BMC is releasing version 12.1.00 of the BMC Next Generation Technology Utility Suite Accelerator for DB2 (NGT Utility Suite Accelerator) solution.

NGT Utility Suite Accelerator includes the following products:

- Next Generation Technology Check for DB2 for z/OS (NGT Check)
- Next Generation Technology Copy for DB2 for z/OS (NGT Copy)
- Next Generation Technology Load for DB2 for z/OS (NGT Load)
- Next Generation Technology Recover for DB2 for z/OS (NGT Recover)
- Next Generation Technology Reorg for DB2 for z/OS (NGT Reorg)
- SNAPSHOT UPGRADE FEATURE of EXTENDED BUFFER MANAGER for DB2
- Next Generation Technology Unload for DB2 for z/OS (NGT Unload)

**Note**

Before you begin installation, BMC recommends that you check the Support Central website at http://www.bmc.com/support for:

- Updated product documentation (for example, flashes and technical bulletins)
- Product downloads, patches, and fixes (PTFs)
- Product availability and compatibility data

These release notes supplement and supersede the product documentation and discuss product enhancements.

The following topics are discussed:

- What's new .................................................................2
- Next Generation Technology Utility Suite Accelerator for DB2, version 12.1.00 .................................................................2
- Common changes for selected NGT utility products .....................3
- Next Generation Technology Check for DB2 for z/OS (NGT Check), version 12.1.00 .................................................................6
- Next Generation Technology Copy for DB2 for z/OS (NGT Copy), version 12.1.00 .................................................................6
What's new

These topics describe the changes or new features in this release.

Next Generation Technology Utility Suite Accelerator for DB2, version 12.1.00

Version 12.1.00 of the Next Generation Technology Utility Suite Accelerator solution includes the following changes.

Solution components

This version of the solution includes a new release of the following components:

- NGT Check
- NGT Copy (formerly COPY PLUS for DB2)
- NGT Load
- NGT Recover (formerly RECOVER PLUS for DB2)
- NGT Reorg
- SNAPSHOT UPGRADE FEATURE
- NGT Unload
Installation System changes

Beginning with version 3.1.00 of the Installation System, new product releases necessitate a new Installation System FMID. Before installing any products, always ensure that you have the most recent version of the Installation System installed and that you have refreshed its runtime environment.

This change enables PTF maintenance for individual levels of the Installation System. The change also eliminates the requirement to provide the Installation Maintenance Value, which simplifies the installation process.

For more information, see the release notes for the most current version of the Installation System.

Support for IBM DB2 Version 12

This release adds support for DB2 Version 12.

This release supports:

- DB2 Version 12
- DB2 Version 11
- DB2 Version 10 in new-function mode (NFM) only

COPY PLUS for DB2 name change

Starting with this release, the name of the COPY PLUS for DB2 product has changed to the BMC Next Generation Technology Copy for DB2 for z/OS (or NGT Copy) product. Affected product panels and documentation use the new name.

RECOVER PLUS for DB2 name change

Starting with this release, the name of the RECOVER PLUS for DB2 product has changed to the BMC Next Generation Technology Recover for DB2 for z/OS (or NGT Recover) product. Affected product panels and documentation use the new name.

Common changes for selected NGT utility products

Version 12.1.00 of the following NGT utility products includes common changes:

- NGT Check
- NGT Load
- NGT Reorg
NGT Unload

The following topics describe the common changes. For product-specific changes, see the individual section for each product.

Installation of NGT products

You now use the BMC Installation System to install and configure the NGT products.

Use the following documentation to assist you in installing, configuring, and customizing the NGT products:

- Installation System Quick Start
- Installation System Reference Manual
- BMC Products and Solutions for DB2 Customization Guide

The BMC Next Generation Technology Installation Guide is now obsolete.

Authorization ID

The NGT products now enable you to use the DBM1 authorization ID.

Synonyms

The NGT products now use aliases instead of synonyms.

Component and library names

Many of the NGT product components and libraries with names beginning with CDB have been renamed to begin with NGT.

In most cases, the name change only substitutes NGT for CDB (for example, CDBDISP is now NGTDISP). CDBEXEC is the exception in that it has been renamed to NGTAUTO. These name changes are reflected in the NGT messages and in the documentation.

Concurrent access control

The following products now use the BMCUTIL and BMCSYNC common tables to control concurrent access to the objects on which they operate. Using these tables does not replace using the BMC Next Generation Technology (NGT) Matrix and the utility internal databases (IDBs).

- NGT Check
As part of this enhancement, you can use the NGTDISP utility to display entries from these two tables. For more information about the new options to specify with NGTDISP, see the *BMC Next Generation Technology General User Guide*.

BMC provided this enhancement for version 11.2 via BMC PTFs BPU8370, BPU8384, and BPJ1316.

**New component requirement**

The NGT products now use the DB2 Solution Common Code (SCC) component. SCC is installed when you install the NGT products.

BMC introduced this requirement for version 11.2 via BMC PTFs BPU8370, BPU8384, and BPJ1316.

**Maintenance listing**

Each NGT product now reports the BMC maintenance that has been applied for that product. This information appears in your CDBPRINT.

**SQL functionality**

The following products now enable you to use an SQL-like language known as NGT SQL:
- NGT Check
- NGT Load
- NGT Reorg
- NGT Unload
- NGT Utility Manager

The NGT utility products use NGT SQL for such specifications as WHERE or WHEN clauses, SELECT lists, and indexes on expression. For more information, see the *BMC Next Generation Technology General User Guide*.

**Utility parameters**

This release adds the following new NGT utility parameters (UTLPARMS):
### Parameter | Description
---|---
+ALLERROR | Enables you to set the behavior of SYSERROR
+DSNUTILB | Specifies whether to enable NGT Reorg to invoke DSNUTILB when needed
+IGNOBJSETPARTS | Specifies whether to disregard partition numbers defined in object sets
+LOGPDS | Overrides the default log data set name
+NGTAUTO1 | Overrides the default NGT automation data set name
+NGTAUTO2 | Enables you to configure a second NGT automation data set
+NGCHKPT | Overrides the default NGT checkpoint data set name
+NGTSVR | Overrides the default name of the NGT server JCL data set
+OBJSETSTOGROUP | Defines the storage group that NGT utilities use to store temporary objects
+OVERRIDEOUTPUT | Specifies whether NGT automation control points override OUTPUT command values
+USER1 and +USER2 | Define user-defined variables that you can use with certain configuration parameters
+XBMID | Specifies which XBM subsystem to use when NGT Load invokes NGT Copy

For more information about these parameters, see the *BMC Next Generation Technology General User Guide*.

### Next Generation Technology Check for DB2 for z/OS (NGT Check), version 12.1.00

Version 12.1.00 of NGT Check includes the common NGT utility changes described in these release notes.

For more information, see “Common changes for selected NGT utility products” on page 3.

### Next Generation Technology Copy for DB2 for z/OS (NGT Copy), version 12.1.00

Version 12.1.00 of NGT Copy includes the following changes.

**Copying compressed LOBs**

In this release, you can copy compressed large objects (LOBs).
Additional zIIP offload

Starting with this release, NGT Copy offloads substantially more copy processing to the IBM z Integrated Information Processor (zIIP). This capability can reduce central processing (CP) time by 50 percent or more.

NSCMAIN deprecated

This release deprecates the NSCMAIN program. You can now make consistent copies by adding CONSISTENT YES to a COPY command that runs through the ACPMAIN program.

MAXSNAPS option

This release adds the MAXSNAPS option to the DELETE subcommand of the MODIFY command.

This option provides an alternative method of SYSCOPY or BMCXCOPY cleanup. You can specify the number of Instant Snapshot Copies and FlashCopies to retain. When the specified limit is reached, any older Instant Snapshot Copies or FlashCopies are deleted. If you specify ICFDELETE YES, NGT Copy also deletes the image copy data sets.

Reduced time for running the MODIFY command

You can specify the ICFDELETE option on the MODIFY command to write the names of data sets that need to be deleted to a file. Using ICFDELETE reduces the time it takes to run the MODIFY command. You can then delete the data sets from the file at a time convenient for you.

Support for archive-enabled tables

This release adds the AUX ARCHIVE option to support copying archive-enabled tables.

Use of the WHERE option on the DELETE subcommand

With this release, you must comply with the following guidelines when using the WHERE option on the DELETE subcommand:

- Do not use WHERE within another WHERE clause; use the OR connector option, instead.

- Do not use the following options with a WHERE option:
New symbolic variable &PART4

This release adds the &PART4 symbolic variable that you can use for any data set. &PART4 generates 4-character partition numbers.

Substrings of symbolic variables

With this release, you can use substrings of symbolic variables in data set names.

Access to the SYSLGRNX table if you are using IBM DB2 Version 10

With this release, NGT Copy no longer supports indirect access to the SYSIBM.SYSLGRNX table but supports direct access as follows:

- **If you are using IBM DB2 Version 10**, ensure that CATMAINT has been executed for IBM APARs PM35190 and PM55333. These APARs define the SYSLGRNX table in the DB2 catalog. With the APARs applied, NGT Copy can access SYSLGRNX directly via the DB2 catalog.

- **If you are using DB2 Version 11 or later**, you have direct access to SYSLGRNX; starting with Version 11, DB2 automatically defines SYSLGRNX in the DB2 catalog.

New SCOPE STATUS option

This release adds the SCOPE STATUS option to the COPY object options. SCOPE STATUS allows you to copy only objects that are in a specified status, such as COPY pending.

Object set management in BMC Workbench

The BMC Workbench for DB2 product now enables you to manage object sets, which are used by the RECOVERY MANAGER and DASD MANAGER PLUS products, and by certain NGT utilities.

**Note**

In BMC Workbench, you can edit only object sets that were created by using BMC Workbench. However, you can resolve, copy, and view object sets from all sources.
Next Generation Technology Load *for DB2 for z/OS* (NGT Load), version 12.1.00

Version 12.1.00 of NGT Load includes the following changes.

**Note**
This version also includes the common NGT utility changes described in “Common changes for selected NGT utility products” on page 3.

**Object support**

NGT Load now supports the following objects:
- Indexes that are defined with BUSINESS_TIME WITHOUT OVERLAPS
- Table spaces that have been altered but do not have system pages

**Dynamic allocation of data sets**

The NGT Load, NGT Unload, and NGT Reorg products now enable you to use the NGT OUTPUT command to dynamically allocate certain data sets.

In addition to this new command, you can use the new utility parameter +OVERRIDEOUTPUT. This parameter enables you to specify whether to dynamically allocate data sets by using the OUTPUT command or by using the appropriate automation control point.

For syntax information about the OUTPUT command and the +OVERRIDEOUTPUT parameter, see the *BMC Next Generation Technology General User Guide*. For
information about which data sets you can allocate with the OUTPUT command, see the reference manuals for the individual products.

**Compression dictionaries**

NGT Load now builds a dictionary when all of the following conditions exist:

- You specify LOAD RESUME YES.
- A dictionary does not currently exist on the table space.
- The table space is defined with COMPRESS YES.

For more information, see the compression dictionaries topic in the *BMC Next Generation Technology Load for DB2 for z/OS Reference Manual*.

**Command options**

This release provides several new command options and changes to existing options for NGT Load. This topic briefly describes the new and changed options that these release notes have not already described. For more information about these options, see the *BMC Next Generation Technology Load for DB2 for z/OS Reference Manual*.

**FORMAT**

NGT Load no longer supports FORMAT ARCHIVE.

**PREFORMAT**

NGT Load now accepts values of YES or NO with PREFORMAT. (You can also specify PREFORMAT without a value, which NGT Load treats as PREFORMAT YES.)

**RESUME**

You can now specify LOAD RESUME NO, which enables you to load data into an empty table space. NGT Load terminates if the table space is not empty.

*Note*

This behavior differs from the behavior that results when you default to LOAD RESUME NO.

**SHRLEVEL**

You can now specify SHRLEVEL CHANGE and SHRLEVEL REFERENCE with LOAD REPLACE:
LOAD REPLACE SHRLEVEL CHANGE enables read/write access to the table space or partition that you are loading, but replaces all data during the load.

LOAD REPLACE SHRLEVEL REFERENCE enables read-only access to the table space or partition that you are loading, and replaces all data during the load.

**LOADPLUS command syntax**

NGT Load supports the following LOADPLUS for DB2 command options:

- ORDER YES enables you to sort rows in clustering index order. This option overrides the NGT Load +SORT parameter.

- REDEFINE tells NGT Load whether to delete and redefine the VSAM data sets for the DB2 objects that are participating in the load.

- DELETEFILES enables you to delete the INFO and OUT files after the load completes successfully. This option overrides the NGT utilities +DELETEOUTPUT parameter.

- CHECKPEND tells NGT Load whether to set dependent table spaces to CHECK pending status. This option overrides the NGT Load +SETCHECKPEND parameter.

- UPDATEDB2STATS tells NGT Load whether to update statistics in the DB2 catalog. This option overrides the NGT Load +RUNSTATS parameter.

- IDENTITYOVERRIDE tells NGT Load whether to load identity column values from an input file when the identity column is defined as GENERATED ALWAYS.

- DRAIN_WAIT enables you to specify how long to hold a drain. This option overrides the value of the first subparameter of the NGT utilities +QRETRY parameter.

- APCOMMIT enables you to specify the number of records to insert per commit during a LOAD RESUME YES SHRLEVEL CHANGE job. This option overrides the NGT Load +COMMIT parameter.

- COPY tells NGT Load whether to produce a copy during the load.

- OBID enables you to specify the object ID of your input file.

- SKIPFIELDS is a synonym for the existing IGNOREFIELDS option.

- REPLACE and RESUME YES on your INTO TABLE statement enable you to tell NGT Load how to load data at the partition level.
Next Generation Technology Recover for DB2 for z/OS (NGT Recover), version 12.1.00

Version 12.1.00 of NGT Recover includes the following changes.

**Support for R+/CHANGE ACCUM on IBM DB2 Version 12**

This release of NGT Recover supports R+/CHANGE ACCUM on DB2 Version 12.

NGT Recover can read change accumulation files created in R+/CHANGE ACCUM version 11.1 or later. NGT Recover ignores change accumulation files created by earlier versions of R+/CHANGE ACCUM and uses the DB2 logs instead.

**Additional zIIP offload**

Starting with this release, NGT Recover offloads substantially more rebuild index processing to the IBM z Integrated Information Processor (zIIP). This can reduce central processor (CP) time by 50% or more.

**Performance improvements for REBUILD INDEX**

This release introduces a number of significant optimizations to the REBUILD INDEX code that substantially reduce processing time and the time it takes to rebuild indexes.

**Recovery performance improvements**

Starting with this release, NGT Recover can run:
- The log input phase in a subtask
- Snap, reset space, restore, and merge phases in parallel with log input
- Snap phases for recovery of a multi-data set nonpartitioned index (NPI) in parallel in subtasks

**Performance improvements for IMPORT**

Starting with this release, NGT Recover can skip unchanged index partitions when using the IMPORT command.
Requirement for consistent use of INDEP OUTSPACE

NGT Recover requires consistent use of the INDEP OUTSPACE option across all commands; if you use INDEP OUTSPACE with one command, you must use it with all other commands that support it.

If you use INDEP OUTSPACE but subsequently omit it from another command that supports it, NGT Recover issues an error message.

Improved data set preallocation

This release increases the number of data spaces that NGT Recover can preallocate before the main task selects them for processing. This enhancement can reduce the total elapsed processing time, especially when you have many partitions or many small spaces.

Recovery of archive tables

You can now use the ARCHIVE keyword after the AUX option to recover archive tables.

Forward recovery of indexes to a timestamp

NGT Recover can now perform a forward recovery of indexes to a timestamp by using the RECOVER INDEX command with OPTION RECOVERYPOINT.

Recovery to a point in time before materializing changes

Starting with this release, you can recover a partition-by-growth universal table space (PBG UTS) to a point in time (PIT) that precedes the materialization of certain table space attributes (SEGSIZE, DSSIZE, PGSIZE, and MEMBER CLUSTER).

REBUILD INDEX SHRLEVEL CHANGE supports indexes in rebuild pending status

You can now use the SHRLEVEL CHANGE option for indexes in RBDP or PSRBD status and VCAT-defined table spaces.

Removal of restrictions on recovery simulation

This release now supports recovery simulation of:
- Recovery from Instant Snapshot copies
- BACKOUT recovery
Access to the SYSLGRNX table if you are using IBM DB2 Version 10

NGT Recover no longer supports indirect access to the SYSIBM.SYSLGRNX table but supports direct access as follows:

- **If you are using DB2 Version 10**, ensure that CATMAINT has been executed for IBM APARs PM35190 and PM55333. These APARs define the SYSLGRNX table in the DB2 catalog. With the APARs applied, NGT Recover can access SYSLGRNX directly via the DB2 catalog.

- **If you are using DB2 Version 11 or later**, you have direct access to SYSLGRNX; starting with Version 11, DB2 automatically defines SYSLGRNX in the DB2 catalog.

**SCOPE, RECOVERSCOPE, and REBUILDSCOPE options**

This release adds the RECOVERSCOPE and REBUILDSCOPE options to the OPTIONS command, and the SCOPE option to the RECOVER and REBUILD commands.

The following SCOPE options enable NGT Recover to bypass objects based on specified criteria:

- **SCOPE UPDATED** bypasses spaces that have not changed since a specified recovery point. This option is available for all RECOVER and SIMRCVR commands. NGT Recover uses SCOPE UPDATED by default for local site forward recovery to a point in time.

- **SCOPE ALL** recovers all specified spaces.

- **SCOPE STATUS** *(status1, status2,...)* selects objects for processing based on their specified statuses. This option is available for RECOVER TABLESPACE, RECOVER INDEX, and RECOVER OBJECTSET commands.

- **SCOPE PENDING** processes only indexes in a RBDP, PSRBD, RBDP*, or RECP status. This option is available for RECOVER INDEX and REBUILD INDEX commands.

The RECOVERSCOPE and REBUILDSCOPE option settings are the same as the SCOPE option settings.
New &PART4 symbolic variable

You can use a new symbolic variable, &PART4, to generate partitions for data set allocation. You can use &PART4 for any data set.

Substrings of symbolic variables

You can use the following substrings of symbolic variables in data set names specified by OUTCOPYDSN, RECOVERYDSN, and INCOPY MODEL `dataSetName`:

- &DB(s,l)
- &TS(s,l)
- &USERID(s,l)
- &USER(s,l)
- &UID(s,l)

The `s` variable represents the substring and the `l` variable represents the length.

Subgroup name attachment

NGT Recover now allows you to specify a subgroup name for the IBM DB2 subsystem identifier (ssid).

Object set management in BMC Workbench

The BMC Workbench for DB2 product now enables you to manage object sets, which are used by the RECOVERY MANAGER and DASD MANAGER PLUS products, and by certain NGT utilities.

**Note**

In BMC Workbench, you can edit only object sets that were created by using BMC Workbench. However, you can resolve, copy, and view object sets from all sources.

For more information, view the Quick Course "Workbench for DB2 - Managing object sets," the BMC Workbench for DB2 User Guide, and the BMC Workbench online Help.

Users who have a license for any of the following simplified solutions can access and use BMC Workbench to manage object sets:

- BMC High Speed Utilities for DB2
- BMC Object Administration for DB2
- BMC Recovery for DB2
- BMC Performance for DB2SQL
- BMC Performance for DB2 Databases
Next Generation Technology Reorg for DB2 for z/OS (NGT Reorg), version 12.1.00

Version 12.1.00 of NGT Reorg includes the following changes.

**Note**

This version also includes the common NGT utility changes described in “Common changes for selected NGT utility products” on page 3.

### Archive tables

NGT Reorg now supports archive tables unless you specify the DISCARD option.

### DSSIZE

In most cases, NGT Reorg now supports DSSIZE values greater than 64 GB. For more information, see the BMC Next Generation Technology Reorg for DB2 for z/OS Reference Manual.

### XML data

NGT Reorg now supports XML data. NGT Reorg reorganizes XML table spaces and their base table spaces independently of each other. For more information, see the BMC Next Generation Technology Reorg for DB2 for z/OS Reference Manual.

**Note**

At the time of this release, support for XML in NGT Reorg has been disabled. For more information, see “Known issue” on page 22.

### Dynamic allocation of data sets

The NGT Load, NGT Unload, and NGT Reorg products now enable you to use the NGT OUTPUT command to dynamically allocate certain data sets.

In addition to this new command, you can use the new utility parameter +OVERRIDEOUTPUT. This parameter enables you to specify whether to dynamically allocate data sets by using the OUTPUT command or by using the appropriate automation control point.
For syntax information about the OUTPUT command and the +OVERRIDEOUTPUT parameter, see the *BMC Next Generation Technology General User Guide*. For information about which data sets you can allocate with the OUTPUT command, see the reference manuals for the individual products.

**Object sets**

NGT Reorg and NGT Stats now enable you to operate on object sets that you have defined by using the BMC DASD MANAGER PLUS for DB2 product or the BMC Workbench for DB2 product.

For more information, including the syntax to use to take advantage of object sets, see the *BMC Next Generation Technology Reorg for DB2 for z/OS Reference Manual* and the *BMC Next Generation Technology Stats for DB2 for z/OS Reference Manual*.

**DSNUTILB**

NGT Reorg invokes DSNUTILB when needed to support objects and conditions that it does not support natively.

To enable this support, you must ensure that the NGT utilities parameter +DSNUTILB is set to YES. NGT Reorg also enables you to specify certain options that the IBM DB2 REORG utility can use when NGT Reorg invokes DSNUTILB. For more information, see the *BMC Next Generation Technology Reorg for DB2 for z/OS Reference Manual*.

**Partition rebalancing**

NGT Reorg now supports rebalancing partitions by altering limit keys during the reorganization job.

Partition rebalancing can be accomplished in one of the following ways:

- NGT Reorg automatically materializes any pending limit key changes. (The new +DBNAME parameter must be included in your RRGPARMS.)

- You can provide ALTER statements to make limit key changes. If you supply a DDLIN data set with these ALTER statements, NGT Reorg processes them during the reorganization.

- You can specify the REBALANCE option to have NGT Reorg determine the new limit keys.

NGT Reorg recognizes the following new optional DD types for partition rebalancing:
DDLIN enables you to supply ALTER statements to update limit keys during the reorganization.

PARTSDDL contains DDL to enable you to create the table space, tables, and indexes that you are reorganizing.

REPBPLDAL contains ALTER statements that reflect the new keys following the rebalance operation.

For more information, including restrictions, see the following information in the BMC Next Generation Technology Reorg for DB2 for z/OS Reference Manual:

- Partition rebalancing and pending limit key changes topics in Chapter 2
- DDLIN, PARTSDDL, and REPBPLDAL DD statement descriptions in Chapter 3
- DDLIN and REBALANCE option descriptions in Chapter 3

**SNAPSHOT UPGRADE FEATURE of XBM, version 6.2.01**

Version 6.2.01 of the EXTENDED BUFFER MANAGER (XBM) for DB2 product and its SNAPSHOT UPGRADE FEATURE technology include the following changes.

**Support for the 64-bit I/O interface to IBM Media Manager**

XBM can now use the IBM Media Manager tool via the 64-bit I/O interface that is available if you are running Version 2.1 or later of the IBM z/OS system.

This feature is needed to enable XBM to support IBM DB2 Version 12.x.xxx (that is, all function levels of DB2 Version 12). This does not affect your use of earlier versions of DB2; XBM continues to support these versions.

BMC made this feature available via PTF BPE0456 that accompanied a small program enhancement (SPE) in October 2016.

**Next Generation Technology Unload for DB2 for z/OS (NGT Unload), version 12.1.00**

Version 12.1.00 of NGT Unload includes the following changes.

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**Note**

This version also includes the common NGT utility changes described in “Common changes for selected NGT utility products” on page 3.
Cabinet copies

NGT Unload now enables you to unload from cabinet copies that have been created by the BMC Recovery Management for DB2 solution or the BMC Recovery for DB2 solution.

To unload from a cabinet copy, specify INFILE IMAGECOPY on the UNLOAD command. For more information about this option, see the BMC Next Generation Technology Unload for DB2 for z/OS Reference Manual.

Note
This release adds the UNLOAD command to NGT Unload. For more information, see “UNLOAD command” on page 20.

Unloading from a table space

NGT Unload now enables you to unload all supported data from all tables of a table space by using a single command.

To unload a table space, specify TABLESPACE on the UNLOAD command. For more information about this option, see the BMC Next Generation Technology Unload for DB2 for z/OS Reference Manual.

Note
This release adds the UNLOAD command to NGT Unload. For more information, see “UNLOAD command” on page 20.

Field specification for an output record

NGT Unload now enables you to define your output records by including a field specification on your syntax statement.

To include this specification, use the INTO option on the UNLOAD command. For more information about this option, see the BMC Next Generation Technology Unload for DB2 for z/OS Reference Manual.

Note
This release adds the UNLOAD command to NGT Unload. For more information, see “UNLOAD command” on page 20.
LOB data

You can now unload a LOB auxiliary table and its base table at the same time without an NGT LOBMaster license.

NGT Unload enables this support by adding the SPANNED YES command option. This option tells NGT Unload to unload your data in spanned record format. For more information about this option, see the *BMC Next Generation Technology Unload for DB2 for z/OS Reference Manual*.

BMC provided this enhancement for version 11.2 via the BMC PTF BPU8352.

Dynamic allocation of data sets

The NGT Load, NGT Unload, and NGT Reorg products now enable you to use the NGT OUTPUT command to dynamically allocate certain data sets.

In addition to this new command, you can use the new utility parameter +OVERRIDEOUTPUT. This parameter enables you to specify whether to dynamically allocate data sets by using the OUTPUT command or by using the appropriate automation control point.

For syntax information about the OUTPUT command and the +OVERRIDEOUTPUT parameter, see the *BMC Next Generation Technology General User Guide*. For information about which data sets you can allocate with the OUTPUT command, see the reference manuals for the individual products.

UNLOAD command

This release adds the UNLOAD command to NGT Unload. This command provides the following options that were available with the BMC UNLOAD PLUS for DB2 product:

<table>
<thead>
<tr>
<th>Option</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTOTAG</td>
<td>Adds a four-byte character constant value at the beginning of each output record</td>
</tr>
<tr>
<td>CNTLCARDS</td>
<td>Indicates the type of control statements to write to the SYSCNTL data set</td>
</tr>
<tr>
<td>CNTLDDN</td>
<td>Overrides the default DD name or default DD name prefix of the data set that contains generated control statements</td>
</tr>
<tr>
<td>DELETEFILES</td>
<td>Specifies whether to delete SYSREC and SORTWK files when the unload is unsuccessful</td>
</tr>
<tr>
<td>DISCARDS</td>
<td>Defines a limit on the number of records to discard</td>
</tr>
<tr>
<td>DRAIN_WAIT</td>
<td>Specifies the drain timeout value to use</td>
</tr>
<tr>
<td>Option</td>
<td>Brief description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ESTROWS</td>
<td>Indicates the number of rows that you expect to unload based on the SELECT statement</td>
</tr>
<tr>
<td>FILL</td>
<td>Specifies whether to fill numeric external fields with zeros when converting numeric columns to their external representations</td>
</tr>
<tr>
<td>FILTERPART</td>
<td>Specifies whether to filter out partitions that do not meet the WHERE clause criteria when you use the first column of the partitioning key in your WHERE clause</td>
</tr>
<tr>
<td>FIXEDVARCHAR</td>
<td>Specifies whether to unload variable column values as variable-length or fixed-length fields when you do not explicitly specify a field type</td>
</tr>
<tr>
<td>INFILE</td>
<td>Unloads from copy data sets, including cabinet copies that have been created by the BMC Recovery for DB2 solution</td>
</tr>
<tr>
<td>INTO</td>
<td>Defines your output records by including a field specification</td>
</tr>
<tr>
<td>LIMIT</td>
<td>Defines a limit on the number of records selected from each table or partition of the table space</td>
</tr>
<tr>
<td>NOSUBS</td>
<td>Tells NGT Unload to not accept substitution characters during CCSID translation</td>
</tr>
<tr>
<td>NULLTYPE</td>
<td>Specifies the location and length of the null indicator field in the output record</td>
</tr>
<tr>
<td>ON FAILURE</td>
<td>Specifies how to handle an abnormal termination</td>
</tr>
<tr>
<td>ORDER</td>
<td>Specifies whether to sort the output records</td>
</tr>
<tr>
<td>RECORDID</td>
<td>Specifies a record identifier for each output record of a SELECT statement</td>
</tr>
<tr>
<td>RETRY</td>
<td>Specifies the maximum number of times to attempt to obtain a drain before terminating</td>
</tr>
<tr>
<td>RETRY_DELAY</td>
<td>Specifies the minimum number of seconds to wait after a drain timeout before trying again</td>
</tr>
<tr>
<td>TABLESPACE</td>
<td>Unloads all supported data from a table space with a single command</td>
</tr>
<tr>
<td>UNLOADDN</td>
<td>Specifies the default DD name, DD name prefix, or output descriptor for unload output data sets</td>
</tr>
<tr>
<td>ZONEDDECOVP</td>
<td>Assigns overpunch values to decimal-zoned numeric values</td>
</tr>
</tbody>
</table>

For more information, see the *BMC Next Generation Technology Unload for DB2 for z/OS Reference Manual*. This reference manual includes syntax diagrams and descriptions for both the UNLOAD and UNLD commands.

**Note**

UNLOAD is the preferred command for NGT Unload. BMC will make no more enhancements to the UNLD command and plans to deprecate it in a future release.
**FORMAT option**

The NGT Unload UNLD command no longer supports FORMAT ARCHIVE and FORMAT REPORT.

**Known issue**

NGT Reorg currently terminates with message NGTB097 when you attempt to reorganize one of the following objects:

- An XML table space
- A document ID (DOCID) index
- A user-defined (XPATH) XML index

A future PTF will enable this functionality. After you apply this PTF, NGT Reorg will no longer issue the indicated message.

**Installation, maintenance, and migration**

You install NGT Utility Suite Accelerator by using the Installation System.

**Installing the Installation System or a product**

The Installation System is installed and maintained by using SMP/E. Installing the Installation System creates the required SMP/E environment. Use the following procedures to install the Installation System or products.

**Before you begin**

If you need more information, see these sources:

- For software, hardware, and other requirements, see the Installation System documentation.
- For information about installation changes, see the Installation System release notes.
If you prefer physical installation media instead of downloaded images, request physical media from your BMC sales representative. Contact information is available on the BMC website.

**To install the Installation System**

1. Review the most recent Installation System release notes on any product page from the A-Z Supported Product List on Support Central.


3. Click **Installation System**.

4. Click the method you want to use to obtain the Installation System, and follow the provided procedures.

   **WARNING**
   The Installation System must be installed into its own SMP/E zone. You should not install anything else into this zone.

**To install a product**

1. Ensure that you have the most recent version of the Installation System installed and that it has any required PTFs applied.
   
   To determine the most recent version number, see the most recent Installation System release notes on any product page from the A-Z Supported Product List on Support Central. To determine the version number of your current Installation System, see the title line on the Installation System Main Menu. Required PTFs are announced in technical bulletins.

2. Start the Installation System.

3. Follow the on-screen prompts.
   
   For more information, see the Installation System documentation.

**Maintaining the Installation System or a product**

Use the following procedures to maintain the Installation System or products.
**Note**

BMC provides fixes for the NGT Utility Suite Accelerator solution at the component level. To apply fixes for this solution, you must apply fixes for each component of the solution.

---

**To maintain the Installation System**

1. Perform one of the following actions:
   - If you have the most recent version of the Installation System installed, apply any required PTFs.
   - Install the most recent version of the Installation System, and apply any required PTFs.

   To determine the most recent version number, see the most recent Installation System release notes on any product page from the A-Z Supported Product List on Support Central. To determine the version number of your current Installation System, see the title line on the Installation System Main Menu. Required PTFs are announced in technical bulletins.

2. Refresh the Installation System runtime data sets by running the $205RTEC and $206RTEC jobs (in order).

3. Restart the Installation System.

**To maintain a product**

1. Check Support Central for product notices, such as technical bulletins about fixes and Recommended Service Level (RSL) availability.

2. Use BMC ISR (recommended) to obtain product PTFs and RSLs.

3. Run the $176APLF installation job to ensure that all required FMIDs are applied.

4. Apply the product maintenance to the product's SMP/E environment.
   - For more information, see *Installation System Reference Manual*.

---

**FMID and version information**

The NGT Utility Suite Accelerator solution uses version 3.1.00 (or more recent) of the Installation System.
Always use the most recent version of the Installation System and ensure that it has any required PTFs applied.

To determine the most recent version number, see the most recent Installation System release notes on any product page from the A-Z Supported Product List on Support Central. To determine the version number of your current Installation System, see the title line on the Installation System Main Menu. Required PTFs are announced in technical bulletins.

Installation installs the following versions and SMP/E FMIDs:

<table>
<thead>
<tr>
<th>FMID</th>
<th>Product or component</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASAR71C</td>
<td>SAS_C and SAS_C++ V71</td>
<td>7.1.00</td>
</tr>
<tr>
<td>BBASC70</td>
<td>SAS_C V70B</td>
<td>7.0.00</td>
</tr>
<tr>
<td>ZACPC10</td>
<td>BMC NGT COPY for DB2</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZAFRC10</td>
<td>NGT RECOVER for DB2</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZAIN031</td>
<td>Install Execution Code</td>
<td>3.1.00</td>
</tr>
<tr>
<td>ZATSC10</td>
<td>BMCSTATS API</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZAUP241</td>
<td>BMCSORT</td>
<td>2.4.01</td>
</tr>
<tr>
<td>ZBMRI5E</td>
<td>ISR External Routines</td>
<td>1.5.00</td>
</tr>
<tr>
<td>ZBST100</td>
<td>BMC Support Tool</td>
<td>1.0.00</td>
</tr>
<tr>
<td>ZDIG1A0</td>
<td>DIGNUS C runtimes and C++ objects</td>
<td>10.1.00</td>
</tr>
<tr>
<td>ZDIG190</td>
<td>Dignus C runtimes and C++ objects</td>
<td>1.9.00</td>
</tr>
<tr>
<td>ZNGTC10</td>
<td>NEXT GENERATION TECHNOLOGY</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZPWD330</td>
<td>BMC Password Security System</td>
<td>3.3.00</td>
</tr>
<tr>
<td>ZSCCC10</td>
<td>DB2 Solution Common Code</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZXBM620</td>
<td>Extended Buffer Manager</td>
<td>6.2.00</td>
</tr>
<tr>
<td>ZZIOC10</td>
<td>DB2 Options Carryover</td>
<td>12.1.00</td>
</tr>
</tbody>
</table>

The preceding table contains the FMIDs for NGT Utility Suite Accelerator only. You can also obtain product, solution, and component information (FMIDs, codes, and versions) in the following ways:

- View the generated installation JCL member $176APLF.
  To search the file, search on the word `FORFMID`.

- View one of the following reports:
  - Optimization products, common products, and common components
— BMC products for IBM DB2
— BMC products for IBM IMS
— MainView products

To access the reports on Support Central, take the following steps:

2. Click Product codes and FMIDs.
3. Click one of the listed reports.

Migration considerations for SNAPSHOT UPGRADE FEATURE

XBM and its SNAPSHOT UPGRADE FEATURE tolerate interoperation between two consecutive releases (for example, 6.1 and 6.2 (or 6.2.01)) for migration purposes.

The following considerations apply to this toleration:

■ When operating in a mixed environment, do not attempt to use features that have been added in the latest release. If XBM sends these requests to a subsystem that is using the previous release of XBM, XBM might abend.

■ Do not operate long term in a mixed environment. BMC recommends that you migrate your entire environment as soon as you can.

■ BMC provides limited support for interoperability problems.

For migration from XBM 6.1 to 6.2.00 or 6.2.01, complete the following steps:

1. Install PTF BPE0440 into the XBM 6.1 load library and restart the XBM 6.1 systems as soon as possible.

   After installing this PTF, if XBM 6.1 encounters a request for an XBM 6.2 feature, XBM fails gracefully instead of abending.

2. Ensure that all maintenance has been applied for both releases of XBM.

3. For each XBM in a sysplex group, complete the following steps:

   a. If active snapshots exist, bring XBM 6.2.00 or 6.2.01 into the XBM sysplex group on each system before you stop the XBM on that system.
b Start the updated XBM 6.2 system. Active snapshots will be synchronized with the new XBM version.

c Stop XBM 6.1 on that system.

Support status

You can find the support status for specific product versions on the Support Central website. Selecting a product from the “A – Z Supported Product List” shows:

- All versions of the product and their current support levels (full or limited)
- Dates on which support ends

For more information about the latest support policies, see the Support Central website at http://www.bmc.com/support.

Product documentation

From the Support Central website (http://www.bmc.com/support), you can:

- Link to the BMC Documentation Center to browse documentation sets (http://www.bmc.com/available/documentation-center.html or, for secured documentation sets, http://www.bmc.com/available/documentation-center-secure.html)

- View Quick Course videos (short overviews of selected product concepts, tasks, or features), which are available from the following locations:
  - Documentation Center (primary center and secured center)
  - Support Central (at http://www.bmc.com/support/mainframe-demonstrations)
  - BMC Mainframe YouTube channel (https://www.youtube.com/user/BMCSoftwareMainframe)

- View individual product documents (books and notices) within the “A – Z Supported Product List” (https://webapps.bmc.com/support/faces/az/supportlisting.jsp)
You can order hardcopy documentation from your BMC sales representative or from the support site. You can also subscribe to proactive alerts to receive e-mail messages when notices are issued.

Customer support

If you have problems with or questions about a BMC product, see the support website at http://www.bmc.com/support. You can view or download product documents, find answers to frequently asked questions, and download products and maintenance. If you do not have access to the web and you are in the United States or Canada, contact Customer Support at 1 800 537 1813. Outside the United States or Canada, contact your local BMC office or agent.

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