BMC Software is releasing version 10.1.00 of the RECOVER PLUS for DB2® product.

RECOVER PLUS is also a component of the following BMC solutions:

- Administrative Assistant for DB2
- Database Administration for DB2
- Recovery Management for DB2

**NOTE**
Before you begin installation, BMC recommends that you check the Customer Support 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 (PAC) data

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

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What’s new

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

DB2 Version 10 support

RECOVER PLUS supports the following DB2 Version 10 features and changes:

■ auto-compression (compress on INSERT)

■ catalog changes and restructuring

■ DEFINE NO LOB and XML spaces

■ new DBA authorities system DBADM and DATAACCESS

RECOVER PLUS now checks for system DBADM and DATAACCESS authorities prior to execution.

System DBADM and DATAACCESS are added to the list of accepted authorities.

■ IBM® FlashCopy® image copies

RECOVER PLUS can use IBM FlashCopy image copies as a recovery resource (similar to BMC Snapshot copies). RECOVER PLUS processes FlashCopy image copies during the RECOVER PLUS SNAP phase:

— processes a consistent FlashCopy in the same way as a BMC Online Consistent Copy

— processes an inconsistent FlashCopy as a SHRLEVEL CHANGE copy
— processes sequential copies created from a consistent FlashCopy in the same way as sequential BMC Online Consistent Copies

— processes sequential copies created from an inconsistent FlashCopy as SHRLEVEL CHANGE copies

The OPTION RESOURCE SELECTION COPIES FC syntax supports FlashCopy. FlashCopy is also supported in the installation options LOCSCPSEL and REMCPSEL by using the FC parameter. The default processing order for local copies is FC, LP, LB. The default processing order for remote copies is RP, RB, FC.

This release adds the FLASHCOPY option to the non-registered copy or INLOG specification with INCOPY FULL. Also, updates to the DSNAME description of the INCOPY specification accommodate FlashCopy support.

■ hash access to data

RECOVER PLUS recovers table spaces with hashing access enabled and supports new log records and page types that are defined for hashing. When RECOVER PLUS recovers a hashed table space to a point-in-time prior to the point when hashing was enabled, the table space is placed in advisory REORG-pending (AREOR) status; the hash overflow index is placed in REBUILD-pending (RBDP) status. RECOVER PLUS also supports a REBUILD of the hash overflow index.

■ include columns or additional non-key columns in unique indexes

■ inline LOBs

■ segmented MEMBER CLUSTER for universal table spaces (UTSs)

■ pending definition changes (pending ALTERs)

RECOVER PLUS supports the new SYSIBM.SYSCOPY entries that this feature generates.

■ 64-bit runtime

■ skip-level migration

RECOVER PLUS supports migrating to DB2 Version 10 from DB2 Version 8, which introduces several new migration modes:
greater timestamp precision (extends microseconds to 12 places, but 6 remains the default)

TIMESTAMP WITH TIME ZONE data type

archive logs and sequential image copy data sets in the cylinder-managed portion of extended address volumes (EAVs)

RECOVER PLUS can process archive logs and sequential image copy data sets that have been written to the cylinder-managed portion of EAVs.

RECOVER PLUS can also write output image copies with the EAV attribute. To support this capability, EATTR has been added to the OUTPUT command; EATTR, STORCLAS, and DATAACLAS have been added to the installation options.

**NOTE**
For IBM z/OS® versions earlier than 1.11, you must set the EATTR option to NONE.

If an image copy was written to the cylinder-managed portion of an EAV under z/OS Version 1.11, you cannot use that image copy on z/OS Version 1.10; Version 1.10 does not support sequential data sets in the cylinder-managed portion of an EAV.

last or currently committed data

RECOVER PLUS supports the new log records that this feature generates.
temporal tables

To support temporal tables, RECOVER PLUS adds the HISTORY keyword to the AUX installation option. Using this keyword includes history spaces when a table space with system-maintained temporal tables is specified in SYSIN. You can also specify AUX HISTORY at runtime (and override the installation option value) on the following RECOVER PLUS commands:

—OPTIONS
—RECOVER TABLESPACE
—RECOVER INDEX(ALL) TABLESPACE
—REBUILD INDEX(ALL) TABLESPACE
—LOGSCAN TABLESPACE
—LOGSCAN INDEX(ALL) TABLESPACE

Similar to DB2 RECOVER Version 10 VERIFYSET NO behavior, RECOVER PLUS does not determine whether

— the system-maintained temporal space and the history space are recovered as a set
— the system-maintained temporal space and the history space are recovered to the same log point
— all DSNUMs are recovered in the same SYSIN

XML multi-versioning

XML indexes that are created with DATE and TIMESTAMP data

RECOVER PLUS supports recovering and rebuilding XML user-defined indexes that are created with the AS SQL DATE and AS SQL TIMESTAMP options.

**XBM zIIP redirection support**

RECOVER PLUS now provides the option to offload eligible processing to an IBM System z® Integrated Information Processor (zIIP). To enable and use zIIP processing, you must have an installed and authorized version of the EXTENDED BUFFER MANAGER (XBM) product or the SNAPSHOT UPGRADE FEATURE (SUF) technology.

**NOTE**

Note the following XBM or SUF requirements:

— The minimum version of XBM or SUF is 5.6.00 with PTF BPE0313.
— To enable DB2 Version 10 support, XBM and SUF require PTF BPE0311.
The following installation and command options apply to this feature:

- The new ZIIP command on the OPTIONS statement and the ZIIP installation option enable this functionality.
- You can also use the existing XBMID installation or command option to specify an XBM subsystem through which to access this functionality.

For more information about the XBM component that enables the use of zIIPs, see the EXTENDED BUFFER MANAGER and SNAPSHOT UPGRADE FEATURE User Guide.

### Versioned, compressed indexes support

For versioned, compressed indexes, you must recover all of the data sets in the same step.

### COMPRESSED option

RECOVER PLUS adds the COMPRESSED option to the INCOPY clause of the RECOVER command. The COMPRESSED option allows you to indicate whether image copies of compressed indexes are compressed copies.

### Indexes on expression

RECOVER PLUS provides native support for some indexes on expression with REBUILD INDEX.

### Log sort estimates

RECOVER PLUS improves log sort estimates for multitasking.
OBIDXLAT improvements

RECOVER PLUS has improved OBIDXLAT processing for recovering one data set of a multi-data-set, nonpartitioned space.

RECOVER PLUS now translates to the target OBID, regardless of the source OBID, when the following conditions exist:

- The header page is not available.
- The object is an index or a single-table table space.
- No OBIDs are specified.

In earlier versions, OBIDXLAT processing failed.

Also, RECOVER PLUS no longer attempts to read the header pages from the 2nd - n data sets of multi-data-set, nonpartitioned spaces.

OBIDXLAT with OBJECTSET

RECOVER PLUS now allows OBIDXLAT with OBJECTSET.

USEHRDOBIDS option

RECOVER PLUS adds the USEHRDOBIDS option on the OPTIONS command and as an installation option. USEHRDOBIDS indicates whether to use the OBIDs in the header page for MERGE phase optimization and checking (comparing the source image copy header page OBIDs to the data page OBIDs). The default value is YES.

NOCOPYPEND option

RECOVER PLUS adds the NOCOPYPEND option to REBUILD INDEX to reset the ICOPY status on COPY YES indexes.

DSNUM begin:end and PART begin:end

RECOVER PLUS removes the requirement for spaces on either side of the colon for DSNUM begin:end and PART begin:end syntax.
NUMREC changes for key sorts

For key sorts only, RECOVER PLUS has changed some NUMREC parameters for REBUILD INDEX and RECOVER UNLOADKEYS:

- For NUMREC CALC, RECOVER PLUS uses a minimum estimate of 400,000 for each index key sort (or 200,000 if the key length is greater than 1000 characters).
- For NUMREC NOEST, RECOVER PLUS passes an estimate of 400,000 to each index key sort (or 200,000 if the key length is greater than 1000 characters).
- For NUMREC EST integer, if the specified estimate is less than 400,000 (200,000 for keys with a length greater than 1000 characters), RECOVER PLUS uses an estimate of 400,000 (or 200,000 if the key length is greater than 1000 characters).

Real-time statistics for index keys

RECOVER PLUS uses real-time statistics (RTS) to estimate the number of keys for each index. When the following conditions are met, RECOVER PLUS uses the TOTALROWS value from table SYSIBM.SYSTABLESPACESTATS for single-table table spaces:

- You are using DB2 Version 9 or later.
- UTSORTAL is set to YES.

**NOTE**

If you perform a migration, TOTALROWS might not be accurate. If it is not accurate after the migration, you must reset TOTALROWS to NULL. However, resetting TOTALROWS is usually unnecessary in the following situations:

- if you migrate data daily and the size of the space does not change significantly
- if you include the real-time statistics tables in your migration

OBJECTSET syntax diagram correction

OBJECTSET syntax diagrams throughout the *RECOVER PLUS for DB2 Reference Manual* have been corrected. The recursive arrow and the comma that indicated that multiple OBJECTSET creator.name specifications are valid in a single clause have been removed. Only one OBJECTSET creator.name specification is valid in a single clause.
BMC no longer supports the BMCDSN Command Processor and will not provide additional fixes or enhancements for existing versions of BMCDSN. The current version of BMCDSN (version 2.4.00) is available on the BMC product installation tapes and ESD files that are released with this version of RECOVER PLUS. However, installation media dated later than April 2011 will not include BMCDSN.

You can choose from the following alternatives to obtain some of the functionality that BMCDSN currently performs:

- Continue to use your existing version of BMCDSN.
- Use a sample customizable REXX program that BMC is providing.
- In an online environment, use the BMC CATALOG MANAGER for DB2 product.

For more information about these alternatives, see the BMCDSN technical bulletin dated April 8, 2011.

**Installation**


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**NOTE**

To request physical shipments, contact your BMC sales representative. Contact information is available on the BMC website.

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RECOVER PLUS is installed by using the BMC Installation System. This section contains installation information that supplements or supersedes the information in the *Backup and Recovery Products for DB2 Installation Guide*.
Known installation issues

This section describes installation issues that remain open in this release.

DB2 Version 10 security parameter

If both of the following conditions exist at your site, contact BMC Customer Support before attempting to use the Installation System to customize your BMC products:

- Your subsystem is using DB2 Version 10.
- The DSNZPARM SEPARATE_SECURITY subsystem parameter is set to YES.

DB2 Product Configuration component

The name of the BMC Product Management (BPM) component is changing to the DB2 Product Configuration component (FMID ZLGCxxx). Documentation for the April 2011 release reflects the name change. A future release of the Installation System will replace BPM with DB2 Product Configuration in the installation panels and associated Help.

FMIDSETs

For products that contain the ZDIG190 FMID as part of an FMIDSET, attempting to run an apply check job ($B75APCF or $B80APCP) or an apply job ($B76APLF or $B81APLP) might result in the following errors:

GIM24801S ** NO SYSMODS SATISFIED THE OPERANDS SPECIFIED ON THE APPLY COMMAND.  
GIM20501I  APPLY PROCESSING IS COMPLETE. THE HIGHEST RETURN CODE WAS 12.

To address this issue, take the appropriate action as follows:

- If you have not yet generated the installation ($B) jobs, ensure that the Create FMIDSETs field on the Data Set Options panel is set to No (the default) before proceeding.

- If you have already generated the installation jobs and received the specified error, run the #D9 jobs to delete the data sets, and regenerate the JCL by using FMIDs instead of FMIDSETs.

BMC plans to correct this issue in the next release of the Installation System.
Installation changes

The Installation System includes the following changes:

- The Product Customization menus accommodate new features, such as the DB2 Product Configuration technology, the DB2 Component Services (DBC), and the Next Generation Logger (NGL). Some MainView products and the System and SQL Performance products use this technology.

- You can use a new feature, BMC Internet Service Retrieval (ISR). BMC ISR identifies and applies fixes to all products that you install via the Installation System. For more information, see Chapter 7, “Applying maintenance” in the Backup and Recovery Products for DB2 Installation Guide.

Version and FMID information

This release of RECOVER PLUS uses version 2.3.10 of the Installation System and installation media.

NOTE
If you have a later version of the Installation System or the installation media, use that version to install the solution, product, or component.

During installation, the following versions and SMP/E FMIDs are installed:

<table>
<thead>
<tr>
<th>Product or component</th>
<th>Version</th>
<th>FMID</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECOVER PLUS</td>
<td>10.1.00</td>
<td>ZAFRA10</td>
</tr>
<tr>
<td>BMC Password Security System</td>
<td>3.2.00</td>
<td>BBAPW32</td>
</tr>
<tr>
<td>BMCSORT</td>
<td>2.3.01</td>
<td>ZAUP231</td>
</tr>
<tr>
<td>DB2 Solution Common Code (SCC)</td>
<td>10.1.00</td>
<td>ZSCCA10</td>
</tr>
<tr>
<td>Dignus C runtimes and C++ objects</td>
<td>1.9.01</td>
<td>ZDIG190</td>
</tr>
<tr>
<td></td>
<td>1.9.00</td>
<td>ZDIG018</td>
</tr>
<tr>
<td>Install Execution Code (AIN)</td>
<td>3.1.00</td>
<td>ZAIN031</td>
</tr>
<tr>
<td>Option value migration (ZIO)</td>
<td>1.5.00</td>
<td>ZZIO150</td>
</tr>
<tr>
<td>SAS/C Resident Library</td>
<td>7.1.00</td>
<td>ASAR71C</td>
</tr>
</tbody>
</table>
The preceding table contains the FMIDs for RECOVER PLUS only. During installation, view one of the following generated JCL members to see a list of FMIDs for all of the products that you are installing:

- Express installation (JES2): $B90SMPE
- Express installation (JES3): $B91SMPE
- Custom installation: $B76APLF

To search the file, search on the word **FMID**.

**Maintenance**

After you install RECOVER PLUS, you can download any additional SMP/E maintenance by using either BMC Internet Service Retrieval (ISR) or eFix PTF Distribution Services (http://apps.bmc.com/support/efix.cgi). BMC ISR is available for all products that you install via the Installation System. For more information, see your installation guide.

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**NOTE**

Before applying maintenance, ensure that you have completed the appropriate jobs (based on your installation method) to set up your maintenance environment, as follows:

- Custom installation: $B78ACPF and $B83ACCP
- Express installation (JES2): $B90SMPE
- Express installation (JES3): $B90SMPE and $B91SMPE

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**PUT maintenance schedule**

BMC did not deliver first-quarter 2011 PUT maintenance (PUT1101A). Instead, BMC will deliver that maintenance as part of the second-quarter cumulative maintenance in PUT1101B. For information about the PUT delivery schedule, see http://www.bmc.com/support/put-availability-schedule.html.

In the interim, you can use the new BMC Internet Service Retrieval (ISR) feature to identify and apply fixes to all products that you installed via the Installation System. BMC ISR simplifies ordering and retrieving service updates, either on demand or through your scheduler. You can use BMC ISR to inventory your target zones and generate a single request, or schedule a request on a recurring basis to retrieve maintenance updates. For more information, see the maintenance section of your installation guide.

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**NOTE**

If you prefer, you can continue to use eFix PTF Distribution Services to obtain fixes on demand.
Support status

BMC supports the following versions of RECOVER PLUS:

<table>
<thead>
<tr>
<th>Version</th>
<th>Level of support</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1.00</td>
<td>full</td>
</tr>
<tr>
<td>9.2.00</td>
<td>full</td>
</tr>
<tr>
<td>9.1.00</td>
<td>limited</td>
</tr>
<tr>
<td>8.1.00</td>
<td>none</td>
</tr>
</tbody>
</table>

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

Product documentation

BMC provides a documentation CD in product shipments and offers a link to the CD image on the EPD page of the Customer Support website. Individual product documents (books and notices) are also available on the website. You can order hardcopy documentation from your BMC sales representative or from the website. You can also subscribe to proactive alerts to receive e-mail messages when notices are issued or updated.

Customer support

If you have problems with or questions about a BMC product, see the Customer 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 800 537 1813. Outside the United States or Canada, contact your local BMC office or agent.