect and recover mission-critical data when time is of the essence:

- Extended the recovery capabilities to back out errant transactions
- Facilitated the simulation of recovery by providing the capability to recover to an alternate object

- Simplified the recovery process for applications by defining prioritizations for applications, which allows for better workload balancing and an alternate method of generating recovery operations
- Enhanced system recovery by allowing users to create a Combined System Level Backup (CSLB) that includes one or more systems from one or more Database Management Systems (DBMSs)

IBM DB2 Administration Toolkit for z/OS the SAP Edition, V3.2 (5697-DAR) includes tools that work together to form a function-rich object management solution that can help you to manage your DB2 for z/OS databases within your SAP environment. DB2 Administration Toolkit for z/OS the SAP Edition can provide quality assurance in an SAP ERP environment by comparing objects in an SAP ERP database before they are transported from test to production. DB2 Administration Toolkit for z/OS the SAP Edition, V3.2 includes new releases of:

- DB2 Administration Tool for z/OS, V11.2 (5655-DAT)
- DB2 Object Comparison Tool for z/OS, V11.2 (5655-DOC)

IBM DB2 Fast Copy Solution Pack for z/OS, V1.2 (5697-DFM) can help you to quickly and efficiently back up, clone, and recover DB2 subsystems or DB2 objects on an enterprise scale. It offers tools to help ensure highly available and fully recoverable DB2 environments. DB2 Fast Copy Solution Pack for z/OS can help modernize your data movement techniques while reducing system costs and accelerating your time-to-market of key DB2 applications such as SAP. DB2 Fast Copy Solution Pack for z/OS, V1.2 includes new releases of:

- DB2 Cloning Tool for z/OS, V3.2 (5655-N15)
- DB2 Recovery Expert for z/OS, V3.2 (5655-W78)

Trade-up options for DB2 Fast Copy Solution Pack for z/OS, V1.2 are available. The following list includes the eligible products, or eligible combinations of products, for each trade-up option. Contact your IBM representative for all available trade-ups:

- DB2 Cloning Tool for z/OS, V3 (5655-N15)
- DB2 Recovery Expert for z/OS, V3 (5655-W78)
- DB2 Cloning Tool for z/OS, V3 (5655-N15) and DB2 Recovery Expert for z/OS, V3 (5655-W78)

Key prerequisites

IBM DB2 Tools operate on any IBM z Systems™ hardware configuration that supports the required software. Refer to the [Hardware requirements](#) and [Software requirements](#) sections for details.

Planned availability date

- August 28, 2015
 - IBM DB2 Administration Tool for z/OS, V11.2
 - IBM DB2 Cloning Tool for z/OS, V3.2
 - IBM DB2 Object Comparison Tool for z/OS, V11.2
 - IBM DB2 Recovery Expert for z/OS, V3.2
- September 4, 2015
 - IBM DB2 Administration Toolkit for z/OS the SAP Edition, V3.2
 - IBM DB2 Fast Copy Solution Pack for z/OS, V1.2

Description

IBM DB2 Administration Tool for z/OS, V11.2 (5655-DAT) enhancements include:

- Optimizing use of REORG in dealing with the complex ALTERs.
 - Considering the complexities of DB2 pending changes, the order of ALTER statements and the sequence of REORG statements in relation to the ALTER statements is being modified to help attain the maximum system availability.
- IBM DB2 Analytics Accelerator for z/OS enhancements.
 - Enhancements to DB2 Analytics Accelerator for z/OS support include the ability to display keys and related information along with the option to alter them; support for the batch execution of some of the key accelerator functions, such as LOAD, ADD, ENABLE, or DISABLE of DB2 tables; the ability to display trace profiles of an accelerator and to enable configuration and management of trace details of an accelerator; the ability to display the list of active accelerator tasks; and the ability to cancel a task.
- Authorization switching enhancements.
 - Multiple enhancements have been made to enable authorization switching as a retry mechanism, based on the ownership of the object; to enable authorization switching for a work statement list (WSL) that was not originally generated with authorization switching capability (for example, GRANT, REVOKE, DROP View/Alias panels); and to enable authorization switching in the change management analyze process.
- Restart enhancements in the batch restart program ADBTEP2.
 - DB2 Administration Tool for z/OS now provides the ability to restart a WSL from a user-controlled restart point rather than a system-determined restart point.
- Improve usability by addressing navigational consistency issues.
 - When using table display panels to accomplish complex operations, users will now find more navigational consistency with the following rules in place:
 - PF3: Returns to the calling panel.
 - ENTER: Processes the primary commands, line commands, and the changes to data entry fields.
 - NEXT: The primary command to move the user forward.
- Reducing the number of job steps within Tools Customizer to simplify deployment across multiple DB2 subsystems.
 - This enhancement makes it easier to manage multiple DB2 subsystems because users can selectively choose specific setup options such as Change Management, Check Point, and so on, thereby minimizing the number of jobs generated.
- The ability to customize the appearance of list panels.
 - Panels that have many line commands and primary commands take away real estate that would otherwise be used for displaying data that the users are interested in. With this enhancement, customization options are provided so that line commands or primary commands can be hidden as needed. Users can also choose whether to display a menu bar.
- Delay GRANT statements until all related objects are created and utilities are complete.
 - Prior to this change, when a table was added or dropped and re-created, the table GRANTs were issued immediately. This enhancement allows the table to be populated even though other objects, such as unique indexes, referential integrity definitions, and the reload of original rows, have not been completed. This can cause data loss and subsequent object creation to fail.
- Ability to drop multiple table spaces.

- DROP as a primary command is available on the list of table space panel (ADB21S), allowing the user to drop all the table spaces listed on the panel.
- Enable the user to change GEN options with the migrate function.
 - This function provides the user the flexibility and convenience to quickly navigate, view, or change GEN settings without having to exit out of MIG to invoke the GEN line command. This function is available on panels ADB21D 'Databases', ADB21S 'Table Spaces', and ADB21T 'Tables, Views, and Aliases'.
- Change Management and DET (detailed report on a package) enabled to show formatted statements.
 - The change management registration process will preserve the formatting of the change statements. This will help the users to view or edit the statements easily. The DET function will show more formatted statements.
- Display confirmation panel when exiting ALT panels.
 - ALT, which allows the user to perform complex alters on DB2 objects, can flow through multiple panels before the immediate task is complete. This enhancement will bring up confirmation panels when the user presses PF3. This will avoid accidentally losing the work in progress.
- Handle alters related to rotated partitions.
 - For table-based partitioning, DB2 maintains a physical partition number and a logical partition number. When the table is newly created, both physical and logical partition numbers are the same. When partitions are rotated, logical and physical partitions are no longer the same. The purpose of this enhancement is to allow the users to edit the limit key based on the logical partition number and, at the time of applying the change to the DB2 catalog, translate that into the physical partition number.
- Variable-block spanned (VBS) support during UNLOAD utility.
 - Support for the UNLOAD utility option SPANNED has been added when the skip conversion process is used. UNLOAD SPANNED improves the performance of unloading tables with LOB and XML columns because these columns now can be unloaded to the unload data set and no longer require the use of LOB files, which is an I/O-intensive process.
- REORG enhancements.
 - Prior to DB2 10 for z/OS, when an index's buffer pool was altered, this index was placed into REBUILD-pending state. In DB2 10 and later, this index is placed in an advisory REORG-pending state. A REORG INDEX statement will now be generated to resolve the pending state.
- Support for additional options on DB2 LOAD utility.
 - The DB2 LOAD utility options ERRDDN, DISCARDN, and DISCARDS are now supported by ALT, Object Compare, Change Management (CM), and Migrate (MIG) on panel ADB2UTC 'Specify Utility Options - LOAD'.
 - The DB2 LOAD utility options LOG, RESUME, and REPLACE are now supported by MIG on panel ADB2UTC 'Specify Utility Options - LOAD'.
- Utility parallelism control as a default.
 - IBM best practices indicate parallelism should be used where possible. This enhancement will provide a way for the installer to have utilities generate keywords to run utilities in parallel. The default degree of parallelism and the option to specify a parallelism cap can be set. These values will also be broken up by utility (LOAD, REORG, and so on).
- Enable ORDER BY to be used by SQL before building ISPF-tables.
 - When DB2 Administration Tool for z/OS issues SQL statements, it does not use the ORDER BY clause, due to performance reasons. This feature will help set the ordering where the user can get the tool to use ORDER BY in the SQL statements leading to the ISPF-tables that DB2 Administration Tool for z/OS is presenting.
- CM batch to provide the ability to specify user-defined templates as a dataset.
 - A new way to specify user-defined TEMPLATES for DB2 utilities using USRTEMPL dataset is introduced. This new format will allow the CM Batch interface style parameter variables and TEMPLATE formats.

- Ability to analyze and run an empty change.
 - The Change Management function is enhanced to add the ability to register, analyze, run, and recover an empty change.
- User control on datasets in CM Batch.
 - CM Batch is enhanced to allow users to control data set attributes for the IFF, CHG, DELTA, DDL, SRCVF, TGTVF, and MTC file.
 - CM Batch is enhanced to add template support for RECOVERYDDN1, RECOVERYDDN2, MAPDDN, PUNCHDDN, and UNLDDN.
- Remove restrictions on WSL export PDS name and member names.
 - Allow data set names to contain the change name or change owner in the PDS or as member name.
- The ability to alter the specifications of a registered change.
 - This enhancement will add the ability to replace an existing change.
- Export a change using CM Batch.
 - Using Change Management, the user can specify a new OPTIONS primary command on panel ADBPC15 'Export Changes', and new panel ADBPC150 'Export Options' will allow the user to choose whether to export a change in batch or not. The ability to provide masking details is also added.
- User's choice for the Apply, Prereq, Supersede, or Cancel commands will be retained within the same session when multiple changes are registered, and across sessions if the ISPF profile dataset persists.
- Allow the user to analyze a change only when the status is DEFINED.
 - The CM Batch interface introduced additional parameter to the control analyze process: Action_analyze_change='C'. This will enable the user to skip the analyze process for a change if the change is already in ANALYZED state. Prior to this enhancement, when Action_analyze_change='Y' or Blank (default), the change would be analyzed if the change was DEFINED or ANALYZED status.
- Ability to delete completed changes.
 - This will enable a change in COMPLETE status to be deleted. Users who want to restrict deleting such changes can still achieve this by modifying a Change Management view object.
- CM Batch to allow canceling and deleting changes.
 - CM Batch will allow canceling and deleting changes. The view object can be modified to restrict the users from deleting a change.
- Masking on export of a change.
 - This will enable the user to use masking during export of change. The change statements written into the output data set will be masked.
- Allow CM Batch to delete or replace an existing mask.
 - This will enable CM Batch to manage the masks instead of navigating through the panels.
- The ability to exclude column authorizations.
 - Add support for column authorizations on the CM Exclude Objects panel (ADBPC7L).
- The ability to control the return code of the batch restart program ADBTEP2.
 - This enhancement allows the user to set a threshold for which a return code (RC) from a DB2 utility will terminate the batch restart program ADBTEP2 process. Prior to this, any no-warning RC would terminate the batch restart program ADBTEP2 (that is, RC > 4).
- Masking enhancements.
 - Users now have the ability to overwrite attributes FREEPAGE, PCTFREE, LOCKMAX, and ERASE with masking for table space and index objects. In addition, the ability to override attributes TRACKMOD and DATA CAPTURE using the generate (GEN), work statement list (WSL), multi-target changes, export changes, and change management (CM) import functions with masking for objects table spaces and tables is added.

- Masking is enhanced to support wildcarding in rename-masks. This will allow multiple objects to be renamed at the same time. Support is added for databases, table spaces, tables, indexes, and global variables.
- Enhance the SQ option, allowing dynamic EXPLAIN for accessing plan table.
 - When using the 'SQ - SQL in package' line command from panel ADB21K 'Packages', the following commands are now supported on panel 'Extracted SQL' (ADB21KSE):
 - EXPLAIN: Dynamically explain a selected SQL statement.
 - PLANTAB: Display explain rows for the selected SQL statement.
- Allow iterative input from REXX in batch restart program ADBTEP2.
 - This enhancement allows for a user REXX routine to provide input for ADBTEP2 to process.
- ALT enhancements.
 - Unlike other objects, new indexes and foreign keys can be created within ALT with the CX and CFK line commands (against a table) on the ADB27CA hub; the new objects are added to the hub after creation. However, alter (A) line command was not allowed against these new objects. This enhancement will add the ability to alter these new objects.

IBM DB2 Cloning Tool for z/OS, V3.2 (5655-N15) can make it easy to clone a DB2 subsystem or DB2 table spaces. DB2 Cloning Tool for z/OS can also be used to clone non-DB2 volumes. Traditional cloning and refresh methods are time consuming, use large amounts of host processing resources, and when copying DB2 systems, require a separate LPAR to house the copy. Today's storage-based fast replication technologies provide services to copy DB2 data without using host CPU or I/O resources. DB2 Cloning Tool for z/OS leverages these technologies to make the cloning process faster and to help reduce the costs of cloning and refreshing data.

DB2 subsystem cloning: DB2 Cloning Tool for z/OS integrates storage system volume fast-replication and automation to clone entire DB2 subsystems within the same or a shared LPAR. DB2 Cloning Tool for z/OS renames the data sets, updates the volume identifiers, and manages the DB2 metadata to allow the data to be used by a cloned DB2 subsystem quickly.

DB2 table space refresh: DB2 Cloning Tool for z/OS integrates storage system data set fast-replication and automation to refresh table and index spaces within the same or to a different DB2 instance. DB2 Cloning Tool for z/OS copies the data quickly and automatically translates the object IDs that differ between source and target subsystems.

Fast replication support: The fast replication copy services outlined below can be used to create the volume copies used for DB2 system clones or to create the data set copies used for table space and index space refreshes. A storage blade represents fast replication copy services invoked directly by DB2 Cloning Tool for z/OS. DB2 Cloning Tool for z/OS executes the DFSMSdss blade to issue IBM FlashCopy^(R) or STK SnapShot copy commands either by volume or by data set. When cloning DB2 systems or table spaces that reside on EMC DASD, DB2 Cloning Tool uses the EMC API to invoke TimeFinder/Clone to copy the data either by volume or by data set. When cloning DB2 subsystems that reside on EMC DASD and use TimeFinder/Mirror, or that reside on Hitachi Storage Systems, an appropriate replication process is performed before DB2 Cloning Tool cloning automation is invoked and a list of copied storage volumes are passed to DB2 Cloning Tool for use in later processing steps.

The following storage blades are invoked by DB2 Cloning Tool for z/OS:

IBM storage blades: IBM DFSMSdss blade

- ADRDSSU utility invoked
- Fast replication (preferred)
- By volume or data set

- FlashCopy V2 (IBM, EMC, HDS)
- SnapShot (SDK, Ramac)

EMC storage blades: EMC TimeFinder

- TimeFinder/Clone
- TimeFinder Consistency Groups
- TimeFinder Dataset Snap facility

DB2 Cloning Tool for z/OS, V3.2:

- Provides cloning and refresh solutions that automate and integrate sophisticated storage processor capabilities to:
 - Copy DB2 subsystems to a consistent copy of production data without sacrificing availability
 - Reduce CPU and I/O costs by using the storage processor to copy the data instead of z/OS
 - Execute fast replication in a safer and more transparent manner on behalf of the DBA
- Copies can be used to:
 - Offload business processes from production to other environments. The offloaded processes can be run in parallel without affecting production DB2 systems and applications, helping to maintain high availability.
 - Stage data warehouse loads.
 - Facilitate integration to a new version of DB2 in a short time.
 - Create or refresh test or quality assurance environments.
 - Direct users to read-only clones to reduce production performance impact.
 - Troubleshoot production problems from the clone.
 - Clone from a DB2 Recovery Expert for z/OS or DB2 backup system level backup.
 - Potentially reduce the footprint of a system clone by utilizing data set copies rather than volume copies.

DB2 Cloning Tool for z/OS, V3.2 includes the following enhancements:

- Improved diagnostics capabilities by providing a way to generate a maintenance report.
- Table space cloning enhancements include:
 - Improved usability and streamlined processes
 - Reduces manual intervention by automatically handling additional target processes, such as rebuilding indexes after data masking and log apply processes
 - Improves scalability by applying DB2 logs to objects that reside on separate LPARs
 - Allows more choices for consistent data sources, by adding the capability to clone from image copies
 - Facilitates the broad spectrum of DB2 object types through expanded object support such as system-period temporal table's history table
 - Integration; allows DB2 migration confidence through better support for DB2 Version 11 object types and processes, including:
 - Extended RBA support to accommodate shops that need to use 10-byte RBA/LRSN fields.
 - Improved flexibility by supporting new RESTORE SYSTEM enhancements.
 - Maintain environmental performance gains by supporting NULL index keys.
 - Facilitate the resolution of inconsistencies between source and target by utilizing new REPAIR utility enhancements.

- Support conversions by generating a REORG utility to convert from basic to extended RBA/LRSN.
- Performance
 - Improved throughput for multiple data set objects by processing each extent of a large object in a separate task
 - Increased flexibility to accommodate additional utility operations such as CHECK, REBUILD, REORG, QUIESCE, and RUNSTATS in order to streamline the cloning process
 - Improved throughput for customers without fast replication to clone faster with only one pass of the data
 - Reduced resources by improving memory consumption of the ISPF UI
- Competitive advantage
 - Facilitates the transition to DB2 Cloning Tool for customers with competitive tools by providing the ability to use image copies as the source for data migration

Subsystem cloning enhancements include:

- Usability
 - Potentially reduces the footprint of a subsystem clone by allowing the replication of an entire DB2 subsystem by data set rather than by volume copies
 - Provides more cloning sources by allowing replication using system level backup dump tapes from the DB2 BACKUP SYSTEM utility or from DB2 Recovery Expert
 - Improves implementation of the product in production by providing the ability to better manage the started tasks
 - Increases awareness of the product's environment by informing the customer when DB2 fails to properly start
- SAP-related customer enhancements
 - Streamline the system cloning process by enhancing BCSCLEAN to remove orphaned target catalog entries and other data sets by data set name or mask.

IBM DB2 Object Comparison Tool for z/OS, V11.2 (5655-DOC) enhancements include:

- Optimizing the use of REORG in dealing with the complex ALTERs.
 - Considering the complexities of DB2 pending changes, the order of ALTER statements and the sequence of REORG statements in relation to the ALTER statements is being modified to help attain the maximum system availability.
- Improved reports.
 - Reports can be provided based on database hierarchy (for example, database, table spaces within the database, and so on) before moving on to the next database.
- Authorization switching enhancements.
 - Multiple enhancements have been made to enable authorization switching as a retry mechanism, based on the ownership of the object; to enable authorization switching for a work statement list (WSL) that was not originally generated with authorization switching capability (for example, GRANT, REVOKE, DROP View/Alias panels); and to enable authorization switching in the change management analyze process.
- The ability to customize the appearance of list panels.
 - Panels that have many line commands and primary commands take away real estate that would otherwise be used for displaying data that the customer is interested in. With this enhancement, customization options are provided so that line commands and primary commands can be hidden as needed. Users can also choose whether to display a menu bar.
- Delay GRANT statements until all related objects are created and utilities are complete.

- Prior to this change, when a table was added or dropped and re-created, the table GRANTS were issued immediately. This enhancement allows the table to be populated even though other objects, such as unique indexes, referential integrity definitions, and the reload of original rows, have not been completed. This can cause data loss and subsequent object creation to fail.
- Handle alters related to rotated partitions.
 - For table-based partitioning, DB2 maintains a physical partition number and a logical partition number. When the table is newly created, both the physical and logical partition numbers are the same. When partitions are rotated, the logical and physical partitions are no longer the same. The purpose of this enhancement is to allow the users to edit the limit key based on the logical partition number and, at the time of applying the change to the DB2 catalog, translate that into the physical partition number.
- Variable-block spanned (VBS) support during Unload Utility.
 - Support for the UNLOAD Utility option SPANNED has been added when the skip conversion process is used.
 - UNLOAD SPANNED improves the performance of unloading tables with LOB and XML columns because these columns now can be unloaded to the unload data set and no longer require the use of LOB files, which is an I/O-intensive process.
- REORG enhancements.
 - Prior to DB2 10 for z/OS, when an index's buffer pool was altered, this index was placed into REBUILD-pending state. In DB2 10 and later, this index is placed in an Advisory REORG-pending state. A REORG INDEX statement will now be generated to resolve the pending state.
- Support for additional options on DB2 LOAD Utility.
 - The DB2 LOAD utility options ERRDDN, DISCARDN, and DISCARDS are now supported by ALT, Object Compare, Change Management (CM), and Migrate (MIG) on panel ADB2UTC 'Specify Utility Options - LOAD'.
 - The DB2 LOAD utility options LOG, RESUME, and REPLACE are now supported by Migrate (MIG) on panel ADB2UTC 'Specify Utility Options - LOAD'.
- Masking enhancements.
 - Users now have the ability to overwrite attributes FREEPAGE, PCTFREE, LOCKMAX, and ERASE with masking for table space and index objects.
 - In addition, the ability to override attributes TRACKMOD and DATA CAPTURE using the Generate (GEN), work statement list (WSL), Multi-target changes, Export changes, and Change Management (CM) Import functions with masking for objects table spaces and tables is added.
 - Masking is enhanced to support wildcarding in rename-masks. This will allow multiple objects to be renamed at the same time. Support is added for databases, table spaces, tables, indexes, and global variables.

IBM DB2 Recovery Expert for z/OS, V3.2 (5655-W78) provides a simple, self-managing recovery solution that facilitates database recovery operations with minimal disruption. DB2 Recovery Expert for z/OS enables intelligent analysis of altered, incorrect, or missing database assets, including table spaces, tables, indexes, and data. It automates the process of rebuilding these assets to a specified point in time, often without taking the database or the business operations offline.

DB2 Recovery Expert for z/OS supplies a high availability solution for companies concerned with 24 x 7 operations. By taking advantage of the latest storage system replication features, DB2 Recovery Expert for z/OS can perform system-level backups quickly with little or no impact on running applications. Valuable host CPU and I/O time is saved by using the storage processor to make the copy instead of z/OS.

DB2 Recovery Expert for z/OS provides:

- Backup features that exploit sophisticated storage processor capabilities, enabling:

- High application availability while data is quickly backed up to a consistent copy of production data
- Reduction of CPU and I/O costs by using the storage processor to copy the data instead of z/OS
- Reduced database administrator time and effort while executing fast replication processing
- Automated validation at the time of backup to confirm the recovery of all objects or the complete DB2 subsystem
- Automated recovery features that can help:
 - Save valuable time when recovering entire DB2 subsystems from system backups using fast replication
 - Significantly reduce downtime and the associated costs of this downtime when recovering database objects or groups of objects to a specific point in time from fast replication backups
 - Simplify DB2 subsystem disaster recovery and restart
- An "intelligent recovery manager" that can help to significantly reduce recovery time and effort by providing the information users need to quickly decide upon the best recovery point and the best recovery method for their use. The intelligent recovery manager can help users to:
 - Easily recover dropped objects, including recovering the data to a point in time before the drop.
 - Reduce manual efforts by identifying recovery points. The recovery manager analyzes the DB2 log to find quiet times or points of consistency for a single object or a group of objects that can be used for recovery points.
 - Generate SQL-based recoveries that can roll-forward or back-out changes to individual tables or groups of objects, a recovery process that is unique among IBM DB2 recovery tools.
 - Simplify the process of recovering an object or set of objects to a prior version of an application, even if the object's DDL has changed.
 - Quickly choose the most appropriate and cost-efficient method of recovery by analyzing all recovery assets and presenting several recovery plans or methods with a relative cost for each method.

DB2 Recovery Expert for z/OS, V3.2 includes the following enhancements:

- Provides users the capability to undo a transaction or transactions based on selection criteria. Recoveries will be done in a transactionally consistent manner where all operations of a transaction are undone.
- Allows a recovery to an alternate location. Users will be able to recover to either another object on the same subsystem or to an object on a different subsystem. Using this feature, they will be able to simulate a production problem or test out a recovery solution before executing it in their production environment. To provide that stated RTO objectives have been met, users want the ability to run a true recovery, but not have it affect their sensitive environments.
- Delivers an effective way to prioritize the recovery of applications. Through the use of application profile groupings, the user can define and utilize priorities in operations such as creating image copies, analyzing quiet times, and performing application and disaster recovery.
- With a single process, customers of both IBM IMS™ Recovery Expert, V2.2 and DB2 Recovery Expert, V3.2 will be able to create a Combined System Level Backup (CSLB) that includes one or more Database Management Systems (DBMSs) and is created at a consistent point in time for all DBMSs in the CSLB. The DBMSs in the CSLB can be all of the same type (all IMS or all DB2) or mixed (one or more IMS and one or more DB2). Data consistency for volumes included in the Combined SLB is provided using storage-based consistency. The CSLB can be used for disaster recovery, local object recovery, or local subsystem restore.

IBM DB2 Administration Toolkit for z/OS the SAP Edition, V3.2 (5697-DAR) includes new releases of DB2 Administration Tool for z/OS, V11.2 (5655-DAT) and DB2 Object Comparison Tool for z/OS, V11.2 (5655-DOC).

DB2 Administration Tool for z/OS can reduce the complexity of managing and executing SAP-initiated database changes, which can enable DBAs to make faster and more accurate decisions.

DB2 Object Comparison Tool for z/OS can help identify potential risks or long-running changes and can help conduct quality assurance and promote database object integrity when objects are transported from test to production environments.

DB2 Administration Tool for z/OS, V11.2 and DB2 Object Comparison Tool for z/OS, V11.2 new features include:

- Optimization of REORG during complex ALTERs can determine the best sequencing of ALTER statements and REORGs to help maximize system and application availability.
- Improved DB2 Object Comparison Tool for z/OS reports can provide hierarchical relationship information within a database.
- Ability to display index keys for tables involved in queries processed by the Accelerator as well as the ability to alter them. Batch execution of key Accelerator functions such as LOAD, ADD, ENABLE, or DISABLE of DB2 tables has been added. There are more management capabilities such as the ability to display, configure, and manage Accelerator trace profiles. You can display the list of active Accelerator tasks and also cancel a task.
- Greater control over authorizations when switching environments. For example, you can switch authorizations when performing object comparisons or change management analyze processing.
- Ability to restart a work statement list (WSL) from a user-determined restart point, navigation consistency across panels, reduction in the number of job steps within Tools Customizer when deploying across multiple DB2 subsystems, and more.

IBM DB2 Fast Copy Solution Pack for z/OS, V1.2 (5697-DFM) provides new releases of DB2 Cloning Tool for z/OS, V3.2 (5655-N15) and DB2 Recovery Expert for z/OS, V3.2 (5655-W78).

DB2 Cloning Tool for z/OS and DB2 Recovery Expert for z/OS are storage-aware data management products that use automation to coordinate database system operations with storage-based fast-replication facilities that can simplify backup, recovery, and cloning strategies.

Refer to the product-specific sections of DB2 Cloning Tool for z/OS, V3.2 and DB2 Recovery Expert for z/OS, V3.2 for a description of the many enhancements delivered in the new releases.

Accessibility by people with disabilities

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

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

Section 508 of the US Rehabilitation Act

The products in this announcement are capable as of their date of general availability, when used in accordance with IBM's associated 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. A US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested via IBM's website at

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

Value Unit-based pricing

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

Value Unit pricing offers price benefits for you. For each z Systems IPLA program with Value Unit pricing, the quantity of that program needed to satisfy applicable IBM terms and conditions is referred to as *therequired 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 *asentitled license capacity*. If you want 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 website

<http://www.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 z Systems IPLA program you selected, refer to the [Terms and conditions](#) section.

Reference information

- Software Announcement [213-395](#), dated October 1, 2013, for IBM DB2 Administration Tool for z/OS, V11.1 and IBM DB2 Object Comparison Tool for z/OS, V11.1
- Software Announcement [214-016](#), dated February 11, 2014, for IBM DB2 Administration Toolkit for z/OS the SAP Edition, V11.1
- Software Announcement [211-384](#), dated October 11, 2011, for IBM DB2 Cloning Tool for z/OS, V3.1
- Software Announcement [212-341](#), dated October 3, 2012, for IBM DB2 Fast Copy Solution Pack for z/OS, V1.1
- Software Announcement [212-135](#), dated May 8, 2012, for IBM DB2 Recovery Expert for z/OS, V3.1

Program number

Program number	VRM	Program name
5655-DAT	11.2.0	IBM DB2 Administration Tool for z/OS
5655-N15	3.2.0	IBM DB2 Cloning Tool for z/OS
5655-DOC	11.2.0	IBM DB2 Object Comparison Tool for z/OS
5655-W78	3.2.0	IBM DB2 Recovery Expert for z/OS
5697-DAR	3.2.0	IBM DB2 Administration Toolkit for z/OS the SAP Edition
5697-DFM	1.2.0	IBM DB2 Fast Copy Solution Pack for z/OS

Product identification number

Program PID number	Subscription and Support PID number
5655-DAT	5655-E90
5655-N15	5655-N11
5655-DOC	5655-E40
5655-W78	5697-N47
5697-DAR	5697-N30
5697-DFM	5697-DFS

Offering Information

Product information is available via the Offering Information website

<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).

[BP Attachment for Announcement Letter 215-263](#)

Publications

The following publications are shipped with the products in this announcement:

Title	Order number
IBM DB2 Administration Tool for z/OS, V11.2 (5655-DAT):	
License Information	GC19-4133
Program Directory	GI10-8972
IBM DB2 Cloning Tool for z/OS, V3.2 (5655-N15)	
License Information	GC19-3490
Program Directory	GI10-8910
IBM DB2 Object Comparison Tool for z/OS, V11.2 (5655-DOC)	
License Information	GC19-4138

Title	Order number
Program Directory	GI10-8974
IBM DB2 Recovery Expert for z/OS, V3.2 (5655-W78)	
License Information	GC19-3685
Program Directory	GI10-8927
IBM DB2 Administration Toolkit for z/OS the SAP Edition, V3.2 (5697-DAR)	
License Information	GC19-4244
Program Directory	GI10-8990
IBM DB2 Fast Copy Solution Pack for z/OS, V1.2 (5697-DFM)	
License Information	GC19-3786
Program Directory	GI10-8934

The following publications for the product in this announcement cannot be ordered in hardcopy. These publications will be available on the product availability dates, on the DB2 Tools Product Documentation page, at

<http://www.ibm.com/support/docview.wss?uid=swg27020910>

Title	Order number
DB2 Administration Tool for z/OS, V11.2	
User's Guide	SC27-4566
DB2 Cloning Tool for z/OS, V3.2	
User's Guide	SC27-6556
DB2 Object Comparison Tool for z/OS, V11.2	
User's Guide	SC27-4568
DB2 Recovery Expert for z/OS, V3.2	
User's Guide	SC27-4569
DB2 Fast Copy Solution Pack for z/OS, V1.2	
Overview and Customization Guide	SC27-4567

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 or to contact a Software Services sales specialist, visit

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

Technical information

Specified operating environment

Hardware requirements

The products in this announcement will operate on any z Systems hardware configuration that supports the required versions of DB2 and z/OS.

Software requirements

Mandatory installation requirements

The products in this announcement require:

- One of the following:
 - IBM z/OS, V1.13 (5694-A01), or later
 - IBM z/OS, V2.1 (5650-ZOS), or later
- IBM SMP/E for z/OS, V3.6 (5655-G44), or later

Mandatory operational requirements

The products in this announcement operate with:

- IBM DB2 V10.1 (5605-DB2)
- IBM DB2 Value Unit Edition, V10.1 (5697-P31)
- IBM DB2 V11.1 (5615-DB2)
- IBM DB2 Value Unit Edition, V11.1 (5697-P43)

DB2 Object Comparison Tool for z/OS, V11.2 requires DB2 Administration Tool for z/OS, V11.2 (5655-DOC).

The DB2 Recovery Expert for z/OS, V3.2 web browser user interface requires a browser that supports web sockets. Currently, the following browsers support web sockets:

- Google Chrome 16, or later
- Mozilla Firefox 11.0, or later
- Microsoft™ Internet Explorer 10, or later
- Opera 12.10, or later
- Apple Safari 6.0, or later (non-Microsoft Windows™ Version)

For post-installation customization, DB2 Administration Tool, V11.2; DB2 Administration Toolkit for z/OS the SAP Edition, V3.2; DB2 Object Comparison Tool for z/OS, V11.2; DB2 Cloning Tool for z/OS, V3.2; DB2 Fast Copy Solution Pack for z/OS, V1.2; and DB2 Recovery Expert for z/OS, V3.2 require FMID HTCZ110 IBM Tools Customizer for z/OS at the latest maintenance level which is delivered in IBM Tools Base, V1.4 (5655-V93), or later.

Conditional operational requirements

DB2 Recovery Expert for z/OS, V3.2 (5655-W78) requires:

- One of the following product pairs:
 - DB2 for z/OS, V10.1 (5605-DB2) or DB2 for z/OS, V10.1 VUE (5697-P31), and DB2 Utilities Suite for z/OS, V10.1 (5655-V41)
 - DB2 for z/OS, V11.1 (5615-DB2) or DB2 for z/OS, V10.1 VUE (5697-P43), and IBM DB2 Utilities Suite for z/OS, V11.1 (5655-W87)
- BCV and SNAP backups require:
 - EMC Symmetrix 6, or later, running with Microcode 5x67, or later.
 - To use Enginuity Consistency Assist (ECA), Microcode 5x67 with patch 14882, 5x68 with patch 18954, or 5x69, or later, is required. To use ECA with SNAP VOLUME technology, the EMC SNAP library must be level 5.5, or higher. Protected BCV restore requires Microcode 5x70, or higher.
- FlashCopy^(R) requirements for backup and restore:
 - Use of FlashCopy for full system backup and restore requires the storage subsystem to be FlashCopy V1 capable.

- Object-level restore requires the storage subsystem be FlashCopy V2 capable.
- DFSMSDss requirements.
 - For DFSMSDss backups, DFSMSDss must be version 1 release 8, or higher.
 - To perform encryption during offloads, DFSMSDss requires the following software:
 - Encryption Facility DFSMSDss Encryption Feature (FMID)
 - IBM Cryptographic Services Facility (ICSF) (HCR770B, or higher)

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.

User Group requirements

The products in this announcement satisfy or partially satisfy requirements from one or more of the worldwide user group communities. Groups include COMMON, COMMON Europe, Guide Share Europe (GSE), InterAction (Australia/New Zealand), Japan Guide Share (JGS), and SHARE Inc. Requirements satisfied include:

IBM DB2 Administration Tool for z/OS, V11.2 (5655-DAT) satisfies the following requirements:

RFE33872	RFE37203	RFE43820
RFE33909	RFE37204	RFE45911
RFE33911	RFE37205	RFE46039
RFE33912	RFE37206	RFE46040
RFE33961	RFE37208	RFE54555
RFE33965	RFE37213	RFE54833
RFE34350	RFE38570	RFE58041
RFE34427	RFE41698	RFE59396
RFE34480	RFE41942	RFE69953
RFE36189	RFE41946	
RFE36190	RFE41948	

IBM DB2 Object Comparison Tool for z/OS, V11.2 (5655-DOC) satisfies the following requirements:

RFE33872	RFE36189	RFE41946
RFE33912	RFE38570	RFE54833

Planning information

Packaging

The programs in this announcement are distributed with the following content:

- Basic machine-readable material
- Program Directory
- IBM International Program License Agreement (IPLA)
- IBM Agreement for Acquisition of Software Maintenance (IAASM)

Security, auditability, and control

The programs in this announcement use the security and auditability features of the host 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.

Ordering information

The programs in this announcement all have Value Unit-Based pricing.

Program number	Program name	Value Unit exhibit
5655-DAT	IBM DB2 Administration Tool for z/OS	VUE007
5655-N15	IBM DB2 Cloning Tool for z/OS	VUE007
5655-DOC	IBM DB2 Object Comparison Tool for z/OS	VUE007
5655-W78	IBM DB2 Recovery Expert for z/OS	VUE007
5697-DAR	IBM DB2 Administration Toolkit for z/OS the SAP Edition	VUE007
5697-DFM	IBM DB2 Fast Copy Solution Pack for z/OS	VUE007

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 *therequired license capacity*. Your required license capacity is based upon the following factors:

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

Value Unit exhibit VUE007

	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	+	0.2

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:

Translation from MSUS to value units

	MSUS	*	Value Units/MSU	=	value units
Base	3	*	1.00	=	3.00
Tier A	42	*	.45	=	18.90
Tier B	130	*	.36	=	46.80
Tier C	140	*	.27	=	37.80
Tier D	1,185	*	.20	=	237.00
Total	1,500				343.50

When calculating the total number of Value Units, the sum is to be rounded up to the next integer.

Ordering z/OS through the Internet

Shopz provides an easy way to plan and order your z/OS ServerPac or CBPDO. It will analyze your current installation, determine the correct product migration, and present your new configuration based on z/OS. Additional products can also be added to your order (including determination of whether all product requisites are satisfied). Shopz is available in the US and several countries in Europe. In countries where Shopz 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 Shopz website at

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

Charge metric

Program name	PID number	Charge metric
IBM DB2 Administration Tool for z/OS	5655-DAT	Value Unit
IBM DB2 Cloning Tool for z/OS	5655-N15	Value Unit
IBM DB2 Object Comparison Tool for z/OS	5655-DOC	Value Unit
IBM DB2 Recovery Expert for z/OS	5655-W78	Value Unit
IBM DB2 Administration Toolkit for z/OS the SAP Edition	5697-DAR	Value Unit
IBM DB2 Fast Copy Solution Pack for z/OS	5697-DFM	Value Unit

Basic license

On/Off CoD

The products in this announcement are 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	1.00
Tier A	4-45	0.45
Tier B	46-175	0.36
Tier C	176-315	0.27
Tier D	316+	0.20

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 DB2 Administration Tool for z/OS, V11.2

Program PID: 5655-DAT

Entitlement identifier	Description	License option/Pricing metric
S0179KL	DB2 Administration Tool for z/OS, V11	Basic OTC, Value Units
		Basic OTC per MSU-day TUC
Orderable supply ID	Language	Distribution medium
S0179KK	US English	3590 Tape cartridge

Program name: IBM DB2 Cloning Tool for z/OS, V3.2**Program PID: 5655-N15**

Entitlement identifier	Description	License option/Pricing metric
S016VGS	DB2 Cloning Tool for z/OS, V3	Basic OTC, Value Units
		Basic OTC, per MSU-day TUC
Orderable supply ID	Language	Distribution medium
S016WC4	US English	3590 Tape cartridge

Program name: IBM DB2 Object Comparison Tool for z/OS, V11.2**Program PID: 5655-DOC**

Entitlement identifier	Description	License option/Pricing metric
S017B89	DB2 Object Comparison Tool for z/OS, V11	Basic OTC, Value Units
		Basic OTC, per MSU-day TUC
Orderable supply ID	Language	Distribution medium
S017B88	US English	3590 Tape cartridge

Program name: IBM DB2 Recovery Expert for z/OS, V3.2**Program PID: 5655-W78**

Entitlement identifier	Description	License option/Pricing metric
S016XWG	DB2 Recovery Expert for z/OS, V3	Basic OTC, Value Units
		Basic OTC, per MSU-day TUC
Orderable supply ID	Language	Distribution medium
S016XWJ	US English	3590 Tape cartridge

Program name: IBM DB2 Administration Toolkit for z/OS the SAP Edition, V3.2**Program PID: 5697-DAR**

Entitlement identifier	Description	License option/Pricing metric
S017FK6	DB2 Administration Toolkit for z/OS the SAP Edition, V3	Basic OTC, Value Units
		Basic OTC, per MSU-day TUC
Orderable supply ID	Language	Distribution medium
S017FK5	US English	3590 Tape cartridge

Program name: IBM DB2 Fast Copy Solution Pack for z/OS, V1.2**Program PID: 5697 - DFM**

Entitlement identifier	Description	License option/Pricing metric
S01731M	DB2 Fast Copy Solution Pack for z/OS, V1	Basic OTC, Value Units
	Trade up from 5655-N15	Basic OTC, per MSU-day TUC
	Trade up from 5655-W78	

Entitlement identifier	Description	License option/Pricing metric
	Trade up from 5655-N15 and 5655-W78	
Orderable supply ID	Language	Distribution medium
S01731L	US English	3590 Tape cartridge

Subscription and Support PID: 5655-E90

Entitlement identifier	Description	License option/Pricing metric
S00V746	DB2 Administration Tool for z/OS S&S	Basic ASC, per Value Unit SW S&S No charge, decline SW S&S Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S00TH8J	US English	Hardcopy publication

Subscription and Support PID: 5655-N11

Entitlement identifier	Description	License option/Pricing metric
S012JPH	DB2 Cloning Tool for z/OS S&S	Basic ASC, per Value Unit SW S&S No charge, decline SW S&S Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S012JPJ	US English	Hardcopy Publication

Subscription and Support PID: 5655-E40

Entitlement identifier	Description	License option/Pricing metric
S00V1JB	DB2 Object Comparison Tool for z/OS S&S	Basic ASC, per Value Unit SW S&S No charge, decline SW S&S Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S00V1XZ	US English	Hardcopy publication

Subscription and Support PID: 5697-N47

Entitlement identifier	Description	License option/Pricing metric
S012CMZ	DB2 Recovery Expert for z/OS S&S	Basic ASC, per Value Unit SW S&S No charge, decline SW S&S Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S012CN0	US English	Hardcopy publication

Subscription and Support PID: 5697-N30

Entitlement identifier	Description	License option/Pricing metric
S011VVR	DB2 Administration Toolkit for z/OS the SAP Edition S&S	Basic ASC, per Value Unit SW S&S

Entitlement identifier	Description	License option/Pricing metric
		No charge, decline SW S&S
		Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S011VVS	US English	Hardcopy publication

Subscription and Support PID: 5697-DFS

Entitlement identifier	Description	License option/Pricing metric
S01731J	DB2 Fast Copy Solution Pack for z/OS S&S	Basic ASC, per Value Unit SW S&S
		No charge, decline SW S&S
		Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S01731H	US English	Hardcopy publication

Subscription and Support

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

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

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

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

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

The combined effect of the IPLA license and the Agreement for Acquisition of Software Maintenance gives you rights and support services comparable to those under the traditional ICA S/390^(R) and z Systems license or its equivalent. To ensure that you continue to enjoy the level of support you are used to in the ICA business model, you must order both the license for the program and the support for the selected programs at the same Value Unit quantities.

Withdrawal from marketing (WFM) information

A new product release within a version supersedes the release level that precedes it. Accordingly, the following product releases will be withdrawn from marketing, effective on the date the new release becomes available.

Releases to be withdrawn from marketing effective August 28, 2015:

Name of product being withdrawn	Version	Release	Modification	Product number
IBM DB2 Administration Tool for z/OS	11	1	0	5655-DAT

Name of product being withdrawn	Version	Release	Modification	Product number
IBM DB2 Cloning Tool for z/OS	3	1	0	5655-N15
IBM DB2 Object Comparison for z/OS	11	1	0	5655-DOC
IBM RB2 Recovery Expert for z/OS	3	1	0	5655-W78

IBM DB2 Administration Tool for z/OS, V11.1 (5655-DAT) is replaced by IBM Administration Tool for z/OS, V11.2 (5655-DAT). IBM DB2 Cloning Tool for z/OS, V3.1 (5655-N15) is replaced by IBM DB2 Cloning Tool for z/OS, V3.2 (5655-N15). IBM DB2 Object Comparison Tool for z/OS, 11.1 (5655-DOC) is replaced by IBM DB2 Object Comparison Tool for z/OS, V11.2 (5655-DOC). IBM DB2 Recovery Expert for z/OS, V3.1 (5655-W78) is replaced by IBM Recovery Expert for z/OS, V3.2 (5655-W78).

Releases to be withdrawn from marketing effective September 4, 2015:

Name of product being withdrawn	Version	Release	Modification	Product number
IBM DB2 Administration Toolkit for z/OS the SAP Edition	3	1	0	5697-DAR
IBM DB2 Fast Copy Solution Pack for z/OS	1	1	0	5697-DFM

IBM DB2 Administration Toolkit for z/OS the SAP Edition, V3.1 (5697-DAR) is replaced by IBM DB2 Administration Toolkit for z/OS the SAP Edition, V3.2 (5697-DAR). IBM DB2 Fast Copy Solution Pack for z/OS, V1.1 (5697-DFM) is replaced by IBM DB2 Fast Copy Solution Pack for z/OS, V1.2 (5697-DFM).

Customized Offerings

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

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

You choose the delivery method when you order the software. IBM recommends Internet delivery. In addition to Internet and DVD, the supported tape delivery options include:

- 3590
- 3592

Most products can be ordered in ServerPac the month following their availability in CBPDO. z/OS can be ordered via 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, visit the Help section on the Shopz website at

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

For additional information on the Product ServerPac option, refer to Software Announcement [212-272](#), dated July 7, 2012.

Production of software product orders will begin on the planned general availability date.

- CBPDO shipments will begin one week after general availability.
- ServerPac shipments will begin two 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.

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)

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

License Information number

Program name	Program number	License Information
IBM DB2 Administration Tool for z/OS	5655-DAT	GC19-4133
IBM DB2 Cloning Tool for z/OS	5655-N15	GC19-3490
IBM DB2 Object Comparison Tool for z/OS	5655-DOC	GC19-4138
IBM DB2 Recovery Expert for z/OS	5655-W78	GC19-3685
IBM DB2 Administration Toolkit for z/OS the SAP Edition	5697-DAR	GC19-4244

Program name	Program number	License Information
IBM DB2 Fast Copy Solution Pack for z/OS	5697-DFM	GC19-3786

The program's License Information will be available for review on the IBM Software License Agreement website

<http://www.ibm.com/software/sla/sladb.nsf>

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

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.

Volume orders (IVO)

No

Passport Advantage applies

No

Software Subscription and Support applies

Yes. During the S&S 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 via telephone or electronically to address suspected program defects. Technical assistance is available from the IBM support center in the Customer's geography.

Additional details regarding Technical Assistance, that includes IBM contact information, are provided in the *IBM Software Supportat*

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

S&S does not include assistance for:

- The design and development of applications
- Customer's use of programs in other than their specified operating environment, or
- Failures caused by products for which IBM is not responsible under the IBM Agreement for Acquisition of Software Maintenance.

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

- The z Systems IPLA program you select
- The applicable Value Unit Exhibit
- The applicable terms

- Whether your current mainframes are full capacity or sub-capacity

For more information on the Value Unit Exhibit for the z Systems IPLA program you selected, refer to the [Ordering information](#) section.

Program number	Program name	Terms	Parent, if applicable
5655-DAT	IBM DB2 Administration Tool for z/OS	Reference-based	DB2 for z/OS, V10.1 (5605-DB2)
			DB2 for z/OS VUE, V10.1 (5697-P31)
			DB2 for z/OS, V11.1 (5615-DB2)
			DB2 for z/OS VUE, V11.1 (5697-P43)
5655-N15	IBM DB2 Cloning Tool for z/OS	Reference-based	DB2 for z/OS, V10.1 (5605-DB2)
			DB2 for z/OS VUE, V10.1 (5697-P31)
			DB2 for z/OS, V11.1 (5615-DB2)
			DB2 for z/OS VUE, V11.1 (5697-P43)
5655-DOC	IBM DB2 Object Comparison Tool for z/OS	Reference-based	DB2 for z/OS, V10.1 (5605-DB2)
			DB2 for z/OS VUE, V10.1 (5697-P31)
			DB2 for z/OS, V11.1 (5615-DB2)
			DB2 for z/OS VUE, V11.1 (5697-P43)
5655-W78	IBM DB2 Recovery Expert for z/OS	Reference-based	DB2 for z/OS, V10.1 (5605-DB2)
			DB2 for z/OS VUE, V10.1 (5697-P31)
			DB2 for z/OS, V11.1 (5615-DB2)
			DB2 for z/OS VUE, V11.1 (5697-P43)
5697-DAR	IBM DB2 Administration Toolkit for z/OS the SAP Edition ¹	Full machine-based	N/A
5697-DFM	IBM DB2 Fast Copy Solution Pack for z/OS	Reference-based	DB2 for z/OS, V10.1 (5605-DB2)
			DB2 for z/OS VUE, V10.1 (5697-P31)
			DB2 for z/OS, V11.1 (5615-DB2)
			DB2 for z/OS VUE, V11.1 (5697-P43)

¹ Licenses to the IBM DB2 Administration Toolkit for z/OS the SAP Edition, V3.2 (5697-DAR) programs only authorize use of the programs in support of DB2 for z/OS (including DB2 for z/OS VUE) instances that are supporting an SAP environment.

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, visit

<http://www.ibm.com/systems/z/resources/swprice/reference/exhibits/>

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

Sub-capacity mainframes

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

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

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

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

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

For more information on mainframe MSU-rated capacities, refer to *The IBM z Systems Machines Exhibit, Z125-3901*, or visit the Mainframes section of the z Systems Exhibits website.

<http://www.ibm.com/systems/z/resources/swprice/reference/exhibits/>

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, visit the z Systems Software Pricing website

<http://www.ibm.com/systems/z/resources/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 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 a sub-capacity eligible reference product and machine.

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 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 comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective. IBM does not warrant that systems and products are immune from the malicious or illegal conduct of any party.

Prices

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

Information on charges is available at

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

Choose the option entitled Purchase/upgrade tools.

Program name: IBM DB2 Administration Tool for z/OS, V11.2

Program PID: 5655-DAT

Entitlement identifier	Description	License option/Pricing metric
S0179KL	DB2 Administration Tool for z/OS, V11	Basic OTC, Value Units
		Basic OTC per MSU-day TUC
Orderable supply ID	Language	Distribution medium
S0179KK	US English	3590 Tape cartridge

Program name: IBM DB2 Cloning Tool for z/OS, V3.2

Program PID: 5655-N15

Entitlement identifier	Description	License option/Pricing metric
S016VGS	DB2 Cloning Tool for z/OS, V3	Basic OTC, Value Units
		Basic OTC, per MSU-day TUC
Orderable supply ID	Language	Distribution medium
S016WC4	US English	3590 Tape cartridge

Program name: IBM Object Comparison Tool for z/OS, V11.2

Program PID: 5655-DOC

Entitlement identifier	Description	License option/Pricing metric
S017B89	DB2 Object Comparison Tool for z/OS, V11	Basic OTC, Value Units
		Basic OTC, Per MSU-day TUC
Orderable supply ID	Language	Distribution medium
S017B88	US English	3590 Tape cartridge

Program name: IBM DB2 Recovery Expert for z/OS, V3.2

Program PID: 5655-W78

Entitlement identifier	Description	License option/Pricing metric
S016XWG	DB2 Recovery Expert for z/OS, V3	Basic OTC, Value Units
		Basic OTC, per MSU-day TUC
Orderable supply ID	Language	Distribution medium
S016XWJ	US English	3590 Tape cartridge

Program name: IBM DB2 Administration Toolkit for z/OS the SAP Edition, V3

Program PID: 5697-DAR

Entitlement identifier	Description	License option/Pricing metric
S017FK6	DB2 Administration Toolkit for z/OS the SAP Edition, V3	Basic OTC, Value Units

Entitlement identifier	Description	License option/Pricing metric
		Basic OTC, per MSU-day TUC
Orderable supply ID	Language	Distribution medium
S017FK5	US English	3590 Tape cartridge

Program name: IBM DB2 Fast Copy Solution Pack for z/OS, V1.2

Program PID: 5697-DFM

Entitlement identifier	Description	License option/Pricing metric
S01731M	DB2 Fast Copy Solution Pack for z/OS, V1	Basic OTC, Value Units
	Trade up from 5655-N15	Basic OTC, per MSU-day TUC
	Trade up from 5655-W78	
	Trade up from 5655-N15 and 5655-W78	
Orderable supply ID	Language	Distribution medium
S01731L	US English	3590 Tape cartridge

Subscription and Support PID: 5655-E90

Entitlement identifier	Description	License option/Pricing metric
S00V746	DB2 Administration Tool for z/OS S&S	Basic ASC, per Value Unit SW S&S
		No charge, decline SW S&S
		Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S00TH8J	US English	Hardcopy publication

Subscription and Support PID: 5655-N11

Entitlement identifier	Description	License option/Pricing metric
S012JPH	DB2 Cloning Tool for z/OS S&S	Basic ASC, per Value Unit SW S&S
		No charge, decline SW S&S
		Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S012JPJ	US English	Hardcopy Publication

Subscription and Support PID: 5655-E40

Entitlement identifier	Description	License option/Pricing metric
S00V1JB	DB2 Object Comparison Tool for z/OS S&S	Basic ASC, per Value Unit SW S&S
		No charge, decline SW S&S
		Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S00V1XZ	US English	Hardcopy publication

Subscription and Support PID: 5697-N47

Entitlement identifier	Description	License option/Pricing metric
S012CMZ	DB2 Recovery Expert for z/OS S&S	Basic ASC, per Value Unit SW S&S
		No charge, decline SW S&S
		Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S012CN0	US English	Hardcopy publication

Subscription and Support PID: 5697-N30

Entitlement identifier	Description	License option/Pricing metric
S011VVR	DB2 Administration Toolkit for z/OS the SAP Edition, S&S	Basic ASC, per Value Unit SW S&S
		No charge, decline SW S&S
		Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S011VVS	US English	Hardcopy publication

Subscription and Support PID: 5697-DFS

Entitlement identifier	Description	License option/Pricing metric
S01731J	DB2 Fast Copy Solution Pack for z/OS, S&S	Basic ASC, per Value Unit SW S&S
		No charge, decline SW S&S
		Per MSU SW S&S registration
Orderable supply ID	Language	Distribution medium
S01731H	English	Hardcopy publication

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