BMC is releasing version 12.1.00 of the BMC Performance for DB2 SQL solution.

BMC Performance for DB2 SQL includes the following products and technology components:

- Version 12.1.00 of APPTUNE for DB2
- Version 12.1.00 of SQL Explorer for DB2
- Version 12.1.00 of BMC Workbench for DB2

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 and resolved problems.

The following topics are discussed:

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What's new

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

BMC Performance for DB2, version 12.1.00

These topics describe the changes or new features in this release of BMC Performance for DB2SQL.

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

Loading data into the Performance Advisor Database tables

The BMC Next Generation Technology Load for DB2 for z/OS (NGT Load) utility is now the default utility for loading data into the Performance Advisor Database tables if the PADB Starter JCL dialog finds the utility in your environment.

Adoption of new compiler

Performance Advisors, Common Explain, and SQL Explorer are now built with the IBM XL C compiler, which:

- Provides access to the Language Environment runtime routines that IBM z/OS offers
- Enables future improvements in scalability and environmental currency

APPTUNE for DB2, version 12.1.00

These topics describe the changes or new features in this release of the APPTUNE for DB2 product.
Support for IBM DB2 Version 12 batch and online detail reports

This release updates batch and online detail reports to include all of the latest metrics available as of DB2 Version 12.

Support for the latest DB2 Analytics Accelerator metrics

APPTUNE now processes DB2 Analytics Accelerator (DAA) cache information. A new Accelerator Cache Analysis report provides timings and measurements for SQL statement activity at the accelerator level.

New statistics are now available in all APPTUNE Workload Analysis reports in support of Accelerator Only Tables (AOTs).

Commits and rollbacks

APPTUNE now collects statistics on commits and rollbacks.

Reporting by connection type

The APPTUNE product now tracks SQL activity by connection type. Updated reports and panels incorporate the new tracking feature.

In-DB2 timings

The APPTUNE for DB2 product now measures CPU time and elapsed time in DB2 in addition to CPU time and elapsed time in SQL.

Reduced cost of monitoring consecutive fetches

This release features improved processing of SQL FETCH statements. Because of this improvement, the Bypass Fetch Timings filter setting is no longer needed and has been removed.

Adoption of new compiler

Performance Advisors, Common Explain, and SQL Explorer are now built with the IBM XL C compiler, which:

- Provides access to the Language Environment runtime routines that IBM z/OS offers
- Enables future improvements in scalability and environmental currency
Features no longer supported

Version 12.1.00 of SQL Performance no longer supports the following features: DB2 status summary access and reports, and no longer supports exception-only roll-ups.

Removal of DB2 Status summary access and reports from APPTUNE display dialogs

Starting with version 12.1, APPTUNE does not display DB2 status summary access and reports. The MainView for DB2 product displays the status of DB2 subsystems and related metrics. The following table lists APPTUNE reports with their corresponding MainView for DB2 views.

<table>
<thead>
<tr>
<th>APPTUNE report</th>
<th>Description</th>
<th>MainView for DB2 view</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQMACDDDF</td>
<td>Current DDF activity by thread</td>
<td>EZDDDF menu, which provides access to current DDF threads, DDF statistics, active DDF connections, and DDF related ZPARMS</td>
</tr>
<tr>
<td>SQMACDTL</td>
<td>Current thread detail analysis</td>
<td>DUSER&lt;sup&gt;a&lt;/sup&gt; detailed thread data</td>
</tr>
<tr>
<td>SQMACLKH</td>
<td>Current holders of locked object</td>
<td>EZDLOCK&lt;sup&gt;b&lt;/sup&gt; DB2 locking menu</td>
</tr>
<tr>
<td>SQMACLKW</td>
<td>Current waiters of held lock</td>
<td></td>
</tr>
<tr>
<td>SQMACLOC</td>
<td>Current locking activity</td>
<td></td>
</tr>
<tr>
<td>SQMACMVS</td>
<td>Current IBM MVS stats by thread</td>
<td>THDACTV, DUSER&lt;sup&gt;a&lt;/sup&gt; active threads and detail by thread</td>
</tr>
<tr>
<td>SQMACNDA</td>
<td>Current data sets</td>
<td>View TIACNDS, a hyperlink of view THDACTV</td>
</tr>
<tr>
<td>SQMACSQL</td>
<td>Current SQL activity by thread</td>
<td>THDACTV, DUSER&lt;sup&gt;a&lt;/sup&gt; active threads and detail about a thread</td>
</tr>
<tr>
<td>SQMGRPLK</td>
<td>Group locks conflicts</td>
<td>EZDLOCK&lt;sup&gt;b&lt;/sup&gt; DB2 locking menu</td>
</tr>
<tr>
<td>SQMSCBUF</td>
<td>Current buffer activity by thread</td>
<td>DUSER&lt;sup&gt;a&lt;/sup&gt; detailed thread data by user</td>
</tr>
<tr>
<td>SQMSYSLK</td>
<td>Lock conflicts</td>
<td>LKEVENT&lt;sup&gt;c&lt;/sup&gt; and EZDLOCK&lt;sup&gt;b&lt;/sup&gt; lock events</td>
</tr>
<tr>
<td>SQMSYSMN</td>
<td>DB2 current status</td>
<td>STDB2&lt;sup&gt;d&lt;/sup&gt;, DB2 status summary</td>
</tr>
<tr>
<td>SQMSYSSM</td>
<td>DB2 system summary</td>
<td>STDB2&lt;sup&gt;d&lt;/sup&gt; SSI Status</td>
</tr>
<tr>
<td>SQMSYSTH</td>
<td>Summary of active threads</td>
<td>THDACTV active threads in the subsystem</td>
</tr>
</tbody>
</table>
### What’s new

<table>
<thead>
<tr>
<th>APPTUNE report</th>
<th>Description</th>
<th>MainView for DB2 view</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a</strong> DUSER view: data for one thread</td>
<td>The most critical data is summarized in the base section. The view provides links to locks, EXPLAINing a SQL text, and start traces.</td>
<td></td>
</tr>
<tr>
<td><strong>b</strong> EZDLOCK menu: detailed data about currently held locks, lock statistics, and lockouts events on a single DB2 subsystem, lockouts for a data sharing group, and contention analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>c</strong> LKEVENT view: the latest timeout (IFCID 196) or deadlock (IFCID 172) events that occurred in a DB2 subsystem</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>d</strong> STDB2 view: an SSI overview of the status of all DB2 subsystems in the context</td>
<td>For each DB2 subsystem, this view displays activity rates, number of exceptions, and warning flags. Use this view to check activity levels for each DB2 subsystem to quickly identify outstanding exceptions.</td>
<td></td>
</tr>
</tbody>
</table>

MainView for DB2 monitors and collects DB2 performance data from both subsystem and thread perspectives. The MainView for DB2 product offers the following features:

- Provides online real-time and historical DB2 activity and statistics detail
- Supports data sharing and parallel sysplex environments
- Provides detail data views from multiple DB2 subsystems on a single screen
- Lets you create custom exception thresholds and alarms for proactive DB2 subsystem monitoring

MainView for DB2 is integrated with MainView AutoOPERATOR for z/OS and other BMC DB2 products for the IBM DB2 environment.

### Exception-only roll-ups

APPTUNE no longer supports exception-only roll-up processing as an APPTUNE filter option.

### Future deprecation of PSSBLOAD and LOADxxx reports

BMC plans to deprecate the PSSBLOAD utility and the LOADxxx batch reports in the next release of APPTUNE. As an alternative, consider using the BMC Performance Advisor Database component. The Performance Advisor Database is part of the SQL Performance solution and the BMC Performance for DB2SQL solution.
SQL Explorer for DB2, version 12.1.00

These topics describe the changes or new features in this release of the SQL Explorer for DB2 product.

**Support for Materialized Query Tables**

The Migrate Access Path Statistics function now supports Materialized Query Tables (MQTs).

**Adoption of new compiler**

Performance Advisors, Common Explain, and SQL Explorer are now built with the IBM XL C compiler, which:
- Provides access to the Language Environment runtime routines that IBM z/OS offers
- Enables future improvements in scalability and environmental currency

BMC Workbench for DB2, version 12.1.00

These topics describe the changes or new features in this release of BMC Workbench for DB2:

**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
Setting up the NGT Utility Manager in BMC Workbench

The BMC Workbench for DB2 product now enables you to view, edit, and create records in the Criteria, Exceptions, and Schedule BMC Next Generation Technology (NGT) Utility Manager tables.

For more information about these tables, see the BMC Next Generation Technology Utility Manager for DB2 for z/OS Reference Manual.

You can use this feature if you have a license for any of the following simplified solutions:

- 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

Note

BMC Next Generation Technology Utility Manager for DB2 for z/OS is only available as part of various DB2 solutions, including BMC Utility Management for DB2.

Product Tools perspective

The product now includes the Product Tools perspective that enables you to manage object sets, and set up or view the NGT Utility Manager tables.

Note

This perspective is not included in the default layout. To add the perspective, see the section about managing a workspace layout in the BMC Workbench for DB2 User Guide.
Summary of enhancements since the release of version 1.1 in May 2015

Following the version 1.1 release of BMC Workbench in May 2015, BMC made some significant features available via PTFs accompanying small program enhancements (SPEs).

BMC Workbench version 12.1.00 now includes these additional features:

- Edit and generate Alter DDL for the following objects:
  - Databases
  - Table spaces
  - Tables
  - Indexes
  - Storage groups
  - Native procedures

- Compare schemas. You can receive a count and list of objects to be created, altered, or dropped and their corresponding DDL statements. You can make the following comparisons:
  - Catalog to catalog
  - DDL to DDL
  - Catalog to DDL
  - DDL to catalog

- Generate recovery progress reports and verify recoverability for an object set. You can submit JCL to refresh the Recoverability report. You can also estimate backup and recovery time for an object set.

  To use this feature, you must have a license for the BMC Recovery for DB2 solution.

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.

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.
Minimum Adobe Flash requirement

Starting with version 12.1, BMC Workbench requires that you install Adobe Flash version 22.0.0.000 or later.

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 BMC Performance for DB2 SQL 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 BMC Performance for DB2 SQL 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

BMC Performance for DB2 SQL 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</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>LOSZ120</td>
<td>RTCS C Library</td>
<td>2.0.00</td>
</tr>
<tr>
<td>ZACSC10</td>
<td>CATALOG MANAGER for DB2 API</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZACTC10</td>
<td>CATALOG MANAGER for DB2</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZAEXC10</td>
<td>Execution 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>ZASHC10</td>
<td>COMMON ADMIN CODE</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZBMR15E</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>ZDASC10</td>
<td>DB2 Assist component</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZDBCA10</td>
<td>DB2 Component Services</td>
<td>10.1.00</td>
</tr>
<tr>
<td>ZDHS053</td>
<td>DNA Host Services</td>
<td>5.3.00</td>
</tr>
<tr>
<td>ZDIG1A0</td>
<td>DIGNUS C runtimes and C++ objects</td>
<td>1.10.00</td>
</tr>
<tr>
<td>ZDIG190</td>
<td>Dignus C runtimes and c++ objects</td>
<td>1.9.00</td>
</tr>
<tr>
<td>ZDOMC10</td>
<td>Common Infrastructure component</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZGUDC10</td>
<td>BMC Workbench for DB2</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZIODC10</td>
<td>APPTUNE component</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZLGCA10</td>
<td>DB2 Product Configuration</td>
<td>10.1.00</td>
</tr>
<tr>
<td>ZMRE110</td>
<td>Rules Engine &quot;&quot;c&quot;&quot; code</td>
<td>1.1.00</td>
</tr>
<tr>
<td>ZNGLA30</td>
<td>Next Generation Logger</td>
<td>10.3.00</td>
</tr>
<tr>
<td>ZOSZ210</td>
<td>RTCS Kernel</td>
<td>2.1.00</td>
</tr>
<tr>
<td>ZPSEC10</td>
<td>SQL Explorer component</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZPSSC10</td>
<td>Common Explain component</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>Solution Common Code</td>
<td>12.1.00</td>
</tr>
<tr>
<td>ZUIM550</td>
<td>User Interface Middleware</td>
<td>5.5.00</td>
</tr>
<tr>
<td>ZUSC550</td>
<td>UIM Common Services</td>
<td>5.5.00</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 BMC Performance for DB2SQL 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.