MainView for DB2®

Customization Guide

Supporting

Version 10.1 of MainView for DB2®
Version 10.1 of BMC System Performance for DB2®

April 2011
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- find the most current information about BMC products
- search a database for issues similar to yours and possible solutions
- order or download product documentation
- download products and maintenance
- report an issue or ask a question
- subscribe to receive proactive e-mail alerts when new product notices are released
- find worldwide BMC support center locations and contact information, including e-mail addresses, fax numbers, and telephone numbers

Support by telephone or e-mail

In the United States and Canada, if you need technical support and do not have access to the web, call 800 537 1813 or send an e-mail message to customer_support@bmc.com. (In the subject line, enter SupID:<yourSupportContractID>, such as SupID:12345). Outside the United States and Canada, contact your local support center for assistance.

Before contacting BMC

Have the following information available so that Customer Support can begin working on your issue immediately:

- product information
  - product name
  - product version (release number)
  - license number and password (trial or permanent)

- operating system and environment information
  - machine type
  - operating system type, version, and service pack or other maintenance level such as PUT or PTF
  - system hardware configuration
  - serial numbers
  - related software (database, application, and communication) including type, version, and service pack or maintenance level

- sequence of events leading to the issue

- commands and options that you used

- messages received (and the time and date that you received them)
  - product error messages
  - messages from the operating system, such as file system full
  - messages from related software
License key and password information

If you have questions about your license key or password, use one of the following methods to get assistance:

- Send an e-mail message to customer_support@bmc.com.
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About this book

This book contains procedures for customizing the MainView for DB2 product to your site’s needs. The MainView for DB2 product is integrated with the basic MainView architecture that allows authorized users to interrogate any IBM® MVS™, CICS®, IMS™, or DB2® subsystem in a VTAM® network from a single terminal. MainView for DB2 is also included as part of the BMC System Performance for DB2 solution.

This book is intended for the system programmer who needs to know how to modify the basic MainView for DB2 product installation to include more functions or site-specific changes.

To install and customize MainView for DB2, follow the instructions in the

1. MainView Installation Guide to load the product libraries.


3. System and SQL Performance for DB2 Installation Guide to tailor DB2 Product Configuration, DB2 Component Services (DBC), and the Next Generation Logger (NGL).

4. MainView for DB2 Customization Guide (this book) to tailor MainView for DB2 to your site’s requirements.

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**WARNING**

You **must** customize the BBI subsystem prior to customizing MainView for DB2.

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**NOTE**

Throughout the body of this book, occurrences of MVDB2 refer to MainView for DB2 and MVDB2/DC refers to MainView for DB2 - Data Collector. The DMR acronym for the product is used occasionally in this book and in many online panels and messages. These abbreviations do not indicate a legal product, solution, or service name of BMC Software.
Conventions

The following syntax notation is used in this book. Do not type the special characters.

- Brackets [ ] enclose optional parameters or keywords.
- Braces { } enclose a list of parameters; one must be chosen.
- A vertical line | separates alternative options; one can be chosen.
- An underlined parameter is the default.
- AN ITEM IN CAPITAL LETTERS indicates exact characters; usage can be all uppercase or lowercase.
- Items in lowercase letters are values that you supply.

Related documentation

This book is included as part of the MainView library, which documents all your MainView products and the tasks associated with using these products.

Several books from the DB2 Performance products and DB2 Administration products libraries are also included to help you install the components of MainView for DB2. These components are also used by other DB2 Performance products that are provided by BMC Software.

See the “About This Book” section of Volume 1 of the MainView for DB2 User Guide for more information about

- the MainView library
- the DB2 Performance products and DB2 Administration products libraries
- the MainView for DB2 Library
- other recommended reading

Like most BMC documentation, this book is available in printed and online formats. To request printed books or to view online books and notices (such as release notes and technical bulletins), see the Customer Support website at http://www.bmc.com/support. Most product shipments also include the books on a documentation CD.

**NOTE**

Online books are formatted as PDF or HTML files. To view, print, or copy PDF books, use the free Adobe Reader from Adobe Systems. If your product installation does not install the reader, you can obtain the reader at http://www.adobe.com.
The software also offers online Help. To access Help, press F1 within any product or click the Help button in graphical user interfaces (GUIs).
Preparing for customization

This chapter discusses preparations for customization. It describes installation considerations, release and product compatibility, and update considerations.

This chapter presents the following topics:

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Installation considerations

This information supplements the information in the MainView Installation Guide.

The MainView for DB2 product consists of the following base functions and components, which are installed and maintained by using SMP/E:

- MainView for DB2 base functions
- MainView for DB2 – Data Collector component
- CATALOG MANAGER for DB2 (Browse Only) component

The base functions are required. The components are optional but recommended because they provide valuable cross-product functionality. For more information about the features provided by the components, see Chapter 2 of the MainView for DB2 User Guide.

The components are installed by default. However, in the OS/390 and z/OS Installer product list, you can expand the entry for MainView for DB2 to show the base functions and components, and then deselect the components that you do not want to install (or that you want to install later).

You can install MainView for DB2 by using either the Express or Custom installation methods. The Express installation uses IEBCOPY to install the product (and optionally create the SMP/E environment). The Custom installation uses SMP/E functions to create and populate a new or existing SMP/E environment.

You can use the Express or Custom installation method to install the base functions and components together or separately. You might want to install them separately for any of the following reasons:

- If you have existing MainView SMP/E zones with multiple products, you might want to perform a Custom upgrade installation of the MainView for DB2 base functions and perform a separate Express installation of the components.
- You might want to install the base functions now, and defer the installation of the components until later.
If you have other licensed BMC Software DB2 products, a separate group might be responsible for installing and maintaining them in your company. In this case, the installation of the components might need to be managed by a group different from the group responsible for MainView. The installation of the components should be coordinated with that of other related products, such as

- the System Performance for DB2 solution and its other component products, Pool Advisor for DB2 and OPERTUNE for DB2
- the SQL Performance for DB2 solution and its component products, APPTUNE for DB2 and SQL Explorer for DB2
- CATALOG MANAGER for DB2

For more information about the various installation methods, see Chapter 2, “Navigating the MainView for DB2 installation process.”

**MainView for DB2 – Data Collector considerations**

The MainView for DB2 - Data Collector is shared with the following DB2 Performance products:

- APPTUNE for DB2
- Pool Advisor for DB2
- SQL Performance for DB2 solution
- BMC System Performance for DB2 solution

The MainView for DB2 - Data Collector and the products listed above run in a separate address space called the DBC. The password that you have included in the MainView BMCPspender data set (BDSTBL3x for MainView for DB2, or SPDTBL3x for the System Performance for DB2 solution) must also be included in the Data Collector HLQ.BMCPspender data set.

**Data classes and IFCIDs used by MainView for DB2 - Data Collector**

MainView for DB2 - Data Collector provides additional trace data collection options for both online and batch functions, as described in Table 1. This trace data can also be used as input to batch reporting, so that DB2 SMF recording becomes optional. In addition, the shared Explain function in the Data Collector provides expanded SQL analysis through direct hyperlink and menu access from MVDB2 views.

Table 1 on page 20 describes the trace records that are defined for collection in the MainView for DB2 - Data Collector.
<table>
<thead>
<tr>
<th>Data class</th>
<th>IFCIDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB2ACCT</td>
<td>DB2 accounting records</td>
</tr>
<tr>
<td></td>
<td>DB2 IFCIDs:</td>
</tr>
<tr>
<td></td>
<td>■ 3—Accounting</td>
</tr>
<tr>
<td></td>
<td>■ 239—Accounting DBRM/Package Overflow</td>
</tr>
<tr>
<td>DB2AUDIT</td>
<td>DB2 audit records</td>
</tr>
<tr>
<td></td>
<td>DB2 IFCIDs:</td>
</tr>
<tr>
<td></td>
<td>■ 140—Audit Authorization Failures</td>
</tr>
<tr>
<td></td>
<td>■ *141—Audit GRANTs and REVOKEs</td>
</tr>
<tr>
<td></td>
<td>■ *142—Audited Object DDL</td>
</tr>
<tr>
<td></td>
<td>■ *143—Audited Object First Write Attempt</td>
</tr>
<tr>
<td></td>
<td>■ *144—Audited Object First Read Attempt</td>
</tr>
<tr>
<td></td>
<td>■ *145—Audited Object DML at BIND</td>
</tr>
<tr>
<td></td>
<td>■ 146—User-Defined Audit Trace</td>
</tr>
<tr>
<td></td>
<td>■ 312—Audit Trail for DCE Security Processing</td>
</tr>
<tr>
<td>DB2PERF</td>
<td>DB2 performance records (all other DB2 IFCIDs)</td>
</tr>
<tr>
<td></td>
<td>MainView for DB2/Data Collector IFCIDs:</td>
</tr>
<tr>
<td></td>
<td>■ *022 and *063 —Dynamic SQL Tracing</td>
</tr>
<tr>
<td></td>
<td>■ *023-025—Utility Processing</td>
</tr>
<tr>
<td></td>
<td>■ 090—Text of DB2 Command</td>
</tr>
<tr>
<td></td>
<td>■ 125—RID List Processing</td>
</tr>
<tr>
<td></td>
<td>■ 173—ASUTIME Exceeded</td>
</tr>
<tr>
<td></td>
<td>■ *225—Storage Summary</td>
</tr>
<tr>
<td>DB2SYS</td>
<td>DB2 system records</td>
</tr>
<tr>
<td></td>
<td>DB2 IFCIDs:</td>
</tr>
<tr>
<td></td>
<td>■ 001—System Statistics</td>
</tr>
<tr>
<td></td>
<td>■ 002—Database Statistics</td>
</tr>
<tr>
<td></td>
<td>■ 105—DBID/OBID Translate to Names</td>
</tr>
<tr>
<td></td>
<td>■ 107—Page Set OPEN/CLOSE</td>
</tr>
<tr>
<td>MVDBACC</td>
<td>MainView for DB2 - Data Collector Accounting Summary Records. (BMC IFCIDs 350–352)</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> IFCIDs that are preceded by an asterisk (*) are disabled by default. See the MainView for DB2 Performance Reporter User Guide for instructions on how to activate additional IFCIDs when you want to produce a report that requires them.</td>
</tr>
</tbody>
</table>

IFCIDs that are not preceded by an asterisk (*) are started for collection automatically, but administration options in the Data Collector allow you to specify that they should be discarded and not written to trace data sets. The data classes can be defined to output groups for logging to different trace data sets. For more information, see Appendix E, “DOMPLEX option sets.”
CATALOG MANAGER for DB2 (Browse Only) considerations

The IFCIDs are used as follows:

- IFCIDs 90, 107, 173, 125 and 140 provide data for system event trace views in MVDB2.

- IFCIDs 1, 2, 3, 239 and optionally the audit IFCIDs 140-145, the utility IFCIDs 23-25, and the storage IFCID 225 can be used to provide input to batch reporting instead of SMF.

- IFCIDs 3, 239, 350-352 are used to provide thread interval history views in MVDB2. Because the Data Collector trace data sets are compressed, you can usually access a longer time period than from the MVDB2 THRDHIST trace logs.

For information about using the batch reporting program, DOMBRPT1, see “Data Collector Reporting Facilities” in the MainView for DB2 Performance Reporter User Guide.

NOTE

In general, these data classes should be assigned to the same output group (this option is the default). If changes are made, DB2ACCT and MVDBACC should be kept in the same output group.

CATALOG MANAGER for DB2 (Browse Only) considerations

The CATALOG MANAGER for DB2 (Browse Only) component enables browse access from MainView for DB2, with no CATALOG MANAGER password required. The component provides browse access to DB2 catalog tables from a MainView user session. This access is provided through hyperlinks, either from easy menus to lists of objects, or from data views that provide direct access to an object on that view. All catalog tables are supported.

If the full CATALOG MANAGER product is being installed, see the Administrative Products for DB2 Installation Guide for further details. If you own CATALOG MANAGER, you can connect MainView for DB2 to your installed copy. For access to remote DB2s, you must enable DDF connections during the CATALOG MANAGER installation.

For more information, see “Defining the connection to CATALOG MANAGER for DB2” on page 50.
Storage requirement (MEMLIMIT)

Some views (TRLTRAC and current locks views (LS*)) require storage above the 2-gigabyte bar. To calculate how much storage your MVDB2 environment requires, use the following equation:

1 Calculate how much storage your MVDB2 environment requires by using the following equation:

\[(10M \times x) + (1G \times y) = nnnnM\]

where

- \(x\) is the likely number of concurrent users of the current locks views (LS*).
- \(y\) is the likely number of concurrent users of the TRLTRAC view.
- \(nnnn\) is the minimum value for the IBM® z/OS® MEMLIMIT parameter.

**EXAMPLE**

To support two locks view users and three TRLTRAC view users concurrently, the equation would be

\[(10M \times 2) + (1G \times 3) = 3092M\]

2 Increase the MEMLIMIT parameter to at least the \(nnnn\) value calculated in step 1 by performing one of the following actions:

- In the BBI-SS PAS procedure, add the MEMLIMIT=\(nnnn\)M parameter to the EXEC statement.
- or

- In the SYS1.PARMLIB member SMFPRMxx, verify that the MEMLIMIT parameter is set to \(nnnn\) megabytes.

Product compatibility

This section discusses product compatibility with previous releases of MainView for DB2 and other products and components.
MainView Infrastructure compatibility

MainView for DB2 version 10.1 is packaged with BBI version 2.6 and MVI version 6.0. MainView for DB2 version 10.1 is compatible with other products at these MainView infrastructure release levels.

MainView for DB2 is a group 3 MainView product. For a discussion of MainView product groups, see the MainView Common Customization Guide and the MainView Administration Guide.

Cross-system compatibility with previous releases

All windows-mode and full-screen-mode MainView for DB2 functions are fully available for multiple-system support communication between version 10.1 and earlier releases. Compatibility is handled automatically.

A trace log data set cannot contain data from multiple versions of DB2 and MVDB2. Attempting to access such a data set will result in the error DZ3133E - LOG BUFFER ACCESS FAILURE - PRE-MAP SUMMARY.

Downward compatibility

MVDB2 10.1 can process trace log data sets (TLDSs) that are created with MVDB2 9.2. The one restriction is that the release level of the target DB2 in the Trace History application cannot be lower than the DB2 release of the TLDS. For example, an MVDB2 10.1 BBI-SS PAS that only monitors DB2 8.1 cannot read a DB2 9.1 TLDS. A BBI-SS PAS that monitors DB2 9.1 can read TLDSs for DB2 9.1 and 8.1.

Upward compatibility

An MVDB2 9.2 terminal session can access all of the MVDB2 10.1 full-screen trace functions (including history traces) through a cross-system connection to an MVDB2 10.1 BBI-SS PAS. However, an MVDB2 9.2 terminal session cannot process an MVDB2 10.1 trace log data set within an MVDB2 9.2 BBI-SS PAS.

If you try to access a view that includes new elements from an earlier BBI-SS PAS, you will receive the message BBMXV334I Target target on system system contains nn unresolved elements. In this case, press the Enter key and you will see the view.
Compatibility with the Data Collector component

MVDB2 10.1 is packaged with and requires MainView for DB2 - Data Collector 10.1.00.

Because of extensive infrastructure improvements to the Data Collector component, MVDB2 9.1 and 9.2 are not compatible with MainView for DB2 - Data Collector 10.1.00. For information about the infrastructure improvements, see the Release Notes for MainView for DB2 10.1.00.

Compatibility with CATALOG MANAGER component

MVDB2 10.1 is compatible with any currently supported version of CATALOG MANAGER Browse or CATALOG MANAGER for DB2.

Compatibility with RxD2

MVDB2 10.1 is compatible with RxD2/FlexTools 2.1. Hyperlinks are invoked through expand buttons in MainView for DB2 full-screen displays to provide quick access to corresponding RxD2 displays or functions, such as EXPLAIN for an SQL statement. The target DB2 is passed from MVDB2 to RxD2.

CAF compatibility

The BBI-SS PAS can connect to DB2 8.1, DB2 9.1, and DB2 10 subsystems if the proper CAF compatibility PTFs are available from IBM and applied. Contact IBM for CAF compatibility information. See “DB2 target system considerations” on page 46 for more information.

Update considerations

This section describes update considerations for existing users moving from MainView for DB2 version 9.2 to version 10.1. AutoCustomization is recommended.
Customized workload definitions

If you have customized workload definitions saved in the BBPARM member BBPTWK00, and they specify a Connect Type of APPLSERV or SYSSERV, you must modify the Connect Type to DRDA or DDF, respectively.

Enabling the components

If the MainView for DB2 - Data Collector and CATALOG MANAGER for DB2 (Browse Only) components have not been installed at the same time as the MVDB2 base functions, or the AutoCustomization steps were not executed, use manual customization. See “Defining the connection to the MainView for DB2 - Data Collector” on page 49 and “Defining the connection to CATALOG MANAGER for DB2” on page 50 for instructions.

Allocating a sufficient terminal session region size

MainView for DB2 requires a minimum terminal session or user address space region size of 4MB (4096K). It is recommended that you set the region size to 6MB if you anticipate running MainView for DB2 while doing other work from an ISPF split-screen. In addition, a 6MB region size is recommended if you anticipate transferring between multiple products while MainView for DB2 is active.

Using an External Security Manager (ESM)

External security managers (ESMs) grant access to MainView products through the MVS security authorization facility (SAF) interface. The SAF interface provides access to IBM RACF®, CA-TOP SECRET, or CA-ACF2 ESMs. Refer to the MainView Security Guide for instructions to create resource definitions that can be used by your site’s ESM.

Implementing EXCP or VTAM terminal sessions

BMC Software uses MainView Alternate Access to provide session communication for all existing and future MainView products. This facility establishes communication between MainView products and EXCP or VTAM through ISPF without requiring an active TSO session.
Authorizing ISPF split-screen support

MainView for DB2 must be able to support multiple occurrences of MainView windows. As an example, transfers between MainView products are performed with an ISPF split-screen. TSF authorization must be added to provide ISPF split-screen support.

Errors might result without adequate split-screen support. Error messages usually occur after an attempt to transfer between products or to divide the screen with the ISPF SPLIT command. Use the following messages as diagnostic aids to resolve problems that occur as a result of inadequate split-screen support.

- **PS2010E - INSUFFICIENT STORAGE TO RUN THE SESSION**
  
The terminal session region size is too small and cannot support an adequate number of transfer sessions.

  If you are a TSO user, you must log off TSO and then log on with a larger region size. Your site’s TSO administrator may have to give you authorization to increase your region size.

  If you are a VTAM or EXCP terminal user, change the REGION parameter in the JCL to 4096K or larger.

- **TS0023E - NOT SUPPORTED IN CURRENT ENVIRONMENT**
  
  BBLOAD DD statements specify data sets that are not APF-authorized. If you are able to run MainView products but receive this message during a product transfer, BBLOAD specifies different data sets than does BBILINK.

  Add the unauthorized data sets to the APF list and restart the terminal session. You can add data sets to the APF list with MainView SYSPROG Services or MainView for OS390’s SYSPROG APF service.

- **TS0025E - PMGLAUTH REQUIRED FOR TRANSFER SUPPORT**
  
  PMGLAUTH program is not in the TSO-authorized commands list nor is it in a LINKLIST or STEPLIB data set.

  Add PMGLAUTH to the AUTHTSF list in SYS1.PARMLIB(IKJTSOxx) and log on again. You can add PMGLAUTH to the AUTHTSF list with the SYSPROG AUTHTSO command provided in the MainView SYSPROG Services and the MainView for z/OS products.
If PMGLAUTH is in the TSF list and you still receive message TS0025E, type PMGLAUTH from a TSO READY prompt and check to see if the message COMMAND NOT FOUND appears. The appearance of this message means that PMGLAUTH is not in a LINKLIST or STEPLIB data set. Do one of the following actions:

— Concatenate BBLINK to the STEPLIB in your logon procedure.
— Copy PMGLAUTH to an existing LINKLIST data set.
— Add BBLINK to your system LINKLIST.

**Performance Reporter considerations**

If you install the MVDB2/DC component, two additional batch features are available. You can use the Data Collector to optionally log data to use as batch input instead of SMF data, and an additional Data Collector reporting facility is available. For more information about these features, see the MainView for DB2 Performance Reporter User Guide and “MainView for DB2 – Data Collector considerations” on page 19.
Performance Reporter considerations
Navigating the MainView for DB2 installation process

This chapter presents the following topics:

Installation road map .............................................................. 30
Customization road map ......................................................... 35
Follow-up tasks/verification .................................................... 38

This chapter provides installation and customization road maps to assist you when you install MainView for DB2 base functions and components. With these step-by-step instructions, you should be able to get the product up and running quickly. It does not cover the MainView-related steps.

--- WARNING ---

**Important:** The road maps in this chapter are not intended for users who are installing additional DB2 Performance products that share the MainView for DB2 - Data Collector technology and the DB2 Administration products that have common setup steps with CATALOG MANAGER for DB2. You have additional considerations if you are licensed for the complete CATALOG MANAGER product. Refer to the *System and SQL Performance for DB2 Installation Guide* or the *Administrative Products for DB2 Installation Guide* for complete instructions.

--- NOTE ---

The road maps do not include every panel in the process; they highlight only the panels where your choices are being clarified. In cases where a panel is not listed, follow the instructions on the panel or accept the defaults.
Installation road map

The following tables in this road map are intended to guide you quickly through the MainView for DB2 considerations for the OZI installation process. This process is organized according to the initial panels that you navigate as you run the OZI Installer. It is not meant to cover all the information that you need from the MainView Installation Guide.

Table 2  Getting started (part 1 of 2)

<table>
<thead>
<tr>
<th>Task</th>
<th>Action</th>
</tr>
</thead>
</table>
| Choose Your Installation Path and Distribution Media | Before you start, decide what components you want to install. Review “Installation considerations” on page 18 to understand your options and help you decide. You can choose to install all components together, or install the MainView for DB2 base functions separately from the other components. This choice determines which path you follow next.  
Note: If you are using tapes, the MainView for DB2 base component is on the M-series tapes, and the components are on the C-series tapes. Both tapes are required, whether installing the complete product or only the individual components. |
| Unload Base Installation Libraries             | If you are using Electronic Software Distribution (ESD), download the base installation libraries from the site.                        
If you are using tapes, you must unload the base installation libraries from the B-series tape.  
Then follow the instructions in the MainView Installation Guide to start the installation process. |
| Execute the Installation CLIST                  | From the initial screen, select Setup New Customized Installation Library.                                                             |
| Select Distribution and Installation Methods    | You have a choice of electronic or tape distribution media. Select Electronic Software Distribution (ESD), or 3490 (M9A/C9A) or 3480 (M8x/C8x) tapes.  
You must also specify the installation type as either Express or Custom. If you have not yet determined which installation method you should use, review the paths shown in Table 3 on page 32 and Table 4 on page 33. |
| Unload the Distribution Files                   | If ESD is selected, you will navigate a few more panels to build JCL to unload the distribution files.                                  
Execute the job to unload the distribution files.  
If tape is selected, you will navigate a few more panels; however, no job is created. |
Table 2  Getting started (part 2 of 2)

<table>
<thead>
<tr>
<th>Task</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue with the CLIST</td>
<td>The installation CLIST returns automatically to the initial panel.</td>
</tr>
<tr>
<td></td>
<td>1. Select <strong>Install and Customize Products and Solutions</strong>.</td>
</tr>
<tr>
<td></td>
<td>2. Choose <strong>Select Existing Customized Installation Library</strong> to use the library that you created earlier.</td>
</tr>
<tr>
<td>Use the BMC Software Installation System Main Menu</td>
<td>You will need to navigate through each of the following options:</td>
</tr>
<tr>
<td></td>
<td>■ <strong>Manage Repository/Profile</strong>: Select the defaults.</td>
</tr>
<tr>
<td></td>
<td>■ <strong>User Options</strong>: Select <strong>Basic</strong> if doing the installation for the first time; otherwise, select <strong>Advanced</strong>.</td>
</tr>
<tr>
<td></td>
<td>■ <strong>Product Install</strong>: Continue with the next task in this table.</td>
</tr>
<tr>
<td></td>
<td>■ <strong>Product Customization</strong>: If two customization options are shown, you must perform both options.</td>
</tr>
<tr>
<td></td>
<td>■ <strong>Additional Options</strong>: Use this option to add additional DB2s for CATALOG MANAGER or the Explain function as long as they are at the same DB2 release level that was originally installed. You can also use it for applying SMP/E maintenance and specifying product authorizations.</td>
</tr>
<tr>
<td>Choose Your Installation Path</td>
<td>The section of this road map that you should follow next depends on which installation path you choose:</td>
</tr>
<tr>
<td></td>
<td>■ If you choose to install all the MainView for DB2 components together, go to <strong>Table 3 on page 32</strong>.</td>
</tr>
<tr>
<td></td>
<td>This choice is recommended if you are installing the product for the first time.</td>
</tr>
<tr>
<td></td>
<td>■ If you choose to install the base component separately from the other components, go to <strong>Table 4 on page 33</strong>.</td>
</tr>
</tbody>
</table>
Table 3 Installing all components together

<table>
<thead>
<tr>
<th>Panel</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Express or Custom Installation of All MainView for DB2 Base Function and Components</td>
<td>You can include other DB2 or MainView products. The MainView for DB2 base functions, the MainView for DB2 - Data Collector component, and other MainView products are installed into separate libraries from the CATALOG MANAGER for DB2 (Browse Only) component, and other DB2 products. Remember to run the job that downloads the MainView SMP/E maintenance libraries.</td>
</tr>
<tr>
<td>Installation Tape VOLSER(s)</td>
<td>Be sure to specify both M-series and C-Series tapes. If you specify only one set of tapes, you will not see the MainView(R) for DB2 option shown in the next step.</td>
</tr>
<tr>
<td>Install System Product and Solution Selection</td>
<td>You are asked to select the product or products that you want to install.</td>
</tr>
<tr>
<td></td>
<td>1. Select the MainView(R) for DB2 product entry and expand the entry by using the PF10 key.</td>
</tr>
<tr>
<td></td>
<td>By default, selecting this entry installs the following components:</td>
</tr>
<tr>
<td></td>
<td>CATALOG MANAGER Component</td>
</tr>
<tr>
<td></td>
<td>MV for DB2 – Data Collector</td>
</tr>
<tr>
<td></td>
<td>MV for DB2 Base</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> If you own the full CATALOG MANAGER product, clear the CATALOG MANAGER Component option. You can use your installed version or choose the separate product entry for CATALOG MANAGER for DB2.</td>
</tr>
<tr>
<td></td>
<td>2. If you own RxD2, select RxD2/LINK and RxD2/FlexTools. (You might need to scroll down to see them.)</td>
</tr>
<tr>
<td></td>
<td>You will navigate a few more panels to build JCL to unload the distribution files. Then execute the jobs.</td>
</tr>
<tr>
<td>Install System Product Customization</td>
<td>You will see options to perform two sets of customization steps online. You must perform both.</td>
</tr>
<tr>
<td></td>
<td>1. Select AutoCustomization (Autocust) to customize MainView for DB2 and any other selected MainView products. See Table 5 on page 35.</td>
</tr>
<tr>
<td></td>
<td>2. When AutoCustomization is complete, return to this panel and select OZI Customization to customize the MainView for DB2 components and any other selected DB2 products. See Table 6 on page 36.</td>
</tr>
</tbody>
</table>
Table 4   Installing the components separately (part 1 of 2)

<table>
<thead>
<tr>
<th>Panel</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Express or Custom Installation of the MainView for DB2 Base Function Only</td>
<td>Use this option to upgrade an existing set of MainView SMP/E zones.</td>
</tr>
<tr>
<td>Install System</td>
<td>You are asked to select the product or products that you want to install.</td>
</tr>
<tr>
<td>Product and Solution Selection</td>
<td>1. Select the MainView(R) for DB2 product entry and expand the entry by using the PF10 key.</td>
</tr>
<tr>
<td></td>
<td>By default, selecting this entry installs the following:</td>
</tr>
<tr>
<td></td>
<td>CATALOG MANAGER Component</td>
</tr>
<tr>
<td></td>
<td>MV for DB2 – Data Collector</td>
</tr>
<tr>
<td></td>
<td>MV for DB2 Base</td>
</tr>
<tr>
<td></td>
<td>2. Clear the CATALOG MANAGER Component and MV for DB2 – Data Collector options.</td>
</tr>
<tr>
<td></td>
<td>3. Leave the MV for DB2 Base option selected.</td>
</tr>
<tr>
<td></td>
<td>4. If you own RxD2, select RxD2/LINK and RxD2/FlexTools. (You might need to scroll down to see them.)</td>
</tr>
<tr>
<td></td>
<td>You will navigate a few more panels to build JCL to unload the distribution files. Then execute the jobs.</td>
</tr>
<tr>
<td>Install System</td>
<td>You will see an option to perform one set of customization steps online.</td>
</tr>
<tr>
<td>Product Customization</td>
<td>Select AutoCustomization (Autocust) to customize MainView for DB2 and any other selected MainView products. See Table 5 on page 35.</td>
</tr>
<tr>
<td></td>
<td>Note: If you plan to install the components separately, you will need the high level qualifier that you plan to specify for these libraries.</td>
</tr>
<tr>
<td></td>
<td>Alternatively, you can complete the customization of the optional steps for the components later, following the manual instructions in this book.</td>
</tr>
</tbody>
</table>
Table 4 Installing the components separately (part 2 of 2)

<table>
<thead>
<tr>
<th>Panel</th>
<th>Action</th>
</tr>
</thead>
</table>
| Express or Custom Installation of the **MainView for DB2 Components Only**<br>You can include other DB2 products. | You are asked to select the product or products that you want to install. 1. Select the **MainView(R) for DB2** product entry and expand the entry by using the PF10 key. By default, this entry installs the following:  
  **CATALOG MANAGER Component**  
  **MV for DB2 – Data Collector**  
  **MV for DB2 Base**  

  2. Leave the components selected that you want to install.  

  **Note:** If you own the full CATALOG MANAGER product, clear the **CATALOG MANAGER Component** option. You can use your installed version or choose the separate product entry for CATALOG MANAGER for DB2.  

  3. Make sure that **MV for DB2 Base** is not selected.  

  **Note:** When you select only the components, you are warned that you are not installing the base product. This warning provides a further opportunity to select MainView for DB2 from this panel. You can bypass this step if you performed a separate SMP/E installation. You will navigate a few more panels to build JCL to unload the distribution files. Then execute the jobs. |
| Install System Product and Solution Selection | You will see an option to perform one set of customization steps online. Select **OZI Customization** to customize the MainView for DB2 components and any other selected DB2 products. See Table 6 on page 36. |
Customization road map

The following tables are intended to guide you quickly through the customization process. This process is organized according to the panels that you navigate as you run the following software:

- MainView AutoCustomization (see Table 5)
- OZI Customization (see Table 6 on page 36)

Table 5   MainView AutoCustomization (Autocust) (part 1 of 2)

<table>
<thead>
<tr>
<th>Panel</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>MainView AutoCustomization (Autocust)</td>
<td>This section of the road map only covers the steps that support the components. For more information about the complete MainView customization process, see the MainView Common Customization Guide. Chapter 3, “Customizing MainView for DB2 functions” addresses some additional MVDB2 considerations that you should review. It also includes manual customization instructions for the component interfaces in case you are not performing AutoCustomization.</td>
</tr>
<tr>
<td>PRODUCT CUSTOMIZATION</td>
<td>Select the listed products for customization. The additional customization for the components is included with the selection of the MainView for DB2 product.</td>
</tr>
<tr>
<td>CREATE BBI-SS START PROCEDURE</td>
<td>Another AutoCustomization change to support the MVDB2 components is found in Step 17 – Create BBI-SS Start Procedure. Specify whether you have decided to use the components.</td>
</tr>
<tr>
<td></td>
<td>An additional panel in this step includes the Data Collector load library in the PAS JCL when you confirm that you are using the Data Collector.</td>
</tr>
</tbody>
</table>
COMPONENT CLISTS In AutoCustomization step 29 – Define CLISTS for MVDB2 Components, you are asked if you want to install and customize the following CLISTS:

- DOMC is used for hyperlinks to the Report Manager products that are running in the Data Collector.
- DMRACT and parameter member, DMRACTR, are used for the hyperlinks to CATALOG MANAGER.

When you are done customizing the CLISTs, move them to the hilevel.SSBCLIB data set and make sure that data set is allocated in the MAINVIEW CLIST after hilevel.BBCLIB in the BBCLIB DD concatenation.

For instructions on performing these tasks manually, see “Defining the connection to the MainView for DB2 - Data Collector” on page 49 and “Defining the connection to CATALOG MANAGER for DB2” on page 50.

Install System Product Customization After completing the AutoCustomization steps, perform the OZI Customization. See Table 6 on page 36.

Return to the Install System Product Customization panel and select option 1.

Table 5  MainView AutoCustomization (Autocust) (part 2 of 2)

<table>
<thead>
<tr>
<th>Panel</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPONENT CLISTS</td>
<td>In AutoCustomization step 29 – Define CLISTS for MVDB2 Components, you are asked if you want to install and customize the following CLISTS:</td>
</tr>
<tr>
<td></td>
<td>- DOMC is used for hyperlinks to the Report Manager products that are running in the Data Collector.</td>
</tr>
<tr>
<td></td>
<td>- DMRACT and parameter member, DMRACTR, are used for the hyperlinks to CATALOG MANAGER.</td>
</tr>
<tr>
<td></td>
<td>When you are done customizing the CLISTs, move them to the hilevel.SSBCLIB data set and make sure that data set is allocated in the MAINVIEW CLIST after hilevel.BBCLIB in the BBCLIB DD concatenation.</td>
</tr>
<tr>
<td></td>
<td>For instructions on performing these tasks manually, see “Defining the connection to the MainView for DB2 - Data Collector” on page 49 and “Defining the connection to CATALOG MANAGER for DB2” on page 50.</td>
</tr>
<tr>
<td>Install System Product Customization</td>
<td>After completing the AutoCustomization steps, perform the OZI Customization. See Table 6 on page 36.</td>
</tr>
<tr>
<td></td>
<td>Return to the Install System Product Customization panel and select option 1.</td>
</tr>
</tbody>
</table>

Table 6  OZI customization (part 1 of 2)

<table>
<thead>
<tr>
<th>Panel</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>OZI Customization</td>
<td>See the System and SQL Performance for DB2 Installation Guide for more information about customizing the MainView for DB2 - Data Collector component. See the Administrative Products for DB2 Installation Guide for more information about customizing the CATALOG MANAGER Browse component.</td>
</tr>
<tr>
<td>Install System Previous Release of Product</td>
<td>Specify a previous release for each of the components only if you are migrating. If installing the components for the first time, or re-installing the same release, specify NONE.</td>
</tr>
<tr>
<td>Install System Product STEPLIB Libraries</td>
<td>Use this panel only if you have additional libraries for use with the DB2 STEPLIBs. (This panel is usually not needed.)</td>
</tr>
<tr>
<td>Install System DB2 Parameter Information Panel</td>
<td>You must enter a DB2 ssid. The information entered on this panel will be used to customize the components for the first DB2 subsystem that you choose. You can clone other subsystems later.</td>
</tr>
<tr>
<td></td>
<td>If DDF is available for access to a remote DB2 system by CATALOG MANAGER, be sure to set the flag to Y and supply the location name.</td>
</tr>
</tbody>
</table>
Table 6  OZI customization (part 2 of 2)

<table>
<thead>
<tr>
<th>Panel</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install System Grant Product Authorization Panel</td>
<td>Be sure to allow public access for a remote CATALOG MANAGER.</td>
</tr>
</tbody>
</table>
| Install System JCL Generation File Information                | Unless you will be using any of the BMC Software Administrative Products, such as Load Plus, you do not need to execute the JCL Generation Options Dialog.  
                                                             | Unless you plan to use a licensed copy of CATALOG MANAGER, you cannot populate a new Product Options File.                              |
| Install System CATALOG MANAGER Options Specification          | You can usually accept the CATALOG MANAGER defaults on this panel.                                                                     |
| Install System Options Specification                           | You can usually accept the defaults for the System and SQL Performance Products on this panel.                                          |
| System and SQL Performance Products Default Options           | The defaults are recommended, but they can be changed if necessary.                                                                      |
| Install System Product to Product Interface Panel             | This panel is applicable only for the installation of full versions of the Administrative Products.                                      |
|                                                              | Ignore this panel when installing the components.                                                                                       |
| Install System SQLX Library Verification                      | This step is required for the Explain feature supported by SQL Explorer.                                                               |
|                                                              | Use the default.                                                                                                                        |
| Install System ISPF Interface Panel Verification              | This panel is not applicable when installing the components.                                                                          |
| Install System BMCDB2 Control Table                           | This panel is not applicable when installing the components.                                                                          |
| Install System - Final Tasks                                  | Select each of the options on this panel in order. Begin with **Product Authorization**.                                                 |
| Install System Product Authorization                          | Specify how you intend to set up product passwords.                                                                                     |
|                                                              | You can retain your product authorization from previously installed products by copying the authorization modules into your new load/password library. |
| Install System JCL Generation File Review                      | Review, and if necessary, correct information that you have previously entered during the OZI Customization process.                 |
| ssid JCL Generation Install                                    | This panel is not applicable when installing the components.                                                                          |
| Install System Variable Review                                 | Note that the DB2 system specified in this panel must be at the same DB2 version as specified earlier.                                  |
You need to complete a few post-installation tasks to make sure that the product and all its components are installed correctly.

If you need further instructions to accomplish any of the following tasks within the MainView for DB2 - Data Collector component, see the “Customization Tasks” section of the System and SQL Performance for DB2 Installation Guide. You can also press the HELP key from any panel for more information. The System and SQL Performance for DB2 Administrator Guide provides information about administrative tasks for the MainView for DB2 - Data Collector component.

### Table 7 Follow-up tasks (part 1 of 4)

<table>
<thead>
<tr>
<th>Task</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refresh the Linklist Lookaside (LLA).</td>
<td>This task is optional. Perform these steps only if both of the following conditions are true:</td>
</tr>
<tr>
<td></td>
<td>- You are using the z/OS Linklist Lookaside (LLA) feature.</td>
</tr>
<tr>
<td></td>
<td>- You have installed the product load modules into a LINKLST data set.</td>
</tr>
<tr>
<td></td>
<td>If both conditions are true, refresh the LINKLST data set.</td>
</tr>
</tbody>
</table>
Follow-up tasks/verification

Table 7  Follow-up tasks (part 2 of 4)

<table>
<thead>
<tr>
<th>Task</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MainView for DB2 - Data Collector verification</strong></td>
<td>Verify that the MainView for DB2 - Data Collector component is connected properly, as follows:</td>
</tr>
<tr>
<td>Verify connection.</td>
<td>1. Start the Data Collector by executing the Data Collector JCL in your PROCLIB.</td>
</tr>
<tr>
<td></td>
<td>2. Start the CAS and PAS by executing the JCL in your PROCLIB to start a CAS and a BBI-SS PAS. (See the MainView for Common Customization Guide and the MainView Administration Guide for more information.)</td>
</tr>
<tr>
<td></td>
<td>3. Log on to MainView for DB2 and access the EZDB2 Easy Menu. (See the MainView for DB2 User Guide for log on instructions.)</td>
</tr>
<tr>
<td></td>
<td>4. Set the context to an active target DB2 subsystem (CON $db2target$).</td>
</tr>
<tr>
<td></td>
<td>5. Select the MVDB2/DC Admin/Archive option from the EZDB2 Easy Menu and then select option 1 to access the Administration menu for the Data Collector.</td>
</tr>
</tbody>
</table>

If this hyperlink works, continue on to the “Verify set-up” task (below).

If the connection to the Data Collector does not work, perform the following actions to find the problem:

- Check that the passwords are where they need to be.

- Make sure that the DOMC CLIST was moved into the $hilevel$.SSBCLIB data set and that the data set allocated in the MAINVIEW CLIST after $hilevel$.BBCLIB in the BBCLIB DD concatenation.

- To verify the products in the Data Collector, issue the PRODUCTS command from SDSF with the syntax /f $dcid$,products. For example, for data collector JB10, issue the command /f jb10,products.

A list of all data collector products that have registered themselves is displayed in the data collector message log.
Verify set-up. 

Verify that the MainView for DB2 - Data Collector component is set up correctly, as follows:

1. On the Administration panel, select **Option 2. DOMPLEX Option Sets**.
2. On the DOMPLEX Option Sets panel, enter E next to the appropriate DOMPLEX.
3. Move the cursor to the + sign next to **DOMPLEX Parameters** and press **Enter** to expand the list.
4. Review the parameters.

Verify the Explain process.

Issue a dynamic Explain command, as follows:

1. Return to the MainView for DB2 – DC Main Menu.
2. Select the E (Explain Interface) option.
3. Select option **5 - Ad Hoc SQL**.
4. Enter an SQL statement, for example:
   
   ```sql
   SELECT * FROM SYSIBM.SYSDBAUTH
   ```
5. Press **Enter** and then press the **PF3** key.
6. Select option 1 to explain the SQL.

<table>
<thead>
<tr>
<th>Task</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verify set-up.</td>
<td>Verify that the MainView for DB2 - Data Collector component is set up correctly, as follows:</td>
</tr>
<tr>
<td></td>
<td>1. On the Administration panel, select <strong>Option 2. DOMPLEX Option Sets</strong>.</td>
</tr>
<tr>
<td></td>
<td>2. On the DOMPLEX Option Sets panel, enter E next to the appropriate DOMPLEX.</td>
</tr>
<tr>
<td></td>
<td>3. Move the cursor to the + sign next to <strong>DOMPLEX Parameters</strong> and press <strong>Enter</strong> to expand the list.</td>
</tr>
<tr>
<td></td>
<td>4. Review the parameters.</td>
</tr>
<tr>
<td>Verify the Explain process.</td>
<td>Issue a dynamic Explain command, as follows:</td>
</tr>
<tr>
<td></td>
<td>1. Return to the MainView for DB2 – DC Main Menu.</td>
</tr>
<tr>
<td></td>
<td>2. Select the E (Explain Interface) option.</td>
</tr>
<tr>
<td></td>
<td>3. Select option <strong>5 - Ad Hoc SQL</strong>.</td>
</tr>
<tr>
<td></td>
<td>4. Enter an SQL statement, for example:</td>
</tr>
<tr>
<td></td>
<td><strong>SELECT * FROM SYSIBM.SYSDBAUTH</strong></td>
</tr>
<tr>
<td></td>
<td>5. Press <strong>Enter</strong> and then press the <strong>PF3</strong> key.</td>
</tr>
<tr>
<td></td>
<td>6. Select option 1 to explain the SQL.</td>
</tr>
</tbody>
</table>
Follow-up tasks/verification

Table 7  Follow-up tasks (part 4 of 4)

<table>
<thead>
<tr>
<th>Task</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATALOG MANAGER Browse</td>
<td>You can verify that the CATALOG MANAGER Browse component is installed correctly, as follows:</td>
</tr>
<tr>
<td></td>
<td>1. Make sure the context is set to a local target DB2 subsystem.</td>
</tr>
<tr>
<td></td>
<td>2. Select the <strong>CATALOG BROWSE</strong>—Local option from the EZDB2 Easy Menu.</td>
</tr>
<tr>
<td></td>
<td>If you have installed the CATALOG MANAGER DDF option, also try the</td>
</tr>
<tr>
<td></td>
<td><strong>CATALOG BROWSE</strong>—Remote option to access a DB2 on a different z/OS</td>
</tr>
<tr>
<td></td>
<td>system.</td>
</tr>
<tr>
<td></td>
<td>3. Select an <strong>object type</strong> from the Catalog Browser Primary Menu.</td>
</tr>
<tr>
<td></td>
<td>If this process works, you have now completed the verification.</td>
</tr>
<tr>
<td></td>
<td>If an error occurs, perform the following actions:</td>
</tr>
<tr>
<td></td>
<td>■ Check the results of the $C40INST job and make sure that all steps executed successfully.</td>
</tr>
<tr>
<td></td>
<td>■ Make sure that the DMRACT CLIST was moved into the <code>hilevel.SSBCLIB</code> data set and that the data set allocated in the MAINVIEW CLIST after <code>hilevel.BBCLIB</code> in the BBCLIB DD concatenation.</td>
</tr>
<tr>
<td></td>
<td>■ Check the member DMRACTR in UBBPARM to ensure that it specifies the correct CATALOG MANAGER release number.</td>
</tr>
</tbody>
</table>
Customizing MainView for DB2 functions

This chapter describes how to tailor MainView for DB2 to your site’s needs. Customization of BBI and the MainView Infrastructure is discussed in the MainView Common Customization Guide. Customization of MainView for DB2 - Data Collector is discussed in the System and SQL Performance for DB2 Installation Guide and customization of CATALOG MANAGER for DB2 is discussed in the Administrative Products for DB2 Installation Guide.

This chapter presents the following topics:

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- Defining the connection to the MainView for DB2 - Data Collector ........................................ 49
- Defining the connection to CATALOG MANAGER for DB2 ........ 50
- Defining the connection to System Performance for DB2 ............ 51
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  - Setting up and maintaining a trace directory ......................... 56
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<td>Obtain SYSADM/SYSCTRL privilege</td>
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<td>5</td>
<td>Define STOGROUP usage</td>
<td>74</td>
</tr>
<tr>
<td>6</td>
<td>Define database usage</td>
<td>75</td>
</tr>
<tr>
<td>7</td>
<td>Define table space usage (BMC LOADPLUS method only)</td>
<td>76</td>
</tr>
<tr>
<td>8</td>
<td>Generate CREATE statements</td>
<td>77</td>
</tr>
<tr>
<td>9</td>
<td>Create DB2 objects</td>
<td>82</td>
</tr>
<tr>
<td>10</td>
<td>Migrate DB2 tables</td>
<td>83</td>
</tr>
<tr>
<td>11</td>
<td>Bind the processing plan</td>
<td>85</td>
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<td>12</td>
<td>Bind the reporting plan</td>
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<td>13</td>
<td>Tailor extract/summarization JCL</td>
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<td>Tailor report JCL</td>
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<td>Tailor MVDB2/DC batch report JCL</td>
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<td>Tailor MVDB2/DC archive Performance Reporter table load JCL</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Batch verification</td>
<td>90</td>
</tr>
</tbody>
</table>
Using product libraries

Several distributed libraries are included with MainView for DB2, including a parameter library (BBPARM), a sample library (BBSAMP), and a profile library (BBPROF). Use the contents of these distributed libraries as models to create site-customized product libraries, either manually or automatically with AutoCustomization.

**WARNING**
The distributed libraries should never be modified. If you change them, subsequent SMP maintenance will overwrite your changes.

Throughout the MainView documentation set, references to these libraries use the distributed name. However, when you need to make changes, be sure to use the corresponding library that has been customized for your site. Table 8 lists the distributed name, the corresponding customized library created by AutoCustomization, and leaves space for you to note any other corresponding library that may have been created for your site.

<table>
<thead>
<tr>
<th>Distributed library name</th>
<th>Library created by AutoCustomization</th>
<th>Other site-customized copy</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBPARM</td>
<td>UBBPARM</td>
<td></td>
</tr>
<tr>
<td>BBSAMP</td>
<td>UBBSAMP</td>
<td></td>
</tr>
<tr>
<td>BBPROF</td>
<td>SBBPROF</td>
<td></td>
</tr>
<tr>
<td>BBPROC*</td>
<td>UBBPROC*</td>
<td></td>
</tr>
</tbody>
</table>

* BBPROC and UBBPROC are allocated by an AutoCustomization step for all BBI-SS PAS products, but are not used by MainView for DB2.

DB2 target system considerations

The following notes answer questions about your DB2 target system and the BBI-SS PAS:

- MainView for DB2 libraries are *not* required in your DB2 system.
- One BBI-SS PAS can monitor multiple DB2 systems (see BBPARM member BBIJNT00).

**NOTE**

MainView for DB2 10.1 supports DB2 8.1, 9.1, and 10.1. An MainView for DB2 PAS can monitor DB2 subsystems at two different DB2 releases if the DB2 load library used in the PAS contains the appropriate Call Attach Facility (CAF) compatibility level. Contact IBM for information about upward-compatibility PTFs for the lower release load library. With DB2 8.1 and 9.1, downward compatibility is available.

- The BBI-SS PAS establishes a CAF connection to DB2 that detects DB2 startups and shutdowns, and establishes a DB2 thread to use the DB2 Instrumentation Facility Interface (IFI) for workload requests.

**NOTE**

If the MainView for DB2 CAF connection to DB2 is lost for any reason, you can restart it with the BBI control command RESET BM. For more information, see the *MainView Administration Guide*.

- The BBI-SS PAS must load several DB2 modules. It first searches the data set that is specified in the DSNLOAD DD (if present); then the STEPLIB and the system link list. The DSNLOAD DD is not required.
The BBI-SS PAS must be GRANTed authorization to issue trace control commands and capture data through the DB2 Instrumentation Facility Interface (IFI). The SQL statement text is

```sql
GRANT TRACE,MONITOR1,MONITOR2,DISPLAY TO authid;
```

In addition, to issue DB2 commands from MainView for DB2, you must GRANT the privileges that are required for the types of DB2 commands that you want to issue from the BBI-SS PAS.

**NOTE**
To cancel a thread in the DUSER full-screen service, or to issue DB2 commands in the BBI log, requires SYSADM, SYSOPR, or SYSCTRL authority.

- Other system privileges are
  - RECOVER
  - STOPALL
  - STOSPACE
  - SYSADM
  - SYSOPR
  - SYSCTRL

- Database privileges are
  - DBADM ON DATABASE
  - DISPLAYDB ON DATABASE
  - STARTDB ON DATABASE
  - STOPDB ON DATABASE

What the authorization ID is and how it is determined depends on the access security system that is being used. The rules are listed below.

- If no security management system is installed or if it is active, the BBI-SS PAS ID is used as the authorization ID for trace requests.

- If the security management system is active and the BBI-SS PAS is run as a job, the user ID of the job is used. This user ID can be established in a number of ways; for example:

  - RACF
    - Add the USER parameter to the JOB statement.
  - CA-ACF2
    - Add a /*LOGONID statement after the JOB statement.
If security is active and the BBI-SS PAS is run as a Started Task, the options are more subtle:

RACF
   This value is specified in the security system’s Started Procedure Table (ICHRIN03) for the BBI-SS PAS procedure.

CA-ACF2
   A /*LOGONID card can be added to the BBI-SS PAS startup procedure.

**NOTE**

One method to display the active authorization ID is to start the BBI-SS PAS and issue the DB2 command:

- **DIS THD(∗)**

The authorization ID is displayed in the AUTHID column for the active BBI-SS PAS connection.

CA-TOP SECRET is capable of overriding this authorization ID with either nonprintable characters or the word *BYPASS*. If an override occurs, issue the following CA-TOP SECRET commands to define the BBI-SS PAS ACID to CA-TOP SECRET. The ACID is the BBI-SS PAS authorization ID to DB2.

**TSS CREATE (X) FACILITY(STC) *NOPW* DEPT(ZZZ) (X=STARTED TASK NAME)**

**TSS ADD(X) (Y=STEP OR JOB NAME)**

**TSS ADD(STC) PROC(Y) ACID(X)**

Then, perform the GRANT authorizations that were listed previously.

Consult your security administrator to determine the authorization procedures for your particular security system.
Defining the connection to the MainView for DB2 - Data Collector

The following steps are required to activate the functions that are provided by this component. AutoCustomization and OZI customization support these steps, or you can do them manually.

1. To activate the interface from the BBI-SS PAS to the Data Collector, you must specify the Data Collector load library in the BBI-SS PAS started task JCL (created by AutoCustomization or by following the instructions in the MainView Common Customization Guide).

If you plan to use SQL Explorer for DB2 or the BMC common Explain feature within MainView for DB2, you must also concatenate the HLQ.DBLINK data set in the STEPLIB.

This step activates the connection logic and allows trace data that was collected in the Data Collector to be retrieved and displayed in MainView for DB2 views.

The BBI-SS PAS uses auto discovery to find a local active Data Collector. If more than one is active (for example, in a test environment), you can direct the PAS to connect to a specific Data Collector by specifying the parameter CDC in the BBPARM member DMRBEX00 for each DB2 target.

NOTE
If you are installing the OPERTUNE product, it might also be present in this Data Collector load library. Including the load library to activate the API will also activate the MainView for DB2 interface to OPERTUNE that allows changing ZPARMs from views. Security is checked both in MainView for DB2 and in OPERTUNE before any change is allowed.

2. Start the Data Collector started task by using the customized procedure DOMssid, in the UBBSAMP library. If you are migrating from a previous release, use the Data Collector procedure in the DOMPROC member of the BBSAMP data set.

3. To enable hyperlinks from MainView for DB2 views to related reports in the other DB2 Performance products and some additional MainView for DB2 - Data Collector reports, manually move the CLIST DOMC from hilevel.BBCLIB to hilevel.SBBCLIB and make sure that hilevel.SBBCLIB is allocated in the MAINVIEW CLIST by the BBCLIB DD statement after hilevel.BBCLIB.

4. To enable hyperlinks from MainView for DB2 views to the BMC common Explain feature, ensure that the DOMC CLIST PSSxxxx DD statements allocate the data sets that contain the SQL Explorer for DB2 product.
5. Ensure that the password that you included in the MainView BMCPSWD data set (BDSTBL3x for MainView for DB2, or SPDTBL3x for the System Performance for DB2 solution) is also included in the Data Collector *HLQ*.BMCPWD data set.

---

**NOTE**

If you need to make changes to the Administration dialog when the Data Collector is not running, you can use the DOMCLIST member of the BBSAMP data set to invoke a Report Manager session and access the online Administration panels.

---

**Defining the connection to CATALOG MANAGER for DB2**

The following steps are required to enable the hyperlinks from MainView for DB2 views to CATALOG MANAGER to display information from DB2 catalog tables. AutoCustomization supports these steps.

1. To enable the hyperlinks, customize the CLIST DMRACT that is distributed in BBSAMP and move it to SSBCLIB.

   You must provide the following information from your CATALOG MANAGER installation:

   — **HLQ**(*cathlq*)—*cathlq* identifies the high-level qualifier of the CATALOG MANAGER data sets.

   — **REL**(*nnnn*)—*nnnn* identifies the release level, (such as 1010).

   — **DOPTS**(*ACTDOPD1*)—*ACTDOPD1* is the default options module.

   If you are customizing manually, you must also provide **MVHLQ**—MainView for DB2 high-level qualifier.

2. To activate the connection to CATALOG MANAGER, edit member DMRACTR in UBBPARM (original source in member DMRACTR in BBPARM). Specify the CATALOG MANAGER version number in the first four characters of the line. (For example, version number 10.1 is specified as 1010.)
Defining the connection to System Performance for DB2

If you are installing the System Performance for DB2 solution, another step is required to activate the following hyperlink on the MainView DB2 Options panel:

**SPD**  System Performance for DB2

You must access SPD from this option (not DOMCLIST) to enable access to full MainView functionality from the solution panels.

Copy the SPDCLLIST member from the JCL library to the SBBCLIB library.

Customizing the application trace facility

This section describes how to manually

- specify trace defaults in BBPARM member DMRBEX00
- set up and maintain a trace directory and trace log data sets
- set up continuous workload history traces

A request for a trace can also request that the trace data be recorded to VSAM data sets for later viewing or printing. The logging of trace data requires a preallocated trace directory that must be identified to BBI. Setup of the trace directory can be done automatically by AutoCustomization, as described in the *MainView Installation Guide* or manually, as described in this section. Trace log data sets can be preallocated as described in this section, or they can be allocated dynamically at the time of the trace request.

By defining one or more traces to start automatically, a continuous workload history is available for later viewing or printing.

NOTE

No password is required in the CATALOG MANAGER LOAD library for browse access from MainView for DB2.

Access to DB2s that are in a different LPAR from a User Address Space (UAS) is only available if you have DDF connections defined between your DB2s and have enabled DDF usage in CATALOG MANAGER.
Specifying trace defaults

The DMRBEX00 member of the BBPARM data set defines trace request defaults per DB2 system, which prime the options for the trace request data entry panels. This member is also used to control other product features, as described in “Customizing background processing” on page 64. That section also describes how to reset these values during operation.

This section describes the DMRBEX00 keywords that define option defaults for

- DB2 accounting classes
- all trace requests
- a detail trace
- trace logging

### DB2 accounting classes

One keyword can be used to define the accounting classes for which data collection is desired. These classes are included on the MainView for DB2 trace request to DB2 that supports your collection of accounting data. The keyword is as follows:

```
ACCTG=(1,2,3,7,8,10)
```

where any combination of these accounting trace classes can be specified

The list must be defined within parentheses. The default is class 1 only.

**NOTE**

The use of this keyword is only needed, or recommended, if an accounting trace (normally written to SMF) is not already active in DB2, because MainView for DB2 will automatically receive the data from the active classes that are specified in DB2.

### General trace options

The following keywords define the defaults for the trace display buffer size (STORAGE option) and trace duration (STOP option). These options apply for any trace and are presented when a trace is requested.
STORAGE
specifies the size of the display buffer for the requested trace

This value overrides the value defined in BBIISP00.

TRTIME=n
where n specifies the default duration of a trace in minutes (1 to 32,000)

The default is no limit.

NOTE
If TRTIME is specified, the STOP keyword in the ATRAC Start DB2 Trace Request data entry panel is primed with this value. If a value is not specified, STOP is not primed. A STOP value that is not in the hh:mm:ss format is interpreted as a STOPCNT value in minutes.

The following DMRBEX00 keyword lets you set a limit to the total amount of storage allowed for a trace:

TRLIM=nK | nnnnnnn
where n can be 1 to 8 characters as kilobytes (K) or bytes

It specifies the upper limit on the total storage that can be allocated for any one trace. If the storage is not specified in K (kilobytes), the value of n is in bytes. The default value is the product of the default TRBUFF and TRSIZE multiplied by 2.

IFIBUFF=n

where n specifies the size in kilobytes of the IFC managed trace (OP:x) buffer and the IFI return area that is used for each DB2 START TRACE request. All summary traces, workload monitors, and lockout IFCIDs use a single DB2 START TRACE request. Each detail trace uses a separate DB2 START TRACE request.

Specify a value from 256 to 65535. If you specify a value beyond this range, the value is adjusted to fall within the range. The default is 256, which is usually adequate. Multiple concurrent traces or a high volume of threads might require more than 256.

The maximum value of 65535 exceeds the current buffer size limit for a START TRACE request, but enables the IFIBUFF keyword to accommodate multiple versions of DB2, and future increases to the buffer size limit. The START TRACE request will actually use a buffer size that is closest to the IFIBUFF value and within the range of 256 to 16384.

The size of the IFI return area will be the same as the IFC managed buffer, up to a maximum size of 1024.

The IFC managed trace buffer is obtained in extended common storage (ECSA). The IFI return area is obtained in extended private storage (EPVT) of the BBI-SS PAS.
Specifying trace defaults

**NOTE**
The IFC managed trace buffer is not freed. It is reused for each subsequent START TRACE request that is associated with a given OFx destination.

**Detail trace options**

The following keywords define the defaults for the data collection buffers (TRSIZE and TRBUFF options) and limit the total amount of storage allowed for detail trace data collection.

A pool of buffers is maintained for each detail trace that is active and is GETMAINed in Extended Private Area. One of these buffers is allocated at CREATE THREAD time per active thread that is being traced. The following DMRBEX00 parameters or an ATRAC Start Trace request define the size and number of these buffers. The buffers can be specified per DB2 system.

The values for these DMRBEX00 keywords prime the ATRAC data entry panel:

**TRBUFF=nnn**
where **nnn** is the number of buffers to be allocated for a detail trace request

The number should be at least equal to the number of concurrent active threads being traced in DB2 plus 10%. The default is 0. If TRBUFF is specified with an ATRAC request, it overrides the TRBUFF value in DMRBEX00.

**TRSIZE=nnnK**
where **nnn** is the size in kilobytes of each buffer

This number is rounded to a multiple of 4K. This size multiplied by 2 determines the maximum amount of data that can be traced for one thread without trace logging. The default is 400K. If TRSIZE is specified with an ATRAC request, it overrides the TRSIZE value in DMRBEX00.

**EXAMPLE**

For example, DMRBEX00 could specify

```
TARGET=DB2P
TRBUFF=20
TRSIZE=32K
```

Total pool size is 20×32K = 640K.
NOTE
If the trace is not logged, the data is truncated if more events are being traced for one transaction than fit in 2 buffers. To trace long-running batch programs, or to trace many lock events (DETAIL, LOCK), it may be necessary to increase TRSIZE or to log the trace.

Trace logging options

The following keywords define the defaults for a trace log data set allocation request:

TRPREFIX
defines the data set name prefix for trace log data sets if the value for the Log DSN option on the Start DB2 Trace Request panel is specified without quotation marks

If a value for TRPREFIX is not defined, the ID of the user requesting the trace is used.

TRREUSE
where Y (YES) requests data to be overwritten if a log data set is not reset

N (NO) indicates that data is not to be overwritten. The default is Y.

If the request specifies a 1 for the number of logs and N is defined for TRREUSE, data is not recorded. If the request specifies a 1 and Y is defined for TRREUSE, previous data recorded in the log is overwritten.

TRVOLS=(x, y, . . . )
where x or y indicates the ID of the default volumes for trace log data set allocation

Up to seven volumes can be specified. The default value that is specified in DMRBEX00 with the TRVOLS keyword is SYSDA.

TRCYL
defines the primary allocation default in cylinders (CYLS option) for trace log data sets

The default value is 3.

TRSUFFIX
defines the default suffix to add to the trace cluster DSN (Data DSN Suffix option) to make the data set name for the data component

The default value is D.

TRSMSSCL
defines the default name of the SMS storage class for trace log data set allocation

No default value exists.
TRMSDCL
defines the default name of the SMS data class for trace log data set allocation

No default value exists.

TRMSMCL
defines the default name of the SMS management class for trace log data set allocation

No default value exists.

Setting up and maintaining a trace directory

Before a request for trace logging can be started, a trace directory must be preallocated and initialized. This section describes how to set up the trace log directory by using sample members in the BBSAMP data set and BBPARM member BBIISP00.

NOTE
If a security management system is installed, you may need to grant the BBI-SS PAS authority to allocate trace log data sets dynamically.

Defining and initializing a trace directory data set

Each BBI-SS PAS contains one trace directory. The trace directory is a VSAM linear data set that contains one entry for each trace log data set. Each entry indicates the date and time of data set creation, the current status of the data set, the trace target, and other related information. Entries can be added to or deleted from the directory to allow trace logs to be moved between systems.

Use the following BBSAMP sample member to define and initialize the trace directory:

JXT001
defines and initializes the trace directory

1. Add your job card.

2. Update the symbolics as necessary.

3. Submit the job.
Identifying the trace directory to BBI

Use the following BBPARM member:

BBIISP00
identifies the trace directory to BBI

TRDIR=dsn, SUBSYS=ssss

where

dsn represents the data set name of a trace directory for MainView for DB2 trace logging (there is no default name)

The directory must be allocated and initialized before any trace can be started with trace logging. BBSAMP member JXT001, described previously, creates the trace directory.

ssss (optional) subsystem name to which this trace directory applies

Verifying trace directory entries

Trace directory entries are not updated automatically by events occurring outside of the BBI-SS PAS, such as data set deletion or archival. So, you may occasionally need to synchronize the trace directory information with the actual status of the data sets. Use the following BBSAMP member to verify, purge, or print directory entries.

NOTE
Because every entry in the trace directory is allocated dynamically and read to verify its current status, this process could run for some time.

JXT003 checks for the existence of a trace log data set in the system catalog

The use of PARM determines the action to be taken.

1. Add your job card.

2. Update the symbolics as necessary.

3. Specify the processing option for PARM:

Blank
If PARM is not specified (default), an uncataloged entry is marked as INV (INVALID).
**ARCVOL**
If ARCVOL (Archive Volser) is specified, this value is matched against the volser in the system catalog for each data set in the directory. If matched, the data set is not verified. This feature allows a site to bypass recalling all trace log data sets from archives. Use only the first six characters of the Archive Volser. For example, Volser=MIGRAT1 would become ARCVOL=MIGRAT.

**LIST**
This option lists the directory entries that are changed. If NOVERIFY is specified or implied, all entries are listed (equivalent to LISTALL).

**LISTALL**
This option lists all entries.

**NOLIST**
This option does not list changed entries.

**PURGE**
This option deletes any data sets in the directory that are invalid trace data sets.

**NOPURGE**
This option does not delete invalid data sets (marked as INV (INVALID) in the directory).

**VERIFY**
This option verifies each of the entries in the trace directory.

---

**NOTE**
If VERIFY is specified, the defaults are LIST, WRITE, and NOPURGE.

---

**NOVERIFY**
This option does not verify entries in the trace directory.

**WRITE**
This option updates the trace directory with status changes.

**NOWRITE**
This option does not update the trace directory with changes detected.

---

**NOTE**
If no PARM is specified, no action is taken.

---

4. Submit the job.
Managing trace log data sets

This section describes how to create and manage trace log data sets manually by using sample members from the BBSAMP data set.

Defining a trace log data set

You can define different trace logs as often as you need them, or you can let the BBI-SS PAS allocate them for you dynamically (see the JXT011 sample job description in the MainView for DB2 User Guide).

Archiving a trace log data set

A trace request can be defined to archive a log data set automatically when it is full, as described in the DZTBARC sample job description in the MainView for DB2 User Guide.

A trace log data set that is no longer active can be archived on demand by submitting this job manually.

Restoring an archived trace log data set

Use BBSAMP member DZTBRLOD to restore an archived trace log data set.

NOTE

You also can add the linear data set to the online trace directory and view the contents online. Use the NEW command on the History Traces application (Option 5) as described in the MainView for DB2 User Guide.

Printing a trace log data set

Use BBSAMP member DZTBTRAC to print a trace log data set. See the MainView for DB2 User Guide for a description of this sample job.

Printing from an online application:

You also can print a trace log data set from the History Traces application (Option 5) with the P line command when executing the terminal session from ISPF.

This process requires that you customize the skeleton JCL in member DZJPTRAC in the BBPROF data set. You can tailor this member to an individual user (UBBPROF data set) or site (SBBPROF data set). The data set must be defined in the CLIST that is used to execute the terminal session (MAINVIEW CLIST or a copy).
Use AutoCustomization to modify this member automatically or manually change the &DLIB variable to your BBLINK data set name.

Setting up standard traces for workload history

You can use the BBIISP00 member of the BBPARM data set to select a group of timer-driven monitor and trace requests to start automatically. These requests are defined in another member of the BBPARM data set. If you specify the default block request member BLKDMRW in BBIISP00 (TARGET=db2id,BLK=BLKDMRW), a starter set of monitors and two summary traces are requested:

- `REQ=ATRAC THRDHIST TYPE=SUMMARY TITLE='THREAD HISTORY'`
  - `STORAGE=4000K LOGTRAC=Y TRNUMDS=3 TRSWTIME=24:00`

This trace is a summary trace of the complete DB2 workload. It should be run as a standard request to provide viewing and printing of thread history. It is accessed in full screen mode from Option 4, TRACES, or in windows mode from the following locations:

- HTLOGs view hyperlink field **Number of Records**
- EZDB2 Easy Menu option **Current Traces**
- EZDBA Easy Menu option **Traces - Current / ST**

This trace adds very minimal overhead because it requires only the DB2 Accounting trace. The second line is a comment to show you how you could define trace logging to a group of three data sets, automatically switching to a new data set at midnight. Depending on your DB2 workload volume and operations procedures, you might need to modify some of the keyword values or specify other values. All options are defined in the BBPARM member BLKDMRKY. For more information, see the MainView for DB2 User Guide. To set default values for all traces, such as the volumes to be used for allocation, see “Specifying trace defaults” on page 52.

If you choose to capture accounting data in the MainView for DB2 - Data Collector to support batch processing, you might want to keep a shorter online history in THRDHIST for quick analysis with the MainView for DB2 trace displays. Both THRDHIST and the MainView for DB2 - Data Collector data are available for online analysis through the Thread Workload History views. Because the MainView for DB2 - Data Collector data is compressed, you might be able to keep more history available online through this option. You can use drilldown options to view the detailed accounting records for a selected interval.
Although many options are available, you have basically two ways to set up a continuously logging trace, and you must evaluate your system characteristics before choosing which is better.

— The first method uses automatic allocation of one or more new trace log data sets each time the trace request is started (at BBI-SS PAS startup), as shown in the preceding example. No DSN is specified, so that the generated name will always be unique (specifying TRPREFIX in DMRBEX00 defines the hilevel node).

This method can be used if MVS and the BBI-SS PAS are rarely brought down. The only consideration is that if the log allocation fails, perhaps because of lack of space, the trace request also fails.

— The second method is to set up a group of preallocated logs (any number of them) that are continually reused. An archive job can be defined to run automatically (log full, log switched, or trace complete) to save the data and mark that log for reuse. Each time the BBI-SS PAS starts, and this trace request is started, the next available log with the oldest data is chosen automatically for output.

This method uses fewer online log data sets. However, if you require archiving, this method might require intervention after any unplanned outage of MVS or the BBI-SS PAS, because the archive job on the current log cannot run. If you do not require archiving, specify TRREUSE=Y to allow overwriting of a log without it being reset.

**NOTE**

If you have a very high volume of threads in some DB2 subsystems, you might want to reduce the amount of data that you keep on THRDHIST trace logs and set up the Data Collector to provide continuous collection of thread history. Both the collection and storage are optimized to handle large volumes, although you need to use the Data Collector administration panels to adjust the number and size of the active trace data sets to handle the expected volume. The archive process creates files compatible with SMF data.

**REQ=ATRAC BIGELAP TYPE=SUMMARY ELAP=10.0**

This example is of an exception trace that captures only those transactions or queries that ran longer than 10 seconds. More exception filters can be added, or workload selection criteria can be added, such as **DB2CONN=cicsjobname**.
Setup recommendations

You should consider several points before the Application Trace is heavily used.

- Set the dispatching priority of the BBI-SS PAS higher than DB2.

  This setting is most important for the DB2 DBM1 and MSTR address spaces. It is not necessary for IRLM. If the BBI-SS PAS does not get enough resources to complete its work in a reasonable time period, U3912 or U3920 timeout abends can result. These abends are recoverable, but disruptive.

  This setting is recommended for most monitoring functions, but it is most important for detail traces. When a detail trace is requested by the user, MainView for DB2 starts a DB2 trace by using the Instrumentation Facility Interface (IFI). DB2 GETMAINs a buffer in ECSA and uses this buffer to pass the detail data to MainView for DB2. If MainView for DB2 processing cannot keep up with the DB2 activity (transferring the filled buffer), trace data is lost.

- Evaluate whether to increase the BBI-SS PAS region size.

  The data buffers MainView for DB2 uses to collect and store trace data are all GETMAINed in the Extended Private Area (EPVT) of the BBI-SS PAS. The usual MVS default size of EPVT is 32 megabytes; this size can be increased by specifying a larger REGION parameter in the BBI-SS PAS startup JCL (SSJCL). This value is an upper limit, not an allocation at startup; the extra storage is GETMAINed only when required for trace requests. If the BBI-SS PAS is monitoring multiple DB2s and you plan to run several concurrent detail traces, a size of 60 megabytes to 100 megabytes is recommended. Depending on the trace buffer specifications used, the usage of EPVT per DB2 (to support any number of summary traces and the maximum of four detail traces) can vary between 3 megabytes to 40 megabytes or more. Check the following buffer descriptions to estimate your average and maximum storage requirement.

- Adjust the trace buffer storage defaults per target DB2.

  Four kinds of buffers are available:

  — IFIBUFF

  The buffer GETMAINed by MainView for DB2 in BBI-SS PAS EPVT and the OPx buffer obtained by the DB2 IFC in ECSA for each DB2 –START TRACE request issued. One of each type of buffer is used for all summary traces, workload monitors, and lockout IFCIDS. One of each buffer type is used for a maximum of four detail traces. The default size of 256 KB is normally adequate.
NOTE

DB2 allocates up to eight OPx buffers, one for each unique OPx destination, with a maximum size of 16 MB. An OPx buffer is not freed when the MainView for DB2 trace is stopped. It is reused when another DB2 - START TRACE request uses the same OPx destination. If the DB2 Monitor Trace is stopped manually or if the BBI-SS PAS is shutdown, the OPx buffer is freed.

— STORAGE buffer

The online display buffer GETMAINed by MainView for DB2 in the BBI-SS PAS EPVT for each trace request, whether summary or detail. This buffer is kept as long as the trace is active or complete so you can view the data. It is freed when the trace is purged from the Current Traces list. The size of this buffer determines the amount of trace data you can view from a current trace (more data may be available from History Traces if the trace was logged). A value of 400K to 2000K (2 megabytes) is recommended. This value can be defined per DB2 in BBPARM member DMRBEX00.

For a detail trace, the default size is automatically adjusted to at least 4 times TRSIZE.

— TEMPORARY USER DISPLAY buffer

One buffer is GETMAINed by MainView for DB2 in the BBI-SS PAS EPVT for each user who is viewing a trace display. It is slightly larger than the STORAGE buffer. (This buffer is not under user control.)

— DETAIL TRACE EVENT CAPTURE buffers

Multiple buffers are GETMAINed by MainView for DB2 in the BBI-SS PAS EPVT for each detail trace request. The number and size are controlled by the TRBUFF and TRSIZE parameters. The buffers are released when the detail trace is stopped (data collection complete) or purged. These values are also specified per DB2 in DMRBEX00. The defaults are TRBUFF=0, TRSIZE=400K. TRSIZE=200K usually allows tracing of three to four concurrent threads at the SQL level; however, the defaults should be increased for the following conditions:

— Most tracing is of online transactions, where many concurrent threads must be traced.

**Action:** Increase TRBUFF to three times the expected number of threads.

— Most tracing is of long-running applications, or more event types are often traced (SCANS, I/O, LOCKS).

**Action:** Increase TRSIZE to 400K (and reduce TRBUFF if possible).
You need to balance all these parameters to control total storage usage. Review TRLIM to ensure that it allows for the allocations caused by the revised STORAGE, TRBUFF, and TRSIZE parameters.

- Adjust the default for trace log data set size.

Increase TRCYL (default is three cylinders) when longer detail traces with many events per thread are run frequently (long-running jobs/extra event types). For this type of trace, logging is recommended and is requested by default (LOGTRAC=Y). Without logging, data capture per thread is limited to two buffers of TRSIZE. With logging, multiple buffers can be written per thread and combined automatically when recalled online or printed. Note that some data can be lost for one thread if events span two data sets.

Customizing background processing

This section describes how to customize the background processing for product functions set up by the administrator to run continuously without user intervention. This customization includes

- exceptions and runaway query messages
- DB2 message logging
- early warning monitors

**NOTE**

Workload history traces are described in “Setting up standard traces for workload history” on page 60.

Parameter specifications in the DMRBEX00 member of the BBPARM data set customize the first two features, which are activated at BBI-SS PAS startup. To change any of the exception processing criteria when a BBI-SS PAS is active, edit the DMRBEX00 member and then issue the following BBI control command:

```
.RESET PARM DMRBEX00
```

to activate the changes. (See the MainView Administration Guide.)
Controlling exception messages from background samplers

Background sampling is used to detect exception conditions in critical DB2 system resources (such as the logs or buffer pools) and also to detect thread exceptions during execution (runaway queries) that could be serious enough to impact DB2 performance.

Exception messages are shown on the DB2 Exception panel (DB2EX service) while the condition exists, and are displayed chronologically on the LOG DISPLAY.

By default, exceptions are activated. To control the number and type of exceptions for which the background sampler scans, specify the criteria for any background sampler message in BBPARM member DMRBEX00. For any specified target (the default is the first target defined in BBPARM member BBIJNT00), you can inactivate or control the conditions for a specific message. In this example:

TARGET=DB2X
MSG=DZ0630W,CPUTOT=2000,GPTOT=1000,CYCLES=3

if a TSO query is using more than 2 seconds of CPU time or if there are more than 1000 GETPAGES and if either or both of these two conditions have been true for the last four cycles, the message DZ0630W identifying that TSO user is displayed on the DB2 EXCEPTION panel and on the associated BBI-SS PAS’s LOG DISPLAY panel.

---

**NOTE**

At present, a cycle is defined as approximately 5 seconds.

See BBPARM member DMRBEX00 for a complete description of options and syntax, and DMRBEXBB for definitions of each exception condition. DMRBEX00 also includes instructions for disabling a particular message or message threshold. See the *MainView for DB2 User Guide* for a list of all exception messages and a description of the conditions that are detected.

Logging DB2 messages

All DB2 messages that are issued to the system console from selected target DB2 subsystems can be captured and written to the BBI-SS PAS Journal log. This function is defined in BBPARM member DMRBEX00. The default is to not capture the DB2 messages (LOG=NO). To activate their capture for a specified target, specify LOG=YES. For example,
Setting up and refining standard early warning monitors

TARGET=DB2X
LOG=YES
TARGET=DB2Y
LOG=NO

logs the messages from DB2X and not from DB2Y.

**NOTE**
This setting cannot be changed dynamically, because it is queried only at initialization time. The RESET command does not change this parameter.

To process the DB2 messages when a MainView AutoOPERATOR product is installed with MainView for DB2, specify rules with

ORIGIN=DB2

Setting up and refining standard early warning monitors

Monitors are timer-driven services that measure key DB2 resource or workload variables over time. Exception conditions are detected based on user-specified thresholds, which allow early warning of system problems. Recent history of the measurements is kept online for trend analysis. Warning messages are sent to the STEXC view, the DB2 Exception panel (DB2EX service), and to the LOG DISPLAY, just like the background sampler exceptions.

A standard set of monitors can be defined to be started automatically per DB2 subsystem. The BBIISP00 member of BBPARM allows the specification of another BBPARM member containing a block of predefined monitor and trace requests. The standard customization steps in AutoCustomization, or the manual procedures described in the *MainView Common Customization Guide*, define a sample set of monitors to be activated (member BLKDMRW).

After these monitors have been activated and have collected sufficient history, the warning thresholds should be reviewed and adjusted for each DB2 target, so that the proper exceptions will be triggered, as follows:

1. Select the plot of recent history for each active monitor from the Active Timer Requests panel (Option 3).

2. Compare the threshold (shown with a vertical line of Ws if defined) to the average values measured (top three lines of the graph), and also to the maximum value measured (shown at the bottom of the graph, either alone or as the highest value in the range distribution).

3. Adjust the threshold so that a warning is triggered only when the condition is serious enough to warrant attention.
Other monitor services can be added over time to the standard set. As other problem conditions are encountered in DB2 or the system profile changes, spend a few minutes on prevention by reviewing the available monitors and background samplers to define an early warning that could reduce or avoid future occurrences of system degradation.

Creating alerts from monitor exception messages

MainView provides alert views that consolidate exception messages from multiple products, and include user-defined alarms (MainView Alarm Manager) and MainView AutoOPERATOR alerts. If MainView AutoOPERATOR is not used to post MainView for DB2 exception messages as alerts, you can request that MainView for DB2 create the alerts automatically, including both monitor and background monitor exceptions. This request is made per DB2 with the ALERTQ operand on the TARGET statement in the BBPARM member BBIISP00. For more information about this statement, see the MainView Common Customization Guide.

Alerts are posted to the views by using the specified queue name, and the alert is removed automatically when the warning condition is resolved. By choosing an alert queue name that can be used consistently for both MainView for DB2 monitors and alarms, such as “DB2” or “MVDB2,” you can focus on just the DB2 messages in that queue when needed. Each alert entry shows the exception message and provides a hyperlink to a related view to simplify analysis of the problem that is causing the alert.

NOTE

If these exception messages are already being processed into alerts by MainView AutoOPERATOR rules for Journal messages, this parameter is not needed. Specifying it could cause duplicate alerts.

Customizing DB2 services

BBI has a modular, table-driven design so that you can easily tailor DB2 to meet specific needs. This section describes how to modify the analyzer, monitor, and trace services. The focus of this section is on security—how to restrict which services a user sees.
Modifying a service

The services are defined in service tables that specify their characteristics. You can modify service characteristics dynamically by altering the service table entries. Service tables are located in BBLINK library load modules.

Use BBPARM member IMFSTD00 (service table definition member) to change the characteristics of any service. Any changes placed in IMFSTD00 are used to dynamically modify services when your system is started.

The two characteristics that can be changed are the security and title specifications. See “Security for analyzer, monitor, and trace services” on page 92 before changing these specifications.

NOTE
You can restrict users to see only those services that they are allowed to access. This restriction enhances security by simplifying the choices presented to the user. BBSAMP member DMRSTD00 is an example of how to set up the security codes by DB2 functional area (such as user activity or buffer pools) and relate these codes to user groups (such as DBAs or system programmers). See “Service selection lists by user group” on page 92.

Service table definition

Use BBPARM member IMFSTD00 to change the specifications of existing services. The following rules apply when creating IMFSTD00:

- A BBIPARM DD statement must exist in the BBI-SS PAS jobstream and it must contain the member IMFSTD00.

- All 80 columns of each statement can be used for specifying the various keywords and their values. Sequence numbers can be placed in columns 73 to 80, but at least one blank must exist between the last specification and the sequence number.

- All the keywords needed to modify a given service can be either specified on one statement or split over multiple statements.

- A specific keyword and its value or values must be contained in the same specification statement.

- Comments are designated with an asterisk (*) in column 1. Comment statements can be interspersed with specification statements.

- Comments are allowed within specification statements if one blank separates the specification from the comment.
Commas can be used as delimiters in statements; leading blanks are ignored.

The REQUEST keyword must appear first in a statement and must be followed immediately by the SERVICE keyword and then by the DB2REL keyword.

If any syntax errors are found in a request to modify a service, the accepted keywords up to the error are used to execute a partial change to the service table.

Table 9 lists the valid keyword parameters for IMFSTD00 and describes the syntax for each.

**Table 9  Service table keywords and parameters**

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Keyword description</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>REQUEST</td>
<td>identifies the start of a new service table entry change</td>
<td>MODIFY specifies that an existing service definition is to be changed</td>
</tr>
<tr>
<td>SERVICE</td>
<td>identifies the name of the service to be modified</td>
<td>xxxxx specifies a 1- to 5-character service name It must be an existing service name.</td>
</tr>
<tr>
<td>DB2REL</td>
<td>identifies the release level of the service to be modified</td>
<td>nnnn specifies the DB2 release as one of the following values: 0810 (DB2 8.1) 0910 (DB2 9.1) 1010 (DB2 10) This parameter is required and must follow the SERVICE parameter.</td>
</tr>
<tr>
<td>TITLE</td>
<td>identifies the title to be given to a service</td>
<td>x......x specifies a 1- to 24-character title, which changes the existing title Begin and end the title with single quotation marks if it contains blanks or commas.</td>
</tr>
<tr>
<td>ACCESS</td>
<td>identifies the access code that is required to use this service</td>
<td>A (any alphabetic character A through Z) specifies the access code that is matched with the user’s authorized access code See the PMACC keyword in BBPARM USERID members.</td>
</tr>
</tbody>
</table>

For example:

REQUEST=MODIFY,SERVICE=DB2EX,DB2REL=0810,ACCESS=B
changes the security access code of an existing service.

Customizing Performance Reporter

To produce batch reports, you must first customize the MainView for DB2 Performance Reporter component. This task includes running jobs to extract data from SMF; running reports from the extracted data; and loading, managing, and reporting from data in DB2 tables.

**NOTE**

To use the Data Collector batch reporting facilities, no initial customization is required. See “Data Collector Reporting Facilities” in the MainView for DB2 Performance Reporter User Guide for information on producing these batch reports. For information about how to set up archiving of the Data Collector trace data sets for use as input to batch reporting, see the System and SQL Performance for DB2 Administrator Guide.

Two installation methods are available: the IBM LOAD method, where each table is in its own table space, and the LOADPLUS method, which works with the BMC Software LOADPLUS product by having all tables in one table space. If you have the LOADPLUS product, you should analyze your environment to see if using LOADPLUS would be beneficial.

BMC Software provides AutoCustomization procedures, described in the MainView Installation Guide, so that you can tailor your product automatically. Using the AutoCustomization procedures is preferred. The Performance Reporter is defined as a separate AutoCustomization dialog to simplify its use whenever you are ready to set up your batch processing. If you need any help during AutoCustomization, refer to the manual customization step described in this section.

This section describes the steps for tailoring your product manually. If you have installed your product using AutoCustomization, you do not need to read this section.

Appendix C, “Estimating storage for Performance Reporter data” describes how to determine the storage needed for statistics and accounting data. Table 10 on page 71 briefly lists each of the customization steps.
Table 10  Performance Reporter customization checklist

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<td>2. Specify operational defaults, page 73</td>
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<td></td>
<td>17. Tailor DOM archive Performance Reporter table load JCL, page 90</td>
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</tbody>
</table>

**NOTE**

Data Set Usage:

AutoCustomization creates UBBPARM and UBBSAMP data sets that are copies of the distributed BBPARM and BBSAMP. (See “Using product libraries” on page 45.) Modifications that are made to members in these user libraries are not overlaid by later maintenance to the SMP target libraries. If you are customizing your product manually, you should create UBBPARM and UBBSAMP data sets and copy BBPARM to UBBPARM and BBSAMP to UBBSAMP.
**TIP**

DB2 object names:

The sample members that are used in the following steps are set up by using default DB2 object names. If you change any of these names to follow site conventions, you must change every occurrence of that object name in other sample members. Each step that creates an object refers to the other members where this name is used. However, the easiest way to ensure that all occurrences are changed is to use the provided utility (DZPRUCNV) that scans the required data sets and changes all identified text strings. To use this program, modify the DZPRUPRM and DZPRUJCL samples in UBBSAMP. (See “Using product libraries” on page 45.)

**DZPRUJCL**
Modify the JCL in DZPRUJCL to site standards.

**DZPRUPRM**
This sample contains change statements for each object name, which are initially set up as

\[ \text{OLD} = \text{default-object-name}, \text{NEW} = \text{default-object-name} \]

You need to update only the NEW keyword value to specify the object name that you want. You can read through the steps and specify all the changes at once or run the utility as many times as you want, specifying one or more changes to be made. This utility can also be used to modify job defaults in each of the following definition jobs; for example, DB2 subsystem ID.

You need to change \text{P=NOWRITE} to \text{P=WRITE} on the DZPRUJCL PROC statement to cause updates to occur.
Step 1: Determine which method to use

If you have the BMC Software LOADPLUS utility, there may be advantages to using it during table load. Analyze your environment thoroughly before deciding whether to use the BMC LOADPLUS method or IBM LOAD method.

Step 2: Specify operational defaults

This step defines the parameters needed for the allocation of all jobs that are used for MainView for DB2. If this step was done during AutoCustomization for MainView for DB2, a COMPLETED status is shown. A COMPLETED status means you do not need to go through this step.

Step 3: Specify performance defaults

This step defines the parameters needed for dynamic allocation of other jobs that are used during Performance Reporter customization.

1. As an option, create a member containing a valid JCL job card in a data set that is not a BMC Software product target or distribution library, such as UBBSAMP.

   This member can then be added to each sample job that is used for Performance Reporter customization as instructed in the steps that follow.

2. Define a unit ID for temporary data set allocation parameters and a unit ID for permanent data set allocation parameters.

Step 4: Obtain SYSADM/SYSCtrl privilege

Obtain the necessary privileges on the DB2 system that is to contain the DB2 objects referenced in the following steps.
Step 5: Define STOGROUP usage

You have various options for STOGROUP usage:

- Create a new STOGROUP for Performance Reporter.

  Edit member DPCSTOW in UBBSAMP, as follows:

  1. Replace the characters, STVLQQ, to specify one (or more) VOLSER.

  2. Replace Y characters with the high-level index name (VCATNAME) for the VSAM data sets to be created by DB2.

  3. Change the STOGROUP default DMRPRSG1 name to site conventions if necessary.

    If you change the STOGROUP name here, specify the same STOGROUP name in the samples that are used in “Step 6: Define database usage” on page 75 and “Step 8: Generate CREATE statements” on page 77.

- Use an existing STOGROUP.

  Specify the STOGROUP name, by using the DZPRUCNV utility with the DZPRUJCL and DZPRUPRM samples.

  **NOTE**

  If you use AutoCustomization, an empty member, DPCSTOW, is created in the UBBSAMP data set. If you do not use AutoCustomization, all DPCSTOW references in the following steps must be deleted manually.

- Do not use a STOGROUP.

  Define all data sets for table spaces outside the context of DB2 with IDCAMS DEFINE statements for VSAM clusters by using the proper DB2 naming conventions.

  **NOTE**

  If you use AutoCustomization, an empty member, DPCSTOW, is created in the UBBSAMP data set. If you do not use AutoCustomization, all DPCSTOW references in the following steps must be deleted manually.
Step 6: Define database usage

This step defines a unique database for the Performance Reporter tables. Use one of these options:

- Create a new database for Performance Reporter.

  Edit member DPCDB in UBBSAMP, as follows:

  1. If you changed the STOGROUP name in “Step 5: Define STOGROUP usage” on page 74, change the STOGROUP name in this sample to the same name.

  2. (optional) Change the default DMRPRDB1 database name to conform to your site’s naming conventions if necessary.

     To change the default name to your site standards, use the DZPRUCNV utility with the DZPRUJCL and DZPRUPRM samples.

- Use an existing database.

  If you use AutoCustomization, an empty member, DPCSTOW, is created in the UBBSAMP data set. If you do not use AutoCustomization, all DPCSTOW references in the following steps must be deleted manually.

- Use the default DB2 database.

  If you use AutoCustomization, an empty member, DPCDB, is created in the UBBSAMP data set. If you do not use AutoCustomization, all DPCDB references in the following steps must be deleted manually.
Step 7: Define table space usage (BMC LOADPLUS method only)

This step defines a unique table space for the Performance Reporter tables. Use one of these options:

- Create a new table space for Performance Reporter Edit member DPCSPLP in UBBSAMP as follows:

  1. If you changed the STOGROUP name in “Step 5: Define STOGROUP usage” on page 74, change the STOGROUP name in this sample to the same name.

  2. (optional) Change the default DMRPRSP1 table space name to conform to your site’s naming conventions if necessary.

     To change the default name to your site standards, use the DZPRUCNV utility with the DZPRUJCL and DZPRUPRM samples.

- Use an existing table space.

    **NOTE**

    If you use AutoCustomization, an empty member, DPCDB, is created in the UBBSAMP data set. If you do not use AutoCustomization, all DPCDB references in the following steps must be deleted manually.

- Use the default DB2 table space.

    **NOTE**

    If you use AutoCustomization, an empty member, DPCDB, is created in the UBBSAMP data set. If you do not use AutoCustomization, all DPCDB references in the following steps must be deleted manually.

Examine the space allocations performed for compatibility with the volumes you plan to use.
**Step 8: Generate CREATE statements**

This step generates the CREATE statements for the tables, table spaces, and indexes that are required for Performance Reporter. If you are using the BMC LOADPLUS method, change the table space name in the CREATE TABLE and CREATE INDEX statements in the DPCTXxxyy members, and do not change the DPCSxxxyy members.

1. *(optional)* Change the default names in the samples shown in Table 11 to conform to your site’s naming conventions if necessary (see “Using product libraries” on page 45).

To change the default names to your site standards, use the DZPRUCNV utility with the DZPRUPRM and DZPRUJCL samples.

---

**NOTE**

For those users who are migrating from a previous release, the DMRABDTL, DMRABSM2 and DMRABSUM tables have been added with new detail and summary accounting buffer records.

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**Table 11  List of Performance Reporter tables (part 1 of 3)**

<table>
<thead>
<tr>
<th>Default table name description</th>
<th>Default table space name</th>
<th>Create table space/table member (UBBSAMP)</th>
<th>Report members (BBPARM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMRPR.DMRACDTL (detail accounting table)</td>
<td>DMRPRTAD</td>
<td>DPCSACDT DPTACDT</td>
<td>ACxxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRACSUM (summary accounting table)</td>
<td>DMRPRTAS</td>
<td>DPCSACSM DPTACSM</td>
<td>SAxxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRACSM2 (summary-2 accounting table)</td>
<td>DMRPRTA2</td>
<td>DPCSACSM2 DPTACSM2</td>
<td>SAxxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRABDTL (detail buffer accounting table)</td>
<td>DMRPRTID</td>
<td>DPCSABDT DPTABDT</td>
<td>ACxxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRABSUM (summary buffer accounting table)</td>
<td>DMRPRTIS</td>
<td>DPCSABSM DPTABSM</td>
<td>SAxxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRABSM2 (summary-2 buffer accounting table)</td>
<td>DMRPRTI2</td>
<td>DPCSABSM2 DPTABSM2</td>
<td>SAxxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRADDTL (detail DDF accounting table)</td>
<td>DMRPRTDD</td>
<td>DPCSADDT DPTADDT</td>
<td>ACxxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRADSUM (DDF summary accounting table)</td>
<td>DMRPRTDS</td>
<td>DPCSADSM DPTADSM</td>
<td>SAxxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRADSM2 (DDF summary-2 accounting table)</td>
<td>DMRPRTD2</td>
<td>DPCSADSM2 DPTADSM2</td>
<td>SAxxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRAPDTL (detail package accounting table)</td>
<td>DMRPRTPD</td>
<td>DPCSAAPDT DPTAPDT</td>
<td>ACxxxxxx</td>
</tr>
</tbody>
</table>
### Table 11  List of Performance Reporter tables (part 2 of 3)

<table>
<thead>
<tr>
<th>Default table name description</th>
<th>Default table space name</th>
<th>Create table space/table member (UBBSAMP)</th>
<th>Report members (BBPARM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMRPR.DMRAPSUM (package summary accounting table)</td>
<td>DMRPRTPS</td>
<td>DPCSAPSM DPCTAPSM</td>
<td>SAxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRAPSM2 (package summary-2 accounting table)</td>
<td>DMRPRTPP2</td>
<td>DPCSAPSM2 DPCTAPSM2</td>
<td>SAxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRSTAT (detail statistics table)</td>
<td>DMRPRTSS</td>
<td>DPCSSTDT DPCTSTDT</td>
<td>STxxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRSTSM2 (summary-2 statistics table)</td>
<td>DMRPRTT2</td>
<td>DPCSSTS2 DPCTSTS2</td>
<td>SSxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRSTDF (DDF detail statistics table)</td>
<td>DMRPRTSTF</td>
<td>DPCSSTSD DPCTSTSD</td>
<td>STOVDFT</td>
</tr>
<tr>
<td>DMRPR.DMRSDSUM (DDF statistics summary table)</td>
<td>DMRPRTFS</td>
<td>DPCSSTSF SM DPCTSTSF</td>
<td>STOVDFT</td>
</tr>
<tr>
<td>DMRPR.DMRSDSM2 (DDF statistics summary-2 table)</td>
<td>DMRPRTF2</td>
<td>DPCSSTSF2 DPCTSTSF2</td>
<td>SSxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRSTSUM (summary statistics table)</td>
<td>DMRPRTTS</td>
<td>DPCSSTSM DPCTSTSM</td>
<td>SSxxxxx</td>
</tr>
<tr>
<td>DMRPR.DMRSTADT (storage address space table)</td>
<td>MMRSTADT</td>
<td>DPCTSTADT</td>
<td>not applicable</td>
</tr>
<tr>
<td>DMRPR.DMRSTSDT (storage system table)</td>
<td>DMRSTSDT</td>
<td>DPCTSTSDT</td>
<td>not applicable</td>
</tr>
<tr>
<td>DMRPR.DMRAUSUM (audit summary table)</td>
<td>DMRPRAUS</td>
<td>DPCSASUM SM DPCTSAUSM</td>
<td>AUSUM AUDTL</td>
</tr>
<tr>
<td>DMRPR.DMRAUFAL (authorization failures table)</td>
<td>DMRPRAUF</td>
<td>DPCSAAFL DPCTAAFL</td>
<td>AUFAIL</td>
</tr>
<tr>
<td>DMRPR.DMRAUGRV (authorization control - GRANTS / REVOKEs table)</td>
<td>DMRPRAUG</td>
<td>DPCSAAUGR DPCTAUGR</td>
<td>AUDGRV</td>
</tr>
<tr>
<td>DMRPR.DMRAUDDL (DDL access table)</td>
<td>DMRPRAUD</td>
<td>DPCSAAUDL DPCTAAUDL</td>
<td>AUDDL</td>
</tr>
<tr>
<td>DMRPR.DMRAUDML (DML access table)</td>
<td>DMRPRAUM</td>
<td>DPCSAAUDM DPCTAUDM</td>
<td>AUDML</td>
</tr>
<tr>
<td>DMRPR.DMRAUDMB (DML at BIND table)</td>
<td>DMRPRAUB</td>
<td>DPCSAAUDB DPCTAUBD</td>
<td>AUDMLB</td>
</tr>
</tbody>
</table>
Step 8: Generate CREATE statements

2. If you changed the STOGROUP name in “Step 5: Define STOGROUP usage” on page 74, change the STOGROUP name in the DPCSxxxx sample members to the same name.

3. Customize the table definitions.

The following table customization applies to all tables, both detail and summary.

A. Determine the data that you do not want stored, such as

- entire tables not used at your site

  For example, the detail accounting table does not need to be created if you summarize accounting data and only load summary data.

- DDF data

  If your site does not use DDF or DRDA, you do not need to create any DDF tables or reports.

- package accounting data

  If your site does not run with accounting trace class 7/8 active, you do not need to create any package accounting tables.

- data collected by Performance Reporter that is not used in any Performance Reporter reports and that is not needed for special reports at your site

  “Part 3. Performance Data Tables” of the MainView for DB2 Performance Reporter User Guide describes the data that is used in the Performance Reporter reports.

- columns in Performance Reporter tables that are meaningful only if data sharing is used at your site

- columns in Performance Reporter tables not used for reporting at your site

Table 11  List of Performance Reporter tables (part 3 of 3)

<table>
<thead>
<tr>
<th>Default table name description</th>
<th>Default table space name</th>
<th>Create table space/table member (UBBSAMP)</th>
<th>Report members (BBPARM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMRPR.DMRAUCHG (authorization ID change table)</td>
<td>DMRPRAUC</td>
<td>DPCSVAUCH</td>
<td>AUCHNG</td>
</tr>
<tr>
<td>DMRPR.DMRAUUTL (utility access table)</td>
<td>DMRPRAUU</td>
<td>DPCSAUUT</td>
<td>AUUTIL</td>
</tr>
</tbody>
</table>
Step 8: Generate CREATE statements

- COMMENT ON statements for Performance Reporter columns
- CREATE INDEX columns that are not used in any sample reports, but do not delete the CREATE INDEX for the index ending in RIDX that uses the ROWID column

B. Use the samples starting with a DPCT prefix (TABLE CREATE members) to remove

- unwanted tables

Remove the utility statements that create the table, table space, and table index, and grant SELECT ACCESS to that table to PUBLIC.

**NOTE**
The member names must also be removed in the DPJCREAT or DPJCRELP sample JCL (see “Step 9: Create DB2 objects” on page 82).

- columns not used in any distributed report

Each member contains a column name, DMRAUTOCUST, that marks the beginning of optional columns for that table. AutoCustomization uses this column to delete the remaining column definitions if you request only the columns used in the distributed reports.

- data sharing and global locking columns

Each member contains a column name, DMRACSHARE, that marks the beginning of data sharing and global locking columns for that table. AutoCustomization uses this column to delete the columns up to the DMRAUTOCUST column definition if you request to exclude data sharing columns.

- long name columns

Each member contains a column name, DMRAUTOLONG, that marks the beginning of long name columns for those columns that also have short name equivalents in that table. If you choose to exclude long name columns, AutoCustomization deletes the columns following the DMRAUTOLONG column.

- unwanted columns

Remove the control statement that creates the column name. *Do not delete the ROWID columns.*
Step 8: Generate CREATE statements

NOTE
If you remove a column name, you must also remove the corresponding COMMENT ON statement.

This table customization applies to all tables, both detail and summary.

NOTE
New column names are not supported. While it is possible to remove existing columns, it is not possible to add new ones.

- COMMENT ON statements
  Remove any or all COMMENT ON statements. AutoCustomization can optionally remove all COMMENT ON statements for you.

- unused CREATE INDEX columns
  Each member has a CREATE INDEX statement with index column names. Index column names after DATETIME are not used in any sample Performance Reporter reports and may be removed if not used by any special reports at your site. Any index column names preceding and including DATETIME must be kept to avoid processing of duplicate keys in Performance Reporter. AutoCustomization can optionally remove unused CREATE INDEX statement column names for you.

NOTE
If you want to create only the summary statistics tables that are new for MainView for DB2 10.1, edit the DPJCREAT or DPJCRELP job (see “Step 9: Create DB2 objects” on page 82) and remove references to all of the other tables. You must then run the DPJALTER job to update the other tables.

C. Examine the space allocations performed by each DPCSxxxx sample for compatibility with the volumes you plan to use.

D. COMPRESS YES is specified. Review for applicability in your environment.

E. To create segmented table spaces instead of simple table spaces, uncomment the line that contains the SEGSIZE clause and replace the 0 with a valid segment size value.
Step 9: Create DB2 objects

This step submits a job to execute the CREATE statements for the DB2 objects that are generated in the preceding steps.

Alternatively, you can bypass creating the Performance Reporter tables and, instead, alter the MainView for DB2 9.1 tables, as described in “Step 10: Migrate DB2 tables” on page 83.

Edit member DPJCREAT (IBM LOAD method) or DPJCRELP (BMC LOADPLUS method) and run it on the same DB2 system where the objects are to be created:

```
DPJCREAT/DPJCRELP
```

a two-step allocation job

The first step allocates a spin file that is required by the DPRSMF job, which extracts DB2 SMF records and loads the data into the Performance Reporter tables. If you do not use AutoCustomization to install MainView for DB2, you will need to create the spin file by using the JCL in the BBSAMP member DPRSPIN.

The second step defines the storage group, database, table spaces, tables, and indexes that are used to store the performance data. DPJCREAT/DPJCRELP also grants SELECT authority to PUBLIC.

1. Add your job statement.

2. Change the HIDP parameter to the high-level qualifier of your BMC Software product libraries.

3. Verify that the HIDB2 parameter is the correct prefix for your DB2 library names.

4. Specify the UNIT and VOL parameters. These parameters are used to allocate a small permanent data set used by the SMF extractor.

5. Submit the job.
Step 10: Migrate DB2 tables

This step optionally submits jobs to migrate existing Performance Reporter accounting and statistics tables to the new version of MainView for DB2.

There are two migration methods; you can either alter the MainView for DB2 9.2 tables or migrate the data from the MainView for DB2 9.2 tables to the newly created tables, as described in the following sections.

Method 1: Alter existing tables

To alter the existing Performance Reporter tables, use the following job:

```plaintext
DPJALTER
a two-step job
```

AutoCustomization includes an optional step to alter the MainView for DB2 9.2 tables.

The first step builds part of the input stream; the second step invokes the DB2 DSNTEP2 utility to add columns to existing tables and to create new indices. You can edit the DPALxxxx members in BBSAMP to remove columns that you do not want to add, however, leave all of the fields after the `new identifier` comment.

1. Add your job statement.

2. Update the symbolics as necessary.

3. Submit the job on the DB2 system with the existing Performance Reporter tables.

After running DPJALTER, the tables DMRAUFAL, DMRAUGRV, DMRAUDDL and DMRAUDMB are left in an advisory REORG-pending (AREO) status, due to a change in the length of the SQLTEXT column from 3200 to 4000. You can perform either a REORG TABLESPACE or a REPAIR TABLESPACE to clear the advisory status.

**NOTE**

The ALTER statements in the DPALxxxx members in BBSAMP are cumulative. If the column is already present when you execute the ALTER statements, you might get the SQL return code:

```
-612 column-name IS A DUPLICATE COLUMN NAME
```

After running the batch job DPJALTER, the necessary columns will be added to the Performance Reporter tables.
Method 2: Migrate data to newly created tables

After you have created the Performance Reporter tables as described in “Step 9: Create DB2 objects” on page 82, use the following job to migrate the existing tables to the new tables:

DPJMIGR
a four-step job

AutoCustomization includes an optional step to migrate data from MainView for DB2 9.2 tables to MainView for DB2 10.1 tables.

The first step of DPJMIGR unloads data from existing DB2 tables. The second and third steps convert the data to new formats. The final step loads data into new DB2 tables.

Two separate files are needed for each step to separate unloaded data of the same record types. Summary accounting records and TYPE=BUFFER records are in a separate file than detail accounting records and TYPE=STAT records and are processed by a separate migration step. Multiple tables can be migrated in a single run.

If very large tables are to be migrated, use the UNLDSTART and UNLDEND parameters in the first unload step to break the work into multiple jobs that process only a subset of the data.

DPJMIGR uses the DB2 Load Utility, DSNUTILB, to load the DB2 tables. If you want to use a different utility, you must modify the DPJMIGR JCL. The utility must be able to interpret LOAD control statements in the same format that DSNUTILB uses.

1. Edit member DPJMIGR in UBBSAMP.

2. Run DPJMIGR on the DB2 systems with the existing Performance Reporter tables and new Performance Reporter tables.
Step 11: Bind the processing plan

This step binds the plan that processes all performance data (SMF extract, summarization, or purge).

Edit member DPJBIND in BBDBRM and bind the processing plan by using this job:

DPJBIND
binds the summary/purge program defined by DPCBIND

1. Add your job statement.
2. Update the symbolics as necessary.
3. Submit the job.

NOTE
This job must be rerun when maintenance is applied that changes the DBRMs DPSPURGD or DPSQLOAD. Any such maintenance has a HOLD FOR ACTION code requesting that the bind job be run.

NOTE
You might need to split DPJMIGR into two jobs if the DB2 systems are not on the same MVS system.

Be careful to specify the parameters and control statements correctly to match your “FROM” and “TO” systems. The old MainView for DB2 version must be used in the UNLOAD step to correctly process the previous format of the tables. The new MainView for DB2 version must be used to create the load statements for the LOAD into the new tables.

Depending on which DB2 subsystems are being accessed in the steps, the DB2 version may be the same or different. The DB2 SDSNLOAD must match the accessed DB2 at each stage (see parameters FROMDB2 and TODB2). You must specify the control statements in the UNLOAD step to select the originating DB2 and to select which data you want. The parameter LDSYS in the procedure defines the target DB2 subsystem for the LOAD step.
Step 12: Bind the reporting plan

This step binds the plan that produces reports.

Edit member JXRBPIND in BBSAMP and bind the reporting plan by using this job:

JXRBPIND
binds the report program and grants execute authority for the reporting plan to public

1. Add your job statement.

2. Update the symbolics as necessary.

3. Update the name of the DB2 system by using the SYSTEM parameter in the DSN command.

4. Verify the plan name for program DSNTIAD in the RUN statement.

5. Submit the job for DBRM JXRDSQL.

**NOTE**

This job must be rerun when maintenance is applied that changes DBRMs, DPPURGD, or DPSQLDAD. Any such maintenance has a ++HOLD...REASON(ACTION)... code indicating that after updating, the bind job must be run.
Step 13: Tailor extract/summarization JCL

This step tailors the SMF extract and summarization job, DPRSMF (IBM LOAD method) or DPRSMFLP (BMC LOADPLUS method).

Edit member DPRSMF or DPRSMFLP in UBBSAMP to tailor it for your periodic production (see the MainView for DB2 Performance Reporter User Guide for a description of DPRSMF or DPRSMFLP). Accounting records can be loaded in summary tables or detail tables or both.

When using the IBM LOAD method, the steps to load the DB2 tables use the DB2 Load Utility, DSNUTILB. When using the BMC LOADPLUS method, the steps to load the DB2 tables use the BMC Software LOADPLUS utility, AMUUMAIN. If your installation uses a different utility, you must modify your JCL. The utility must be able to interpret LOAD control statements in the same format that DSNUTILB uses.

DPRSMF/DPRSMFLP
a runtime job that extracts accounting and statistics records from SMF, reformats them, and loads them into DB2

1. Add your job statement.

2. Change the HIDP parameter to the high-level qualifier of your BMC Software product libraries. For the BMC LOADPLUS method, change the HILP parameter to the high-level qualifier of your BMC Software LOADPLUS product library.

3. Verify that the HIDB2 parameter is the correct prefix for your DB2 library names.

4. Specify the data set name of the unloaded SMF data set for the SMF parameter.

5. Specify the UNIT name to allocate temporary work space.

6. Specify the target DB2 system for the SYSTEM parameter.

7. Specify the ID of a DB2 load utility for the UID parameter.

8. Change the value of the SSID parameter to the target DB2 subsystem ID in the first input control statement for Step 3 of the procedure.

9. Modify the table name if changes are made in “Step 8: Generate CREATE statements” on page 77.

10. If changes were made in “Step 6: Define database usage” on page 75 or “Step 8: Generate CREATE statements” on page 77, modify the table space and database name in the REPAIR step (and the RESTORE step for the BMC LOADPLUS method).
Step 14: Tailor summarization JCL

This job tailors the optional summarization job DPRSUM (IBM LOAD method) or DPRSUMLP (BMC LOADPLUS method). DPRSUM or DPRSUMLP can be used can be used to purge old data from the performance tables.

Edit member DPRSUM (IBM LOAD method) or DPRSUMLP (BMC LOADPLUS method) and tailor it for your periodic production (see the MainView for DB2 Performance Reporter User Guide for a description of DPRSUM or DPRSUMLP). Accounting records can be loaded in summary or detail tables or both.

When using the IBM LOAD method, the steps to load the DB2 tables use the DB2 Load Utility, DSNUTILB. When using the BMC LOADPLUS method, the steps to load the DB2 tables use the BMC Software LOADPLUS utility, AMUUMAIN. If your installation uses a different utility, you must modify your JCL. The utility must be able to interpret LOAD control statements in the same format that DSNUTILB uses.

DPRSUM/DPRSUMLP summarizes accounting data and purges outdated data from the performance data tables

1. Add your job statement.

2. Change the HIDP parameter to the high-level qualifier of your BMC Software product libraries. For the BMC LOADPLUS method, change the HILP parameter to the high-level qualifier of your BMC Software LOADPLUS product library.

3. Verify that the HIDB2 parameter is the correct prefix for your DB2 library names.

4. Specify the UNIT name to allocate temporary work space.

5. Specify the target DB2 system for the SYSTEM parameter.

6. Specify the ID of a DB2 load utility for the UID parameter.

7. Examine and change the control statements as necessary to implement your data storage strategy.

8. Modify the table name if changes are made in “Step 8: Generate CREATE statements” on page 77.
Step 15: Tailor report JCL

This job produces all the Performance Reporter reports. Delete any reports that you do not want.

Edit member DPRREPT in UBBSAMP to tailor DPRREPT for your periodic production (see the MainView for DB2 Performance Reporter User Guide for a description of DPRREPT).

DPRREPT runs the reporting jobs

1. Add your job statement.

2. Change the HIDP parameter to the high-level qualifier of your BMC Software product libraries.

3. Verify that the HIDB2 parameter is the correct prefix for your DB2 library names.

4. Specify the UNIT name to allocate temporary work space.

5. Adjust the list of reports as needed for your site. The default generates all the Performance Reporter predefined reports.

6. Specify the target DB2 system for the SYSTEM parameter.

7. Modify the table names if changes are made in “Step 8: Generate CREATE statements” on page 77.

8. Delete unwanted reports.

For information about batch verification, see “Batch verification” on page 90.

Step 16: Tailor MVDB2/DC batch report JCL

This step is optional. If you do not plan to use the MVDB2/DC batch reports, skip this step.

This job creates MVDB2/DC batch reports. It is a copy of the #DOMRPRT JCL that is provided with MVDB2/DC.

Edit member DPRDOMRP in UBBSAMP to tailor it for your environment.
Step 17: Tailor MVDB2/DC archive Performance Reporter table load JCL

1. Add your job statement.

2. Change the ?TRACEDSN? text to specify the input NGL archive data set that is used to produce the MVDB2/DC batch reports.

3. Insert the MVDB2/DC batch report control cards following the SYSIN DD * JCL statement to produce your report. The comment section following the job stream lists the control cards that can be used.

**Step 17: Tailor MVDB2/DC archive Performance Reporter table load JCL**

This step is optional. If you do not plan to use a MVDB2/DC archive data set as input to the SMF Performance Reporter table load process, skip this step.

This job creates a MVDB2/DC archive data set, and then uses it as input to the SMF Performance Reporter table load process.

In UBBSAMP, edit member DPRARC (or DPRARCLP for BMC LOADPLUS) to tailor it for your environment and add your job statement.

**Batch verification**

After the DPRSMF or DPRSMFLP, DPRSUM or DPRSUMLP, and DPRREPT jobs are tailored, as described on pages 87 through 89, they can be submitted and run as a verification job stream.

Running a verification job stream produces three detail tables, one summary table, and a set of all distributed reports. The reports produced from the detail accounting data (reports ACxxxx) are essentially the same as those from the summary accounting data (reports SAxxxx).
Implementing product security

This chapter describes how to authorize access to MainView for DB2 services.

This chapter presents the following topics:

- Authorizing security ................................................................. 91
- Security for analyzer, monitor, and trace services ....................... 92
  - Service selection lists by user group ........................................ 92
  - Command and function authorization ..................................... 93
- Thread display security exit .................................................... 94
  - Environment ........................................................................ 94
  - Register usage .................................................................... 94
  - Parameter list ...................................................................... 95

Authorizing security

MainView product security is enabled through the MVS system authorization facility (SAF) interface. SAF passes security requests to external security managers (ESMs). SAF security supports CA-ACF2, CA-TOP SECRET, or RACF.

Entity names define product resources that are secured by an ESM through the SAF interface. The MainView Security Reference Manual lists SAF entity names for MainView for DB2 full-screen services and actions in the section on full-screen security mode. Some are shared resources and are described in the section "Resources Used by Multiple Products." This section includes security for BBI-SS PAS resources like the journal, as well as control of DB2 commands, traces, and the display of SQL text. Look for all entries that list DMR as an affected product. There is also a section specifically for MainView for DB2 that describes how to control DB2 commands by command name.
The MainView Security Guide describes how to use Plex Manager security views to manage security parameter and resource class property members in the BBSECURE data set. The MainView Security Reference Manual lists the MainView for DB2 resources controlling access to windows mode table data and actions. Another section lists the MainView for DB2 views that access that table data.

Security for analyzer, monitor, and trace services

Security access classes for analyzer, monitor, and trace services are defined in service tables that you can modify (see the ACCESS keyword on page 69).

The security level for each service is shown in the service selection applications that list analyzer and trace displays and data collection monitors.

Users are authorized to use the services through the PMACC resource. See the MainView Security Reference Manual section “Resources Used by Multiple Products”.

Service selection lists by user group

The service list panels that are selected from the Primary Option Menu can be restricted to display only the services for which the user has authority. This restriction applies to

- option 2 (ANALYZERS)
- the SM (START MONITORS) primary command
- option 3 (MONITORS)

BBSAMP member DMRSTD00 is an example of how to set up the service security codes by DB2 functional area, such as user activity or buffer pools. Each service is assigned a security code according to its area. USERID members can then be created either for groups (such as DBAs or system programmers) or for individuals to access only specific services by listing one or more security codes. If the corresponding security code is not defined in the user’s authorization member, the user does not see those services on the service selection displays; however, they are displayed on the EXPAND selection bar.
The SERVLIST keyword in BBPARM member BBIISP00 determines whether this feature is activated. The value for SERVLIST can be ALL or RESTRICT. ALL is the default; users see all services on the list displays. RESTRICT specifies only those services for which a user is authorized.

Command and function authorization

Users must be authorized to issue commands or use applications against a target DB2 subsystem.

The following list is a summary of basic authorization resources for MainView for DB2. Most of these resources are also used by MainView for CICS and MainView for IMS. A description is in the “Full-screen mode security” section of the MainView Security Reference Manual.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMACCx</td>
<td>service class authorization, global authorization, or request authorization</td>
</tr>
<tr>
<td></td>
<td>(free, modify, purge, quiesce, reset, stop, or switch)</td>
</tr>
<tr>
<td>DB2CMD</td>
<td>authority to issue DB2 commands</td>
</tr>
<tr>
<td>TRACE.x</td>
<td>authority to start any trace (a summary trace only or a detail trace of a</td>
</tr>
<tr>
<td></td>
<td>specified level)</td>
</tr>
<tr>
<td>DB2TRACE GENERIC</td>
<td>authority to start a detail trace for the total workload.</td>
</tr>
<tr>
<td>TRALLOC</td>
<td>authority to have the BBI-SS PAS dynamically allocate trace logs for this</td>
</tr>
<tr>
<td></td>
<td>user</td>
</tr>
<tr>
<td>DB2SQLxx</td>
<td>authority to display all SQL statements, no SQL text, or SQL text only of</td>
</tr>
<tr>
<td></td>
<td>threads with a requestor’s user ID</td>
</tr>
</tbody>
</table>

Windows mode security resources control access to windows mode data, commands, and views. There are resources for each table (data record) and its related group of views. Resources also control the use of actions to issue OPERTUNE commands to change ZPARMs, and to activate or deactivate collection of SQL cache statistics. A description of these resources is in the windows mode sections of the MainView Security Reference Manual.
Thread display security exit

In addition to the security provided by the DB2SQL keyword in the user ID members of the BBPARM data set, a security exit can also be coded. The exit can be coded in Assembler Language to set a return code to suppress the display of thread activity detail and SQL statement text in the Detail User Status (DUSER) and Application Trace displays. BBSAMP member DZSQLU can be used as a model. A message is displayed to indicate authorization failure.

The exit is loaded during BBI-SS PAS initialization and invoked before

- current active thread information is displayed (DUSER and UTRAC)
- trace summary services are displayed (LTRAC, TSTAT, and TSUMx)
- trace thread services are displayed (STRAC and DTRAC)
- CANCEL THREAD command is processed (DUSER)

It is also invoked once at initialization and once at BBI-SS PAS termination to allow housekeeping.

Environment

The exit must be coded and linked as reentrant (RENT). The load module must be called DZSQLU and be present in the BBLINK load library before the BBI-SS PAS is initialized. The exit is entered in Key 4 or Key 8, AMODE-31, problem state, and is ESTAE-protected by the BBI-SS PAS.

The exit can invoke another security routine, such as RACF or ACF2.

Register usage

On entry:

R0 contains one of three values to indicate the type of entry to the exit:

0  initialization call
A call is made to the exit during BBI-SS PAS initialization for exit setup. Only Word 1 of the parameter list is valid.
Parameter list

4  authorization check
A call is made to the exit before each display of a thread by the DUSER or DTRAC services.

8  termination call
A call is made to the exit during BBI-SS PAS termination for exit cleanup. Only Word 1 of the parameter list is valid.

R1 contains the address of a nine-word parameter list (see “Parameter list” on page 95)

R2-R12 content is unpredictable

R13 contains the address of an 18-word save area to be used by the exit

R14 contains the return address

R15 contains the entry point address of the module

On exit:

R15 contains a return code that is only checked for a type 4 call:

0  Honor DB2SQL keyword parameter in BBPARM member USERID for SQL text display.
4  Display all data.
8  Suppress a display of SQL text.
Other  Suppress a display of entire thread.

Parameter list

The exit is entered with R1 addressing a nine-word parameter list:

Word 1 is the address of a fullword where the exit can store data between calls, such as the address of a control block

Word 2 is the address of an 8-byte field containing the name of the plan executing the SQL statement

Word 3 is the address of an 8-byte field containing the authorization ID of the user executing the plan

Word 4 is the address of a 12-byte field containing the correlation ID
Word 5 is the address of an 8-byte field containing the connection name.

Word 6 is the address of an 8-byte field containing the ID of the user requesting the display.

Word 7 is the address of a 5-byte field containing the name of the service invoked, such as DUSER or DTRAC.

Word 8 is the address of a 4-byte field containing the target DB2 system name.

Word 9 is the address of an 8-byte field containing the ID of the user starting the trace. This field is 0 for the DUSER and UTRAC service.

**NOTE**

The fields addressed by Word 2 to Word 9 must not be modified by the exit. When this exit is invoked for the trace summary displays, LTRAC, TSTAT, and TSUMx, Words 2 to 5 are 0.
BBSAMP data set members

To help you understand and use your BMC Software product easily, the BBSAMP data set contains members that you can edit for your site’s use. These members contain macros, sample JCL, sample user exit routines, and sample statements for a variety of functions.

Table 12 describes BBSAMP customization members for MainView for DB2.

<table>
<thead>
<tr>
<th>BBSAMP member name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB2CMDxx</td>
<td>samples for DB2 command security</td>
</tr>
<tr>
<td>DMRSTD00</td>
<td>sample service table definition to set up a security profile</td>
</tr>
<tr>
<td></td>
<td>In this example, each service is assigned a security code according to its functional area, such as user activity or buffer pool. Edit to reflect site-specific requirements. The authority granted to user IDs can then specify by security code which services a user can access.</td>
</tr>
<tr>
<td>DPxxxxxx</td>
<td>sample members for Performance Reporter customization and report JCL</td>
</tr>
<tr>
<td>DZPRxxxx</td>
<td>sample members for Performance Reporter customization and report JCL</td>
</tr>
<tr>
<td>DPCTxxxx</td>
<td>sample SQL to define table-related objects</td>
</tr>
<tr>
<td>DZTBTRAC</td>
<td>sample utility for printing trace data in batch mode</td>
</tr>
<tr>
<td>DZJPxxxx</td>
<td>sample report statements for trace print</td>
</tr>
<tr>
<td>DZSQLU</td>
<td>sample thread display security exit</td>
</tr>
<tr>
<td>DZTBRL0D</td>
<td>sample JCL to restore trace log data sets</td>
</tr>
<tr>
<td>DZTBARC</td>
<td>sample JCL to copy a trace log data set to a flat file</td>
</tr>
<tr>
<td>JXTmnnn</td>
<td>sample batch jobs to set up and maintain the trace directory and trace log data sets</td>
</tr>
<tr>
<td>BBSAMP member name</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>DOMC</td>
<td>sample CLIST that is customized and copied into SBBCLIB to allow hyperlinks to Data Collector reports</td>
</tr>
<tr>
<td>DMRACT</td>
<td>sample CLIST that is customized and copied into SSBCLIB to allow hyperlinks to CATALOG MANAGER Browse displays</td>
</tr>
</tbody>
</table>
# BBPARM data set members

Table 13 lists sample members in BBPARM that can be used to define product default parameters, initiate background processing, and generate predefined Performance Reporter accounting and statistics reports.

**Table 13  BBPARM data set members for MainView for DB2 (part 1 of 2)**

<table>
<thead>
<tr>
<th>BBPARM member name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACxxxxxx</td>
<td>Performance Reporter SQL to generate accounting reports</td>
</tr>
<tr>
<td>SAxxxxxx</td>
<td>Performance Reporter SQL to generate summary accounting reports</td>
</tr>
<tr>
<td>STxxxxxx</td>
<td>Performance Reporter SQL to generate statistics reports</td>
</tr>
<tr>
<td>SSxxxxxx</td>
<td>Performance Reporter SQL to generate summary statistics reports</td>
</tr>
<tr>
<td>BLKDMRW</td>
<td>contains a sample set of multiple timer-driven service requests</td>
</tr>
<tr>
<td></td>
<td>The member name is specified with the BLK parameter in BBPARM member BBIISP00 to activate the requested services when the BBI-SS PAS starts.</td>
</tr>
<tr>
<td>BBPTWK00</td>
<td>contains DB2 application workload definitions</td>
</tr>
</tbody>
</table>
MainView for DB2 Customization Guide

DMRBEX00 defines various parameters per DB2 target subsystem (TARGET):

- all DB2 messages that are issued to the system console from that DB2 subsystem can be logged to the BBI-SS PAS Journal (LOG)
- background sampler exceptions
  - Exception messages can be directed to the BBI-SS PAS Journal (default), to the system console (BMSGWTO for all messages, WTO for an individual message), or to a TSO ID (BMSGTSO for all messages, MTSO for individual messages).
  - Specific messages (MSG) can be deactivated (ACTIVE) or controlled (CYCLES).
  - Thresholds also can be set for individual runaway messages per attach type to determine if a thread is a runaway transaction.
- application trace options
  - Trace storage (STORAGE), size (TRLIM), and duration (TRTIME) also can be specified. In addition, the size (TRSIZE) and number (TRBUF) of the detail trace buffers can be specified, as well as several trace logging options.
- LOCKOUT records
  - The limit on the number of records kept for the Lockout History display can be set with the LOCKOUTS parameter.
- DB2 accounting classes
  - The accounting classes for data collection can be specified with the ACCTG keyword.

Table 13  BBPARM data set members for MainView for DB2 (part 2 of 2)

<table>
<thead>
<tr>
<th>BBPARM member name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMRBEX00</td>
<td>defines various parameters per DB2 target subsystem (TARGET):</td>
</tr>
<tr>
<td></td>
<td>- all DB2 messages that are issued to the system console from that DB2 subsystem can be logged to the BBI-SS PAS Journal (LOG)</td>
</tr>
<tr>
<td></td>
<td>- background sampler exceptions</td>
</tr>
<tr>
<td></td>
<td>- Exception messages can be directed to the BBI-SS PAS Journal (default), to the system console (BMSGWTO for all messages, WTO for an individual message), or to a TSO ID (BMSGTSO for all messages, MTSO for individual messages).</td>
</tr>
<tr>
<td></td>
<td>- Specific messages (MSG) can be deactivated (ACTIVE) or controlled (CYCLES).</td>
</tr>
<tr>
<td></td>
<td>- Thresholds also can be set for individual runaway messages per attach type to determine if a thread is a runaway transaction.</td>
</tr>
<tr>
<td></td>
<td>- application trace options</td>
</tr>
<tr>
<td></td>
<td>- Trace storage (STORAGE), size (TRLIM), and duration (TRTIME) also can be specified. In addition, the size (TRSIZE) and number (TRBUF) of the detail trace buffers can be specified, as well as several trace logging options.</td>
</tr>
<tr>
<td></td>
<td>- LOCKOUT records</td>
</tr>
<tr>
<td></td>
<td>- The limit on the number of records kept for the Lockout History display can be set with the LOCKOUTS parameter.</td>
</tr>
<tr>
<td></td>
<td>- DB2 accounting classes</td>
</tr>
<tr>
<td></td>
<td>- The accounting classes for data collection can be specified with the ACCTG keyword.</td>
</tr>
</tbody>
</table>
This appendix provides guidelines for estimating the amount of storage that is needed at your site for Performance Reporter statistics and accounting data.

The default table space allocations in BBSAMP member DPCSTOW require 200 cylinders of DASD. These allocations support a small Performance Reporter batch system that processes approximately 10,000 or more statistics records, 100,000 or more detail accounting records, and 10,000 or more summary accounting records.

If the tables are customized to delete unwanted columns, more records will fit in the same allocation. In that case, default table space allocations support 20,000 or more statistics records, 100,000 or more detail accounting records, and 10,000 or more summary accounting records.

For more accurate estimates, you must determine

1. your processing volumes (number of accounting and statistical records created daily)

2. a summarization strategy (see “Summarization Strategy Considerations” in the MainView for DB2 Performance Reporter User Guide):

   - What granularity is needed (daily, weekly, monthly)?
   - What level of summarization keys are needed?
   - What is the correct retention period for the data in each table?
3. which tables you want to maintain:

- Do you need DDF tables?
- Do you want to load detail accounting records?
- How many summary tables do you want?

4. the size of the rows in the tables:

- Are you deleting unwanted columns?

Use the following guidelines to estimate storage.

## Statistics records

Use the following guidelines to estimate storage for statistics records:

- For each statistics record processed, one statistics summary row and one buffer summary row are created.

- Two statistics summary rows fit in a 4K page in the detail statistics table (DMRSTAT).

- Nine buffer detail rows fit in a 4K page in the detail buffer statistics table (DMRSBFDT).

- Sixteen DDF statistics rows fit in a 4K page.

- Nine storage address space statistics rows fit in a 4K page (DMRSTADT).

- Six system storage statistics rows fit in a 4K page (DMRSTSDT).

For example, if the default statistics interval of 30 minutes is used, 48 rows of each type are created for a full day’s processing. This processing requires 16 pages for statistics summary rows and 10 pages for buffer summary rows per day for the statistics information for each system monitored. If three DDF destinations are active during the day, 3 x 48 or 144 DDF statistics rows are created, requiring 9 pages.
Accounting records

One accounting record fits in a 4K page in the detail accounting table (DMRACXXX). The DDF accounting records are smaller; two to five of them can fit in a 4K page in the DDF accounting table (DMRACXXX), depending on the size of the values contained in the VARCHAR fields. One to three package accounting records can fit in a 4K page in the package accounting table (DMRAPXXX), depending on the size of the values contained in the VARCHAR fields.

The volume of these records depends on the activity in the DB2 systems that are being monitored. For example, a production DB2 system with a fairly light load of 10,000 records per day requires 10,000 pages of storage per day. If 10 percent of these threads access a single DDF destination, 200 to 500 additional pages are required.

NOTE
The size of the rows can be reduced by deleting unwanted columns (see “Step 8: Generate CREATE statements” on page 77).

Audit records

Use the following guidelines to estimate storage for audit records:

- Seventeen audit summary records fit in a 4K page in the audit summary table (DMRAUSUM).
- Seven records fit in a page in the authorization failures table (DMRAUFAL).
- Eight records fit in a page in the authorization control table (DMRAUGRV).
- Eight records fit in a page in the DDL access table (DMRAUDDL).
- Eighteen records fit in a page in the DML access table (DMRAUDML).
- Eight records fit in a page in the DML at BIND access table (DMRAUDMB).
- Ten records fit in a page in the authorization ID change table (DMRAUCHG).
- Sixteen records fit in a page in the utility access table (DMRAUUTL).

The volume of these records depends on the activity in the DB2 systems that are being monitored.
Moving a DB2 subsystem from one LPAR to another LPAR

This appendix explains how MainView for DB2 can support a DB2 subsystem that is moved from one LPAR to another LPAR without recycling the BBI-SS PAS.

MainView for DB2 does not support dynamic target definition through the common MainView Target Definition dialogs. However, static target definitions can be set up to support DB2s that might sometimes run on different systems (for example, data-sharing members in a sysplex).

**Target definitions**

For any DB2 subsystem that may be moved from one LPAR to another LPAR, define an entry per LPAR in the BBIJNT00 member of BBPARM, with the same TARGET DB2 SSID but with a unique ALIAS. The BBIISP00 member should reference the ALIAS name in the TARGET entries. For example:

**BBIJNT00:**

```
TARGET=DB2P,TYPE=DB2,SUBSYS=SSA1,RELEASE=0910,ALIAS=DB2P1  (on SYSA)
TARGET=DB2P,TYPE=DB2,SUBSYS=SSB1,RELEASE=0910,ALIAS=DB2PSYSB  (on SYSB)
```

**BBIISP00:**

```
TARGET=DB2P1,BLK=XXXXXXXX
TARGET=DB2PSYSB,BLK=XXXXXXXX
```
Runtime considerations

At PAS initialization, a service point is created for each ALIAS on each LPAR. On those LPARs where the DB2 subsystem is not active, most of the monitors that are started with the BLK REQ entry in BBIISP00 will quiesce (and generate QUIESCE messages in the Journal). If the DB2 subsystem is later brought up on that LPAR, the monitors will be activated automatically.

In windows mode, the context is always shown as the ALIAS. In PLEXMGR, all service points will be shown as active. The STDB2 View (SSI mode) will show the status of all defined targets, including the inactive targets. The inactive targets will show Connect Fail in the Warning Msg column. Other views only show the data returned from the active DB2s.

In full-screen mode, use the active ALIAS instead of the DB2 SSID in the TARGET field. If an inactive ALIAS is entered, this message will appear:
IM9301E CANNOT LOCATE DB2 SPECIFIED.
Appendix E  DOMPLEX option sets

This chapter describes the DOMPLEX option sets that you use to define the Data Collector subsystems and the DB2 subsystems to be monitored. The following topics are included:

Overview ................................................................. 107
   Task summary ...................................................... 108
   Considerations when setting data transfer limits .................. 108
Working with DOMPLEX option sets .................................. 109
   Creating a DOMPLEX option set .............................. 109
   Specifying DOMPLEX-level parameters for option sets .......... 111
   Specifying a Data Collector for an option set .................. 115
   Specifying the DB2 subsystems to monitor .................... 116
   Creating an output group ........................................ 119
   Deleting obsolete option sets ................................... 124

Overview

Through DOMPLEX option sets, you can define one or more Data Collector subsystems and their associated DB2 subsystems to be monitored. Each Data Collector in a DOMPLEX must run on a separate IBM z/OS image and can monitor all DB2 subsystems on that image. Although you can define multiple DOMPLEXes, you can define a Data Collector to only one DOMPLEX.

For each option set, you can

- define which subsystems to monitor
- set product-initialization parameters
- specify LOGSET data sets for storing output
Table 14 summarizes the tasks that you complete when setting up a DOMPLEX option set.

Table 14  Task summary for setting up a DOMPLEX option set

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a DOMPLEX option set</td>
<td>adds a new option set</td>
<td>“Creating a DOMPLEX option set” on page 109</td>
</tr>
<tr>
<td>Specify DOMPLEX-level parameters (optional after initial setup)</td>
<td>sets values that apply to the entire DOMPLEX and relate to communication in a sysplex environment For example, you can set data transfer limits (global and local) or set decimal and date formatting preferences.</td>
<td>“Specifying DOMPLEX-level parameters for option sets” on page 111</td>
</tr>
<tr>
<td>Specify a Data Collector for the option set</td>
<td>defines the initialization parameters for the Data Collector subsystem (for example, the number of concurrent batch and online users that are allowed)</td>
<td>“Specifying a Data Collector for an option set” on page 115</td>
</tr>
<tr>
<td>Specify the DB2 subsystems to monitor</td>
<td>specifies parameters for the DB2 subsystems to be monitored</td>
<td>“Specifying the DB2 subsystems to monitor” on page 116</td>
</tr>
<tr>
<td>Create an output group</td>
<td>defines the output group for the option set</td>
<td>“Creating an output group” on page 119</td>
</tr>
<tr>
<td>Note: An output group is a collection of specifications for collecting and processing data; the data is written to the LOGSET (log file) data sets for batch or historical reporting. You can use these output groups to buffer trace records, and to allocate trace data sets to which the output groups will write records.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Considerations when setting data transfer limits

When setting DOMPLEX-level parameters (as instructed in “Specifying DOMPLEX-level parameters for option sets” on page 111), you can specify both global and local limits for data transfers:

- The local transfer limit controls how much local storage a user data request can occupy from a single request for data. This limit ensures that a single user cannot use too much of the Data Collector’s private storage area for a single request.

- The global transfer limit controls how much data a Data Collector will attempt to return to a remote Data Collector for a single data request from a remote user. This limit controls the demand on coupling-facility resources.
The entire request for data from all DB2 subsystems must be satisfied from within the local transfer limit buffer; consequently, the local transfer limit must always be larger than the global limit.

Because concurrent users can issue simultaneous requests, each request can potentially use up to the maximum amount of storage. If you have many concurrent users and a high local transfer limit, simultaneous requests can exceed the private virtual storage capacity of the Data Collector. Exceeding this capacity can cause the Data Collector to fail.

Typically, z/OS systems provide between 1300 MB and 1600 MB of available private storage. Therefore, a value of 1000 MB is a good working maximum for all concurrent user requests combined. Because this storage must be balanced between the number of active user requests and the size of those requests, 1000 MB can support a limit of 50 MB for 20 simultaneous requests. If you increase the limit to accommodate a large user request, you must decrease the number of users. For example, increasing the limit to 100 MB results in only 10 simultaneous user requests that obtain the maximum amount of data.

If you have many concurrent users, you should reduce the size of the user requests. Either reduce the actual size of the request, or request the data from a batch report request. Batch report requests that do not use the Data Collector as their source are not subject to these limitations.

Before changing the default limits, consider the following information:

- The combination of local transfer limits for all users and global transfer limits for all DB2s should never exceed 1000 MB.
- The higher the local transfer limits, the lower the number of users that will be using those limits.
- The global transfer limit should always be lower than the local transfer limit.

## Working with DOMPLEX option sets

This section explains how to create a DOMPLEX option set and set it up according to your site’s needs.

### Creating a DOMPLEX option set

Use this procedure to add a new DOMPLEX option set.
To create a DOMPLEX option set

Follow these steps to access this panel from MainView for DB2:

1. On the EZDB2 Easy Menu, select the MVDB2/DC Admin/Archive hyperlink.

2. On the MainView for DB2 – DC Main Menu, select option 1 (Administration).

3. On the Administration Menu, select option 2 (DOMPLEX Option Sets).

   The DOMPLEX Option Sets panel lists your current DOMPLEX option sets in alphabetical order. Figure 1 provides an example. If you have more option sets than can fit on the panel, use the F7 and F8 keys to browse through the list.

4. In the field next to the product name (System and SQL Performance DOMPLEX Prof V10.1.0 in Figure 1), type I and press Enter.

   NOTE
   You can create DOMPLEX option sets only if you have administration authority.
Specifying DOMPLEX-level parameters for option sets

**TIP**

This step inserts a completely new option set. If you prefer copying an existing option set and changing it to create a new one, you would type **C** next to that object set’s name and press **Enter**.

A panel similar to Figure 2 is displayed.

**Figure 2  Panel for a new option set (LGCP1001)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>the name of the option set (up to 8 characters)</td>
</tr>
<tr>
<td>Description</td>
<td>a description of the option set</td>
</tr>
</tbody>
</table>

5 Press **F3** to exit.

6 In the Create New Option Set panel, enter the following values:

7 Press **Enter** to save your entries.

The new option set uses default option values until you modify them.

**Specifying DOMPLEX-level parameters for option sets**

Use this procedure to set values that control DOMPLEX-related communication in your sysplex environment.
To specify DOMPLEX-level parameters

1 On the option set’s panel (Figure 2 on page 111), expand DOMPLEX Parameters.

2 Enter values for the displayed fields, as follows:

Table 15  DOMPLEX Parameters fields (part 1 of 3)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sysplex communications enabled</td>
<td>Specify whether the Data Collector on the current system will connect to an XCF group in the coupling facility, and subsequently establish communication with all Data Collectors in the DOMPLEX. Valid values are Y (Yes) and N (No). The default is Y.</td>
</tr>
<tr>
<td>Global data transfer limit</td>
<td>Specify the maximum size (in megabytes) of a request that can be transferred to a remote system. Requests that exceed the limit are terminated. Valid values are any number in the range 1 through 999. The default is 20. Note: As you raise the global data transfer limit, more private storage in the Data Collector is used per user. This situation can potentially cause problems with paging and throughput, depending on the number of concurrent users. BMC recommends setting this value to 200 or less. For more information about data transfer limits, see “Considerations when setting data transfer limits” on page 108.</td>
</tr>
</tbody>
</table>
Table 15  DOMPLEX Parameters fields (part 2 of 3)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local data transfer limit</td>
<td>Specify the maximum size (in megabytes) of a request that can be transferred to a user on the local system.</td>
</tr>
<tr>
<td></td>
<td>Requests that exceed the limit are terminated. Valid values are any number in the range 1 through 999. The default is 50.</td>
</tr>
<tr>
<td></td>
<td>For more information about data transfer limits, see “Considerations when setting data transfer limits” on page 108.</td>
</tr>
<tr>
<td>Collect IFCID 3 in accounting trace</td>
<td>Specify whether to collect IFCID 3 in accounting trace. Valid values are Y (Yes) and N (No).</td>
</tr>
<tr>
<td>Security via DB2 authorization tables</td>
<td>Specify whether security through the DB2 authorization tables is enabled. Valid values are Y (Yes) and N (No).</td>
</tr>
<tr>
<td>Authorization for DB2 commands</td>
<td>Specify whether authorization is required for DB2 commands. Valid values are Y (Yes) and N (No).</td>
</tr>
<tr>
<td>Authorization for MVS commands</td>
<td>Specify whether authorization is required for IBM MVS commands. Valid values are Y (Yes) and N (No).</td>
</tr>
<tr>
<td>Translate all panels to upper case</td>
<td>Specify whether System and SQL Performance panels and reports should use uppercase letters only:</td>
</tr>
<tr>
<td></td>
<td>■ Y (Yes) uses uppercase letters only.</td>
</tr>
<tr>
<td></td>
<td>■ N (No, the default) uses uppercase and lowercase letters.</td>
</tr>
<tr>
<td></td>
<td>Note: This setting does not apply to SQL Explorer reports, panels, or Explain reports. It does apply to panels that SQL Explorer shares with other System and SQL Performance products.</td>
</tr>
<tr>
<td>Site Panel Language identifier</td>
<td>Specify the language for System and SQL Performance product panels. Valid values are E for English and J for Japanese.</td>
</tr>
<tr>
<td></td>
<td>The value in this field is the default for all users who do not set a preference in User Options or User Profile.</td>
</tr>
</tbody>
</table>
### Table 15  DOMPLEX Parameters fields (part 3 of 3)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date formatting style option</td>
<td>Specify the style for dates on panels:</td>
</tr>
<tr>
<td></td>
<td>- U displays dates in United States format (mm/dd/yy or mm/dd/yyyy).</td>
</tr>
<tr>
<td></td>
<td>- E displays dates in European format (dd/mm/yy or dd/mm/yyyy).</td>
</tr>
<tr>
<td></td>
<td>- I displays dates in ISO format (yy/mm/dd or yyyy/mm/dd).</td>
</tr>
<tr>
<td></td>
<td>If you do not specify a value, the default is the value from Global Options. A User Options value overrides any value that you set here.</td>
</tr>
<tr>
<td>Decimal formatting style option</td>
<td>Specify the symbol that precedes the fractional portion of a number with decimal places.</td>
</tr>
<tr>
<td></td>
<td>Valid values are U (for United States format, a period) and E (for European format, a comma).</td>
</tr>
<tr>
<td></td>
<td>If you do not specify a value, the default is the value from Global Options. A User Options value overrides any value that you set here.</td>
</tr>
<tr>
<td>IDCAMS module name</td>
<td>Specify the name of the IDCAMS module.</td>
</tr>
<tr>
<td></td>
<td>The IBM default name is IDCAMS. If the default at your site is different, you must specify that name during installation.</td>
</tr>
<tr>
<td>Work file DASD unit name</td>
<td>Specify the unit name to be used for allocating temporary DASD work files.</td>
</tr>
<tr>
<td></td>
<td>The IBM default unit name is SYSDA. If the default at your site is different, you must specify that name during installation.</td>
</tr>
<tr>
<td>Security data set name</td>
<td>Specify the name of the VSAM data set containing the User Profile security values.</td>
</tr>
<tr>
<td></td>
<td>This value is set by using the SECURITY parameter of the options macro. This data set name is specified in the OPTIONS module. If a JCL DD statement overrides this data set name, this panel will not reflect the name of the data set that is actually being used.</td>
</tr>
<tr>
<td>COPYDIR archive dataset name</td>
<td>Specify the COPYDIR archive data set name.</td>
</tr>
</tbody>
</table>

3 Press **Enter** to save your changes.
Specifying a Data Collector for an option set

Use this procedure to specify the Data Collectors that will be sharing data in a sysplex environment. In a non-sysplex environment, you should define only one Data Collector to a DOMPLEX.

Data Collector names consist of four alphanumeric characters and must begin with a letter. A Data Collector name cannot match any other subsystem name on the same z/OS system, or any other Data Collector name in the DOMPLEX.

To specify the Data Collector for an option set

1. On the option set’s panel (Figure 2 on page 111), expand Data Collector List.
2. Expand the parameter section for the Data Collector that you want to edit.
3. In the Data Collector section, enter the following values:

Table 16  Data Collector List fields (part 1 of 2)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Collector SSID</td>
<td>Specify the SSID of the Data Collector subsystem in DOMPLEX. Select the plus sign (+) next to the Data Collector SSID to view and edit the parameter for the Data Collector.</td>
</tr>
<tr>
<td>Max number of concurrent online users</td>
<td>Specify the maximum number of online users that are allowed to use this Data Collector at the same time. You cannot leave this field blank. Valid values are any number in the range 1 through 999. The default is 99.</td>
</tr>
<tr>
<td>Max number of concurrent batch users</td>
<td>Specify the maximum number of batch users that are allowed to use this Data Collector at the same time. You cannot leave this field blank. Valid values are any number in the range 0 through 999. The default is 1. Note: This field applies only to MainView for DB2 - Data Collector, APPTUNE, and SQL Performance.</td>
</tr>
<tr>
<td>WTO messages route code</td>
<td>Specify the z/OS WTO routing code (which determines the z/OS console to which all WTO messages are sent). You cannot leave this field blank. Valid values are any number in the range 0 through 16. The default is 0. The System and SQL Performance products use the system defaults. For definitions of the other routing codes, refer to the IBM documentation.</td>
</tr>
</tbody>
</table>
Specifying the DB2 subsystems to monitor

Use this procedure to define the DB2 subsystems that can be monitored by the Data Collectors in this DOMPLEX.

To specify the DB2 subsystems to monitor

1. On the option set’s panel (Figure 2 on page 111), expand DB2 Monitor List.
2. In the DB2 Monitor List section, enter the following values:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTO upon user connection</td>
<td>Specify whether a WTO message (BMC24100) is issued each time a user connects to this Data Collector. Valid values are Y (issues the message) and N (omits the message). The default is Y.</td>
</tr>
<tr>
<td>WTO upon user connect termination</td>
<td>Specify whether a WTO message (BMC24101) is issued each time a user terminates a connection to this Data Collector. Valid values are Y (issues the message) and N (omits the message). The default is Y.</td>
</tr>
<tr>
<td>Data Collectors advisor variable repository</td>
<td>Specify the name of the Data Collector’s advisor variable repository.</td>
</tr>
<tr>
<td>Pool Advisor history repository</td>
<td>Specify the name of the Pool Advisor history repository.</td>
</tr>
</tbody>
</table>

**NOTE**

You must recycle the Data Collector to make your changes take effect.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB2 SSID</td>
<td>Specify the subsystem ID of the DB2 that is being defined.</td>
</tr>
<tr>
<td>Is this a production DB2?</td>
<td>Specify whether this DB2 is a production DB2. Valid values are Y and N.</td>
</tr>
</tbody>
</table>
Specifying the DB2 subsystems to monitor

Appendix E DOMPLEX option sets 117

Monitor with MainView for DB2 - DC
Specify whether this DB2 will be monitored by MainView for DB2-Data Collector.
Valid values are Y and N.

Monitor with Pool Advisor/System Perf
Specify whether this DB2 subsystem will be monitored automatically by Pool Advisor when the associated Data Collector is started.
Valid values are Y and N.

Monitor with APPTUNE
Specify whether to collect data from this DB2 for APPTUNE reporting.
Valid values are Y (Yes) and N (No).
Note: This field applies only to APPTUNE and SQL Performance for DB2.

Dynamic Explain plan name
Specify the name of the plan that DB2 uses for Dynamic Explain.
This name must match the plan name that is bound on this DB2 during installation. The default plan name in the installation JCL is DAAvrmD1, where vrm is the current release level of the product. If you used the default at installation, you must specify DAAvrmD1 here. If you used a different name at installation, you must specify that name here.

DB2 IFCIDs to be traced automatically
Use this parameter to select specific DB2 IFCIDs that you want to trace automatically.
When you select this option, a new panel opens so that you can specify the IFCIDs. Use a comma to separate values. To enter a range of values, place a hyphen between the first and last values.

DB2 IFCIDs to be discarded
Use this parameter to prevent tracing of specific DB2 IFCIDs.
When you select this option, a new panel opens so that you can specify the IFCIDs that you do not want to trace. Use a comma to separate values. To enter a range of values, place a hyphen between the first and last values.

Table 17  DB2 Monitor List fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor with MainView for DB2 - DC</td>
<td>Specify whether this DB2 will be monitored by MainView for DB2-Data Collector. Valid values are Y and N.</td>
</tr>
<tr>
<td>Monitor with Pool Advisor/System Perf</td>
<td>Specify whether this DB2 subsystem will be monitored automatically by Pool Advisor when the associated Data Collector is started. Valid values are Y and N.</td>
</tr>
<tr>
<td>Monitor with APPTUNE</td>
<td>Specify whether to collect data from this DB2 for APPTUNE reporting. Valid values are Y (Yes) and N (No). Note: This field applies only to APPTUNE and SQL Performance for DB2.</td>
</tr>
<tr>
<td>Dynamic Explain plan name</td>
<td>Specify the name of the plan that DB2 uses for Dynamic Explain. This name must match the plan name that is bound on this DB2 during installation. The default plan name in the installation JCL is DAAvrmD1, where vrm is the current release level of the product. If you used the default at installation, you must specify DAAvrmD1 here. If you used a different name at installation, you must specify that name here.</td>
</tr>
<tr>
<td>DB2 IFCIDs to be traced automatically</td>
<td>Use this parameter to select specific DB2 IFCIDs that you want to trace automatically. When you select this option, a new panel opens so that you can specify the IFCIDs. Use a comma to separate values. To enter a range of values, place a hyphen between the first and last values.</td>
</tr>
<tr>
<td>DB2 IFCIDs to be discarded</td>
<td>Use this parameter to prevent tracing of specific DB2 IFCIDs. When you select this option, a new panel opens so that you can specify the IFCIDs that you do not want to trace. Use a comma to separate values. To enter a range of values, place a hyphen between the first and last values.</td>
</tr>
</tbody>
</table>
### Table 17  DB2 Monitor List fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMC IFCIDs to be discarded</td>
<td>Use this parameter to prevent tracing of specific BMC IFCIDs. When you select this option, a new panel opens so that you can specify the IFCIDs that you do not want to trace. Use a comma to separate values. To enter a range of values, place a hyphen between the first and last values.</td>
</tr>
<tr>
<td>Class2-In-DB2 elapsed timing info</td>
<td>Specify whether to collect Class 2-In-DB2 elapsed timing information. Specify Y to collect this information.</td>
</tr>
<tr>
<td>Class3-DB2 suspend timing info</td>
<td>Specify whether to collect Class 3-DB2 suspend timing information. Specify Y to collect this information.</td>
</tr>
<tr>
<td>Class5-Time spent doing IFI requests</td>
<td>Specify whether to collect Class 5-Time spent doing IFI requests. Specify Y to collect this information.</td>
</tr>
<tr>
<td>Class7-DB2 events (packages, DBRMs)</td>
<td>Specify whether to collect Class 7-DB2 events (packages, DBRMs). Specify Y to collect this information.</td>
</tr>
<tr>
<td>Class8-Wait time for packages</td>
<td>Specify whether to collect Class 8-Wait time for packages. Specify Y to collect this information.</td>
</tr>
<tr>
<td>Class 10-Optional package detail data</td>
<td>Specify whether to collect Class 10-Optional package detail data. Specify Y to collect this information.</td>
</tr>
<tr>
<td>Collect dynamic SQL stats in stmt cache</td>
<td>Specify whether to collect dynamic SQL stats in stmt cache. Specify Y to collect this information.</td>
</tr>
</tbody>
</table>
Creating an output group

Use this procedure to create an output group for an option set. The option set will use this group to collect and process data and then write it to the LOGSET (log file) data sets for batch or historical reporting.

**To create an output group**

1. On the option set’s panel (Figure 2 on page 111), expand **Output Groups**.
2. On the **Output Groups** line, type I on the minus sign (–) and press **Enter**.

### DB2 Monitor List fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collect static SQL stats in stmt cache</td>
<td>Specify whether to collect static SQL stats in stmt cache. Specify Y to collect this information.</td>
</tr>
<tr>
<td>SQL Performance/APPTUNE options</td>
<td>Expand the <strong>SQL Performance/APPTUNE options</strong> section to specify the following values:</td>
</tr>
<tr>
<td>APPTUNE Filter Name</td>
<td>Specify the default APPTUNE filter name.</td>
</tr>
<tr>
<td>Fixed Collection Interval</td>
<td>Specify the interval (in minutes) at which data is written from the reduction table to the trace data sets. When you enter a value here, all intervals will have that length. Specify 0 (zero) to set an individual Hourly Collection Intervals Schedule. <strong>Note:</strong> BMC recommends using the same statistical interval for all DB2 subsystems that are monitored by the same Data Collector. Valid values are any number in the range 1 through 1440.</td>
</tr>
<tr>
<td>Hourly Collection Intervals Schedule (0-23)</td>
<td>Type Y at each hour boundary upon which an interval is to begin. <strong>Note:</strong> BMC recommends using the same statistical interval for all DB2 subsystems that are monitored by the same Data Collector. This will synchronize the intervals for all monitored DB2s. Consequently, reporting data will be the same for all DB2s.</td>
</tr>
</tbody>
</table>
The new output group is displayed at the top of the list and is numbered 001. If group number 001 is already in use, enter another number (in the range 002 through 128) to replace the new 001.

**TIP**

This step inserts a completely new output group. If you prefer repeating an existing output group, type R on the plus sign (+) next to that output group and press **Enter**.

Doing so copies the new group under the original group and uses the same group number for both. Change the number for the new group.

3 To edit the parameters for the new output group, expand its group number.

4 In the Output Groups section, enter the following values:

**Table 18  Output Groups fields (part 1 of 2)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Number</td>
<td>Specify the number of the output group. The product assigns numbers sequentially when you create output groups. Valid values are 001 through 128. A skip in the sequence of numbers indicates that an output group has been deleted. The deleted number can subsequently be reused to a new output group.</td>
</tr>
<tr>
<td>Data Collector SSID</td>
<td>Specify the subsystem ID of the Data Collector that owns the output group. If the output group is not owned by a specific Data Collector, this field is blank. Ownership of the output group will switch between Data Collectors as necessary.</td>
</tr>
<tr>
<td>Data space size</td>
<td>Specify the size of the data space (in megabytes) that this output group uses to collect and process data (before writing the data to trace data sets). Valid values are 0 through 2000.</td>
</tr>
</tbody>
</table>
Table 18  Output Groups fields (part 2 of 2)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Classes</td>
<td>Expand the <strong>Data Classes</strong> section to specify the IFCIDs that this output group captures and stores. See <strong>Table 19 on page 122</strong> for a description of the following data classes:</td>
</tr>
<tr>
<td></td>
<td>• <strong>APERROR</strong> Specify Y to collect APPTUNE error data.</td>
</tr>
<tr>
<td></td>
<td>• <strong>APOBJECT</strong> Specify Y to collect APPTUNE object summary data.</td>
</tr>
<tr>
<td></td>
<td>• <strong>APSTACC</strong> Specify Y to collect APPTUNE statement accounting interval data.</td>
</tr>
<tr>
<td></td>
<td>• <strong>APSTACCS</strong> Specify Y to collect APPTUNE statement accounting summaries data.</td>
</tr>
<tr>
<td></td>
<td>• <strong>APSTMT</strong> Specify Y to collect APPTUNE statement text, host variables, and exceptions data.</td>
</tr>
<tr>
<td></td>
<td>• <strong>DB2ACCT</strong> Specify Y to collect DB2 accounting data.</td>
</tr>
<tr>
<td></td>
<td>• <strong>DB2AUDIT</strong> Specify Y to collect DB2 audit data.</td>
</tr>
<tr>
<td></td>
<td>• <strong>DB2PERF</strong> Specify Y to collect DB2 performance data.</td>
</tr>
<tr>
<td></td>
<td>• <strong>DB2SYS</strong> Specify Y to collect DB2 statistics events data.</td>
</tr>
<tr>
<td></td>
<td>• <strong>DCSYSTEM</strong> Specify Y to collect DATA Collector events data.</td>
</tr>
<tr>
<td></td>
<td>• <strong>MVDBACC</strong> Specify Y to collect MainView for DB2 - DC accounting summary data.</td>
</tr>
<tr>
<td></td>
<td>• <strong>OPERTUNE</strong> Specify Y to collect OPERTUNE events data.</td>
</tr>
<tr>
<td></td>
<td>• <strong>PAHIST</strong> Specify Y to collect Pool Advisor history data.</td>
</tr>
<tr>
<td>NGL LOGSET Parameters</td>
<td>Expand the <strong>NGL LOGSET Parameters</strong> section to specify the Next Generation Logger (NGL) LOGSET parameters for the output group. See <strong>Table 20 on page 123</strong> for a description of the NGL LOGSET parameters.</td>
</tr>
<tr>
<td>Subsystems supported by this group</td>
<td>Place your cursor on &gt; (the greater-than sign) and press <strong>Enter</strong> to display the panel for entering DB2 SSIDs for this output group. You can specify up to 63 DB2 SSIDs for the DB2 subsystems that this output group supports.</td>
</tr>
</tbody>
</table>
Table 20 provides more information about the data class parameters that you can define for the output group.

<table>
<thead>
<tr>
<th>Data class</th>
<th>IFCIDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB2ACCT</td>
<td>DB2 accounting records</td>
</tr>
<tr>
<td></td>
<td>DB2 IFCIDs:</td>
</tr>
<tr>
<td></td>
<td>■ 3—Accounting</td>
</tr>
<tr>
<td></td>
<td>■ 239—Package Accounting DBRMs</td>
</tr>
<tr>
<td>DB2AUDIT</td>
<td>DB2 audit records</td>
</tr>
<tr>
<td></td>
<td>DB2 IFCIDs:</td>
</tr>
<tr>
<td></td>
<td>■ 140—Audit Authorization Failures</td>
</tr>
<tr>
<td></td>
<td>■ 141—Audit GRANTs and REVOKEs&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>■ 142—Audited Object DDL&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>■ 143—Audited Object First Write Attempt&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>■ 144—Audited Object First Read Attempt&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>■ 145—Audited Object DML at BIND&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>■ 146—User-Defined Audit Trace</td>
</tr>
<tr>
<td></td>
<td>■ 312—Audit Trail for DCE Security Processing</td>
</tr>
<tr>
<td></td>
<td>This IFCID is disabled by default. It can be used optionally for batch reporting. See the MainView for DB2 Performance Reporter User Guide for instructions on how to activate additional IFCIDs when you want to produce a report that requires them.</td>
</tr>
<tr>
<td>DB2PERF</td>
<td>DB2 performance records (all other DB2 IFCIDs)</td>
</tr>
<tr>
<td></td>
<td>MainView for DB2 – Data Collector IFCIDs:</td>
</tr>
<tr>
<td></td>
<td>■ 22 and 63—Dynamic SQL Tracing&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>■ 23–25—Utility Processing&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>■ 90—Text of DB2 Command</td>
</tr>
<tr>
<td></td>
<td>■ 125—RID List Processing</td>
</tr>
<tr>
<td></td>
<td>■ 173—ASUTIME Exceeded</td>
</tr>
<tr>
<td></td>
<td>■ 225—Storage Summary&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>DB2SYS</td>
<td>DB2 system records</td>
</tr>
<tr>
<td></td>
<td>DB2 IFCIDs:</td>
</tr>
<tr>
<td></td>
<td>■ 001—System Statistics</td>
</tr>
<tr>
<td></td>
<td>■ 002—Database Statistics</td>
</tr>
<tr>
<td></td>
<td>■ 105—DBID/OBID Translate to Names</td>
</tr>
<tr>
<td></td>
<td>■ 107—Page Set OPEN/CLOSE</td>
</tr>
<tr>
<td>MVDBACC</td>
<td>MainView for DB2 – Data Collector Accounting Summary Records</td>
</tr>
<tr>
<td></td>
<td>(BMC IFCIDs 350–352)</td>
</tr>
</tbody>
</table>

<sup>a</sup> This IFCID is disabled by default. It can be used optionally for batch reporting. See the MainView for DB2 Performance Reporter User Guide for instructions on how to activate additional IFCIDs when you want to produce a report that requires them.
Table 20 describes the NGL LOGSET parameters that you define for the output group.

### Table 20  NGL LOGSET parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOGSET time span</td>
<td>Specify the amount of time that you would like to have data kept in log files, in days (D), hours (H), or minutes (M). You can specify only one type. If you specify a number without a type, the value defaults to days. If all of the log files become full in less time than this time span allows, more log files are allocated, up to the maximum allowed.</td>
</tr>
<tr>
<td>Max log buffers</td>
<td>Specify the maximum number of log I/O buffers to use. Valid values are 1 through 99.</td>
</tr>
<tr>
<td>Max read buffers</td>
<td>Specify the maximum number of read I/O buffers to use. Valid values are 1 through 99.</td>
</tr>
<tr>
<td>Deferred write time</td>
<td>Specify the maximum time delay before buffered records are written to the DASD log files. A shorter deferred time requires more write I/Os but means less vulnerability to data loss if an outage occurs. Valid values are 1 through 999 seconds.</td>
</tr>
<tr>
<td>Min LOGSET datasets</td>
<td>Specify the minimum number of data sets to use in the LOGSET. Valid values are 1 through 99.</td>
</tr>
<tr>
<td>Max LOGSET datasets</td>
<td>Specify the maximum number of data sets to use in the LOGSET. Valid values are 1 through 99.</td>
</tr>
<tr>
<td>I/O data chunksize</td>
<td>Specify the I/O data chunk size. Valid values are 1 through 99 MB.</td>
</tr>
<tr>
<td>Space (total)</td>
<td>Specify the total space used for the LOGSET. Valid values are 1 9999 MB.</td>
</tr>
<tr>
<td>Volume</td>
<td>(optional) Specify the volume for the LOGSET.</td>
</tr>
<tr>
<td>DFSMS Data class</td>
<td>(optional) Specify the DFSMS data class for the LOGSET.</td>
</tr>
<tr>
<td>DFSMS Management class</td>
<td>(optional) Specify the DFSMS management class for the LOGSET.</td>
</tr>
<tr>
<td>DFSMS Storage class</td>
<td>(optional) Specify the DFSMS storage class for the LOGSET.</td>
</tr>
<tr>
<td>DSN prefix</td>
<td>Specify the DSN prefix for the LOGSET (log file) data sets.</td>
</tr>
<tr>
<td>Enable Archiving</td>
<td>Specify Y to enable LOGSET data set archiving.</td>
</tr>
<tr>
<td>Archive post processing job</td>
<td>(optional) Specify the data set that contains the job that will execute when the archive job is done.</td>
</tr>
<tr>
<td>Days Archive data sets retained</td>
<td>Specify the number of days to keep archive data sets. Valid values are 0 through 999 days, where 0 indicates no limit.</td>
</tr>
<tr>
<td>Num Archived data sets retained</td>
<td>Specify the number of archived data sets to keep. Valid values are 0 through 999, where 0 indicates no limit.</td>
</tr>
</tbody>
</table>
Deleting obsolete option sets

You can delete DOMPLEX option sets that you no longer need.

To delete a DOMPLEX option set

1. On the DOMPLEX Option Sets panel (Figure 1 on page 110), type D next to the option set that you want to delete.
2. Press Enter.

Table 20  NGL LOGSET parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size Archived data sets retained Archive Volume</td>
<td>Specify the size of the archived data sets. Valid values are 0 through 999999 MB, where 0 indicates no limit.</td>
</tr>
<tr>
<td>Archive DFSMS Data class</td>
<td>(optional) Specify the volume for the archive.</td>
</tr>
<tr>
<td>Archive DFSMS Management class</td>
<td>(optional) Specify the DFSMS management class for the archive.</td>
</tr>
<tr>
<td>Archive DFSMS Storage class</td>
<td>(optional) Specify the DFSMS storage class for the archive.</td>
</tr>
<tr>
<td>Archive DSN prefix</td>
<td>(optional) Specify the DSN prefix for the archive.</td>
</tr>
</tbody>
</table>
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