BMC is releasing version 12.1.00 of the NGT Recover for DB2 product.

NGT Recover is available as a stand-alone product and as a component of the following solutions:

- BMC Recovery for DB2
- BMC High Speed Utilities for DB2
- BMC Recovery Management for DB2

**Note**

Before you begin installation, BMC recommends that you check the Support Central website at [http://www.bmc.com/support](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
RECOVER PLUS for DB2 name change ................................................................. 2
COPY PLUS for DB2 name change ................................................................. 2
Support for IBM DB2 Version 12 ................................................................. 3
Support for R+/CHANGE ACCUM on IBM DB2 Version 12 ................................................................. 3
Additional zIIP offload ................................................................. 3
Performance improvements for REBUILD INDEX ................................................................. 3
Recovery performance improvements ................................................................. 4
Performance improvements for IMPORT ................................................................. 4
Requirement for consistent use of INDEP OUTSPACE ................................................................. 4
Improved data set preallocation ................................................................. 4
Recovery of archive tables ................................................................. 4
What's new

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

For a short video describing what’s new in this release, see http://www.bmc.com/support. In the BMC Documentation Center, you can access videos via Quick Course Library in the Contents pane on the left.

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.

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.
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

This includes support for:

- Table spaces defined with PAGENUM RELATIVE
- The recovery of compressed LOBs
- Active logs with a capacity greater than 4 GB
- Column-level CCSID specification
- The fast insert algorithm (INSERT ALGORITHM 2)

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
- LOGONLY or LOGAPPLY SCANONLY
- INLINE image copies

Access to the SYSGLRNX 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** \((status1, status2,\ldots)\) 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)
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 DB2 SQL
- BMC Performance for DB2 Databases
- BMC Utility Management for DB2
- BMC Large Object Management for DB2
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.

Installation and maintenance

You install NGT Recover 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.

2 Go to http://www.bmc.com/support/downloads-patches/mainframe-installation.html, or select Mainframe Installation from the Downloads & Products menu 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 NGT Recover 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

NGT Recover uses version 3.1.00 (or more recent) of the Installation System.

Note

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>71</td>
</tr>
<tr>
<td>BBASC70</td>
<td>SAS_C V70B</td>
<td>70</td>
</tr>
<tr>
<td>ZAFRC10</td>
<td>BMC NGT RECOVER for DB2</td>
<td>C1</td>
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<tr>
<td>ZAIN031</td>
<td>Install Execution Code</td>
<td>31</td>
</tr>
<tr>
<td>ZAUP241</td>
<td>BMCSORT</td>
<td>24</td>
</tr>
<tr>
<td>ZBMR15E</td>
<td>ISR External Routines</td>
<td>15</td>
</tr>
<tr>
<td>ZBST100</td>
<td>BMC Support Tool</td>
<td>10</td>
</tr>
<tr>
<td>ZDIG1A0</td>
<td>DIGNUS C runtimes and C++ objects</td>
<td>1A</td>
</tr>
<tr>
<td>ZDIG190</td>
<td>Dignus C runtimes and c++ objects</td>
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<td>ZPWD330</td>
<td>BMC Password Security System</td>
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<td>ZSCCC10</td>
<td>Solution Common Code</td>
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</tr>
<tr>
<td>ZZIOC10</td>
<td>DB2 Options Carryover</td>
<td>C1</td>
</tr>
</tbody>
</table>

The preceding table contains the FMIDs for NGT Recover 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.
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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