System and SQL Performance for DB2®
Administrator Guide

Supporting

Version 10.1 of APPTUNE for DB2
Version 10.1 of MainView for DB2
Version 10.1 of MainView for DB2 – Data Collector
Version 10.1 of Pool Advisor for DB2
Version 10.1 of SQL Explorer for DB2
Version 10.1 of SQL Performance for DB2
Version 10.1 of System Performance for DB2

April 2011
Contacting BMC Software

You can access the BMC Software website at http://www.bmc.com. From this website, you can obtain information about the company, its products, corporate offices, special events, and career opportunities.

United States and Canada

<table>
<thead>
<tr>
<th>Address</th>
<th>Telephone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMC SOFTWARE INC</td>
<td>713 918 8800</td>
<td>713 918 8000</td>
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<td>HOUSTON TX 77042-2827</td>
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<td>USA</td>
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Outside United States and Canada

<table>
<thead>
<tr>
<th>Telephone</th>
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<tbody>
<tr>
<td>(01) 713 918 8800</td>
<td>(01) 713 918 8000</td>
</tr>
</tbody>
</table>
Customer support

You can obtain technical support by using the BMC Software Customer Support website or by contacting Customer Support by telephone or e-mail. To expedite your inquiry, see “Before contacting BMC.”

Support website

You can obtain technical support from BMC 24 hours a day, 7 days a week at http://www.bmc.com/support_home. From this website, you can

- read overviews about support services and programs that BMC offers
- 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, contact BMC as follows:

- **(USA or Canada)** Contact the Order Services Password Team at 800 841 2031, or send an e-mail message to ContractsPasswordAdministration@bmc.com.
- **(Europe, the Middle East, and Africa)** Fax your questions to EMEA Contracts Administration at +31 20 354 8702, or send an e-mail message to password@bmc.com.
- **(Asia-Pacific)** Contact your BMC sales representative or your local BMC office.
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About this book

This book contains detailed information about the administrative functions for the BMC Software System and SQL Performance products for DB2® and is intended for use by the administrator of these products. The System and SQL Performance products consist of the following products and solutions:

- SQL Performance for DB2 solution
  
  The SQL Performance solution includes the APPTUNE and SQL Explorer functions and an extensive Index Component that is exclusive to the solution. If you are using the SQL Performance solution, all information in this book that applies to APPTUNE and SQL Explorer also applies to SQL Performance.

- System Performance for DB2 solution
  
  The System Performance solution includes the Pool Advisor, OPERTUNE, and MainView for DB2 function in addition to reporting and advisor functions that are exclusive to the solution. If you are using System Performance, all information in this book that applies to Pool Advisor also applies to System Performance.

- APPTUNE for DB2

- MainView for DB2 – Data Collector
  
  The MainView for DB2 – Data Collector is a selectable component of MainView for DB2. The information in this book applies to MainView for DB2 only if you install this component.

- Pool Advisor for DB2

- SQL Explorer for DB2
Like most BMC documentation, this book is available in printed and online formats. To request additional 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_home. Some product shipments also include the online 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).

Related publications

The following related publications supplement this book and the online Help:

<table>
<thead>
<tr>
<th>Category</th>
<th>Document</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>installation</td>
<td>System and SQL Performance for DB2 Installation Guide</td>
<td>contains installation, customization, and configuration information for the System and SQL Performance products</td>
</tr>
<tr>
<td>documents</td>
<td>SQL Performance for DB2 User Guide</td>
<td>describes the functions and the operation of each product or solution</td>
</tr>
<tr>
<td></td>
<td>System Performance for DB2 User Guide</td>
<td></td>
</tr>
<tr>
<td></td>
<td>APPTUNE for DB2 User Guide</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pool Advisor for DB2 User Guide</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SQL Explorer for DB2 User Guide</td>
<td></td>
</tr>
<tr>
<td>notices</td>
<td>Release notes for each product and solution</td>
<td>provides information about the current release, such as what is new or changed, and information about resolved problems</td>
</tr>
</tbody>
</table>

Conventions

This book uses the following special conventions:

- All syntax, operating system terms, and literal examples are presented in this typeface.

- Variable text in path names, system messages, or syntax is displayed in italic text:
  testsys/instance/fileName
The following additional conventions are used in this book:

- The terms *Data Collector subsystem* and *Data Collector* are synonymous.
- The terms MainView for DB2 – Data Collector and MainView for DB2 – DC are synonymous.

**Panel-flow diagrams**

Panel-flow diagrams summarize the ISPF panels that you see while completing specific tasks. The following example explains how to read a panel-flow diagram:

![Panel-flow diagram example](image)

Use the following guidelines to read navigation diagrams:

- Each rectangle represents a product panel.
- Triangles represent navigational commands and point to the panel to which the command navigates.
- Circles represent the menu options or action codes used to navigate to the adjacent panel.
- A shaded background surrounding one or more panels indicates product-specific panels.

The System and SQL Performance products also provide fastpath navigation, using the equal sign (=). You can navigate to the second level of each major function on a product main menu by specifying = with the numbers of the menu options (=1.3, for example) on the **Command** line of any product panel. Panels that are associated with fastpath navigation are shaded in the navigation diagrams throughout this book.
Syntax statements

The following example shows a sample syntax statement:

```
COMMAND KEYWORD1 (KEYWORD2 | KEYWORD3) KEYWORD4={YES | NO} fileName...
```

The following table explains conventions for syntax statements and provides examples:

<table>
<thead>
<tr>
<th>Item</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items in italic type represent variables that you must replace with a name or value.</td>
<td>alias</td>
</tr>
<tr>
<td></td>
<td>databaseDirectory</td>
</tr>
<tr>
<td></td>
<td>serverHostName</td>
</tr>
<tr>
<td>Brackets indicate a group of optional items. Do not type the brackets when you enter the option. A comma means that you can choose one or more of the listed options. You must use a comma to separate the options if you choose more than one option.</td>
<td>[tableName, columnName, field]</td>
</tr>
<tr>
<td>Braces indicate that at least one of the enclosed items is required. Do not type the braces when you enter the item.</td>
<td>{DBDName</td>
</tr>
<tr>
<td></td>
<td>UNLOAD device={disk</td>
</tr>
<tr>
<td>A vertical bar means that you can choose only one of the listed items. In the example, you would choose either commit or cancel.</td>
<td>{commit</td>
</tr>
<tr>
<td>An ellipsis indicates that you can repeat the previous item or items as many times as necessary.</td>
<td>columnName . . .</td>
</tr>
</tbody>
</table>
Syntax diagrams

The following figure shows the standard format for syntax diagrams:

```
statement begins  command  statement continued on next line

command

statement continues  required item  optional item

required item

required choice  optional choice

optional item

multiple choices

statement ends
```

The following example illustrates the syntax for a DELETE statement. Because the FROM keyword, alias variable, and WHERE clause are optional, they appear below the main Command line. In contrast, the tableName variable appears on the Command line because the table name is required. If the statement includes a WHERE clause, the clause must contain a search condition or a CURRENT OF clause. (The searchCondition variable appears on the main line for the WHERE clause, indicating that this choice is required.)

```
DELETE tableName FROM alias;

WHERE searchCondition CURRENT OF cursorName;
```
The following guidelines provide additional information about syntax diagrams:

- Read diagrams from left to right and from top to bottom.
- A recursive (left-pointing) arrow above a stack indicates that you may choose more than one item in the stack.
- An underlined item is a default option.
- If a diagram shows punctuation marks, parentheses, or similar symbols, you must enter them as part of the syntax. Asterisks are exceptions. An asterisk in a diagram indicates a reference note.
- In general, MVS commands, keywords, clauses, and data types are displayed in uppercase letters. However, if an item can be shortened, the minimum portion of the MVS command or keyword might be displayed in uppercase letters with the remainder of the word in lowercase letters (for example, CANcel).
- Variables in syntax diagrams are always italicized.

## Summary of changes

The summary of changes for the current release can be found in the accompanying release notes. The summaries of changes for all previous releases of the products are available in online Help.

In this book, change bars signify changes that clarify or correct existing information, or that provide new information corresponding to product changes. This book does not use change bars to denote editorial and formatting changes or typographical errors that have been fixed, unless these updates significantly affect your use of the information.

**To view a summary of changes online**

1. Select Summary of Changes from the main menu displayed when you begin your product session. The current Summary of Changes is displayed.

2. Select any topic from the displayed selection list for an explanation of the new feature.

At the end of the selection list in the current Summary of Changes, options are available for viewing previous summaries of changes and migration considerations.

You can also reach the current Summary of Changes by typing HELP CHANGES on the Command line of any product panel and pressing Enter.
NOTE

The Summary of Changes cannot be accessed from SQL Explorer-specific panels and reports or from Explain reports in APPTUNE, MainView for DB2 – Data Collector, and SQL Performance. SQL Explorer users can access the Summary of Changes from the panels the product shares with the other System and SQL Performance products.

Where additions and modifications to the technical content of this book occur, revision bars have been inserted in the margin.
Administration overview

This chapter introduces the administrative functions of the System and SQL Performance products. The following topics are included:

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Accessing the administration function

System and SQL Performance products administrative functions are accessed from the main menu of each product when they are run as stand-alone products.

If multiple products or solutions are installed, the main menu that is displayed will reflect the actual product/solution mix that is installed and active at the time.

Figure 1 on page 20 is an example of the menu that is displayed when both System and SQL Performance solutions are installed. Depending on the products and solutions you have installed the menu may be slightly different.
Main menus contain the Administration option only if you have been granted Administration authority in your User Profile.

Administration menu

Figure 2 on page 21 is an example of the Administration menu. Not all options on the Administration menu apply to all System and SQL Performance products. The options that are displayed on your Administration menu correspond to the product mix that is active.

This book describes all administrative options for all System and SQL Performance products and solutions. Where the functions described are specific to one or more products or solutions, the text indicates which are pertinent.
The Administration menu contains the following options:

1. **User Profiles**
   User Profiles limit the use of resources and grant and restrict access to Data Collectors, to various features of product operation, and to DB2® subsystems. In addition, they are used to set default values for session characteristics and function keys. See Chapter 2, “User Profiles,” for more information.

2. **DOMPLEX Option Sets**
   DOMPLEX option sets define one or more Data Collector subsystems, the DB2 subsystems they will monitor, and the LOGSET log files that will be used to store collected records. See Chapter 3, “DOMPLEX option sets,” for more information.

3. **Maintenance**
   Use this option to see the current product level and release date and information about PTFs that have been applied. See Chapter 4, “Diagnostic and maintenance procedures,” for more information.

4. **APPTUNE Filters (APPTUNE and SQL Performance)**
   Filters specify collection options that apply to a specific combination of program, plan, user ID, correlation ID, and DB2 subsystem. You can select one filter for use with each Data Collector and DB2 combination in a DOMPLEX option set. See Chapter 5, “Collecting and filtering SQL data for reporting,” for more information.
Navigation

Figure 3 illustrates the flow of administration panels.
Chapter 2 User Profiles

This chapter describes the User Profiles that are used to limit the use of resources and to grant and restrict access to Data Collectors and products, to various product features, and to DB2® subsystems. The following topics are included:

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User Profile administration ......................................... 26
Authorization ........................................................... 28
DC access ............................................................... 29
DB2 access ............................................................. 31
Product access ......................................................... 34
Session control ........................................................ 35
Session options ......................................................... 36
Presentation options ................................................ 37
Function keys .......................................................... 38

Introduction

User Profiles are used to limit the use of resources and to grant and restrict access to Data Collectors and products, to various product features, and to DB2 subsystems. User Profiles are also used to set default values for session characteristics and function keys.

NOTE
Denying access to DB2 through the product does not prevent the use of DB2, only the ability to monitor DB2 using the product. Where the panels and the text of this book refer to “access to DB2,” this access is only for the purpose of monitoring DB2 with the System and SQL Performance products.
The User Profile is composed of a security record (contained in the SECURITY VSAM data set) and a user record (contained in the PROFILE VSAM data set). The security record contains parameters that grant or deny access to various product functions and to DB2. The user record contains the parameters for session characteristics and function keys.

A default User Profile called 9DEFAULT is shipped with the System and SQL Performance products. This User Profile is composed of a 9DEFAULT security record and a 9DEFAULT user record. Together these records contain the default values for all parameters in the User Profile.

**NOTE**
The User Profile is presented as a single entity. There is no obvious distinction between the security and user records.

As the system administrator, you create User Profiles for each user ID that is authorized to access the System and SQL Performance products that are installed at your site; however, it is possible for users to access the products automatically before you create their User Profiles.

### Automatic access

When a user logs on to a product or solution for the first time, the product looks in the SECURITY data set for an existing record that matches the user ID for that user. If no security record exists, the product uses the 9DEFAULT security record to grant access to the product, to the product reports, and to DB2. No security record is automatically created for the user ID, but as long as a 9DEFAULT record is available, the product uses it. If there is no security record for the user ID and no 9DEFAULT record, access is denied.

If the product finds a security record for the user ID or a 9DEFAULT record, the products looks in the PROFILE data set for a user record for that user ID. If no user record exists, the product creates one that uses the defaults in the 9DEFAULT record. If no 9DEFAULT record exists, the product creates a user record using internal defaults.

**NOTE**
When a user record is created, a User Profile exists for that user, but until that User Profile is modified by an administrator, an individual security record is not created and the 9DEFAULT security record is used for access. If the 9DEFAULT security record is deleted, users without individual security records will no longer have access to the product. As long as the unmodified 9DEFAULT record exists in the SECURITY data set, all users are granted access to products.
WARNING

The 9DEFAULT records shipped in the SECURITY and PROFILE data sets contain default values that grant maximum authority to users. If you want to use the 9DEFAULT records, but do not want all users to have maximum authority, you must modify the 9DEFAULT records before users access the product. Or you can delete the 9DEFAULT records to prevent unauthorized access. In either case, create a User Profile with maximum authority for yourself first.

Master Profiles

Master Profiles can be used to assign the same User Profile values to many users. Each time you create a User Profile, you can specify a Master Profile. If you specify a Master Profile, you can show which values you want extracted from that Master Profile. The following guidelines apply to Master Profiles:

- any profile can be used as a Master Profile
- multiple profiles can be used as Master Profiles
- any number of User Profiles can reference the same Master Profile

See “Session control” on page 35 for more information about Master Profiles.

Navigation

Figure 4 illustrates the flow of User Profile Administration panels.

Figure 4  User Profile Administration navigation
User Profile administration

Use the **Administration** option on the product or solution main menu (see **Figure 2 on page 21** for an example) to access User Profiles. The **Administration** option is displayed on the menu only if you have administration authority. When you select the **Administration** option, the User Profile Administration panel is displayed.

The User Profile Administration panel (**Figure 5**) provides access to existing User Profiles and is the starting point for creating new User Profiles.

**Figure 5  User Profile Administration panel (DOMEPRFU)**

<table>
<thead>
<tr>
<th>Command</th>
<th>User Profile Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scroll</td>
<td>CSR_</td>
</tr>
<tr>
<td>To add a profile, type the name in the &quot;New profile&quot; field, and/or type one or more action codes. Then press Enter.</td>
<td></td>
</tr>
<tr>
<td>V -View</td>
<td>M -Modify</td>
</tr>
<tr>
<td>D -Delete</td>
<td>C -Copy</td>
</tr>
<tr>
<td>New profile</td>
<td></td>
</tr>
<tr>
<td>Act Name</td>
<td>Description</td>
</tr>
<tr>
<td>ACCTP</td>
<td>ACCOUNTS PAYABLE</td>
</tr>
<tr>
<td>ACCTR</td>
<td>ACCOUNTS RECEIVABLE</td>
</tr>
<tr>
<td>ADMIN</td>
<td>ADMINISTRATOR PROFILE</td>
</tr>
<tr>
<td>HML</td>
<td>PROGRAMMER PROFILE</td>
</tr>
<tr>
<td>MASTER</td>
<td>MASTER PROFILE</td>
</tr>
<tr>
<td>SXS</td>
<td>DBA PROFILE</td>
</tr>
<tr>
<td>SYSROG</td>
<td>SYSTEM PROGRAMMER PROFILE</td>
</tr>
<tr>
<td>USER01</td>
<td>PROFILE FOR USER01</td>
</tr>
<tr>
<td>USER02</td>
<td>PROFILE FOR USER02</td>
</tr>
<tr>
<td>USER03</td>
<td>PROFILE FOR USER03</td>
</tr>
</tbody>
</table>

The User Profile Administration panel displays a list of all existing User Profiles in alphabetical order. If more profiles are listed than can be displayed on the panel, you can use the scrolling keys (F7 and F8) to browse the list. You can also use the LOCATE command to search for a specific string of characters.
When you specify a new profile, or choose to view or modify an existing profile, the User Profile Data Menu (Figure 6) is displayed.

**Figure 6  User Profile Data Menu (DOMEUPR0)**

<table>
<thead>
<tr>
<th>DOMEUPRO/I</th>
<th>User Profile Data Menu</th>
<th>12:36:43</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command</td>
<td></td>
<td>--------</td>
</tr>
</tbody>
</table>

User name : RDHXJ4

Type an optional description for this user in the field below.
Description  DEFAULT_PROFILE

Select one of the following options. Then press Enter.

- A. Authorization
  - Display authorization values that can be set only by an administrator.

1. Session Control
   - Parameters that control the user's session

2. Not available

The following values cannot be locked from user update.

3. Session Options
   - Parameters that customize the session

4. Presentation Options
   - Parameters that control language and formatting

5. Function Keys
   - Function key values

The name of the User Profile and its description are displayed at the top of the panel. If it is a new profile, the description is **DEFAULT PROFILE** until you specify a new description.

This menu contains the following options:

**A. Authorization** sets values for the following access:

- Data Collector access
- DB2 access
- Product access

1. **Session Control** sets the parameters that control access to product functions and to limit resource use.

   As the administrator, you can allow users to change most of the parameters on the Session Control panel, or you can prevent users from changing them.

3. **Session Options** sets characteristics for the user’s session (for example, placement of the Command line and display of the panel ID).

4. **Presentation Options** sets the parameters that control the presentation of data on the user’s screen (for example, uppercase or mixed-case characters, date style, and decimal style).
5. **Function Keys** sets function key defaults.

Users of all products and solutions except MainView for DB2 – Data Collector can change the values in Session Options, Presentation Options, and Function Keys at any time by using [User Options](#). The administrator cannot prevent users from changing these values.

MainView for DB2 – Data Collector users do not have access to User Options. Only MainView for DB2 – Data Collector administrators have access to User Profiles.

---

**NOTE**

Changes to the User Profile take effect the next time that the user accesses the product after the changes are processed. The values in the User Profile are saved across product sessions.

---

### Authorization

Use the User Profile Authorization Menu ([Figure 7](#)) to access the panels that are used to set the parameters that control a user’s access to products and functions.

**Figure 7  User Profile Authorization Menu (DOMEUPRZ)**

The User Profile Authorization Menu contains the following options:

1. **DC Access** specifies the Data Collectors that the user is authorized to use and the types of commands that can be issued.

2. **DB2 Access** specifies the DB2 subsystems that the user is authorized to monitor.

3. **Product Access** grants or restricts user access to individual products.
DC access

Use the User Profile DC Access panel (Figure 8) to specify Data Collectors that the user can access and the types of command authority that will be associated with each Data Collector.

Figure 8    User Profile DC Access panel (DOMEUPR3)

You can specify up to 32 Data Collectors. Type each subsystem ID (SSID) in the New DC SSID field, and press Enter.

The values that are initially displayed on this panel are the default values that are shipped with the product. You can change any or all of them. You must have administration authority to change these values.

The following wildcards can be used with SSID specifications:

*    Used alone, the asterisk matches all subsystem IDs. Used at the end of a character string, the asterisk matches all SSIDs beginning with that character string. Any characters following an asterisk are ignored.

EXAMPLE
Specifying DC* matches all subsystems beginning with DC (for example, DC01, DC02, DC03).

!    The exclamation point is used to replace a single character at any position in a string.

EXAMPLE
Specifying DC!A matches all SSIDs with DC in the first two character positions and A in the fourth character position (for example, DC1A, DC2A, DC3A).
You must also specify with Y (Yes) or N (No) whether the user is permitted to issue Data Collector, MVS, and OPERTUNE commands while using each Data Collector. When you manually add a DC SSID to the list, the default for all of these parameters is N (No).

The defaults in the $9DEFAULT$ record that is shipped with the product allow maximum authority (an asterisk (*) for DC SSID and Y (Yes) for all other values). If you want to use the $9DEFAULT$ record but do not want all users to have maximum authority, you must modify the $9DEFAULT$ record before users access the product.

If a specific Data Collector is matched by more than one entry on the access list, the entry that is the most specific takes priority. Subsystems are listed with the most specific entries at the top of the list and the least specific at the bottom. Entries that are equally specific are in alphabetical order.

--- EXAMPLE ---

Consider the following Data Collector access list:

<table>
<thead>
<tr>
<th>Act</th>
<th>DC SSID</th>
<th>DC commands (Y=Yes,N=No)</th>
<th>MVS commands (Y=Yes,N=No)</th>
<th>OPERTUNE commands (Y=Yes,N=No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>_</td>
<td>DC01</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>_</td>
<td>DC02</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>_</td>
<td>*</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>_</td>
<td>*</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

In this example, DC01 matches three entries on the list:

- DC01
- DC*
- *

Because DC01 matches exactly, the specifications that are associated with DC01 apply when the user accesses DC01. The user can issue Data Collector commands but cannot issue MVS or OPERTUNE commands.

A subsystem of DC03 matches two entries on the list:

- DC*
- *

The specifications for DC* are used because the match is more specific. The user cannot issue Data Collector, MVS or OPERTUNE commands when using DC03.

If the value for the **Use Master Profile access lists** field on the User Profile Session Control panel is Y (Yes), the values on the DC Access panel are ignored. The subsystem IDs on the Data Collector access list in the specified Master Profile are used instead.

The DC Access panel is also used to delete SSID authorization entries. Type D in the Act field, and press Enter.
**NOTE**

In a sysplex environment, authorization problems can occur if a user is authorized to use some, but not all, of the Data Collectors (and their associated DB2 subsystems) in a DOMPLEX. Ensure that users are authorized for all subsystems in the DOMPLEX that might participate in sysplex communication.

### DB2 access

Use the User Profile DB2 Access panel (Figure 9) to specify the DB2 subsystems that the user can access and to control authorization to issue DB2 commands.

**Figure 9   User Profile DB2 Access panel (DOMEUPR4)**

You can specify up to 64 DB2 subsystems. Type each subsystem ID (SSID) in the **New DB2 SSID** field, and press **Enter**. Or type an asterisk (*) to specify all DB2 subsystems on the MVS system.

The values that are initially displayed on this panel are the default values that are shipped with the System and SQL Performance products. These values cannot be changed by users who do not have administration authority.
The following wildcards can be used with SSID specifications:

*  Used alone, the asterisk matches all subsystem IDs. Used at the end of a character string, the asterisk matches all SSIDs beginning with that character string. Any characters following an asterisk are ignored.

— **EXAMPLE**
Specifying **DB2** matches all subsystems beginning with **DB2** (for example, DB21, DB22, DB23).

!  The exclamation point is used to replace a single character at any position in a string.

— **EXAMPLE**
Specifying **!DB2** matches all SSIDs with any character in the first character position and **DB2** in the second, third, and fourth character positions (for example, ADB2, BDB2, CDB2).

You must also specify with Y (Yes) or N (No) whether the user is permitted to issue DB2 commands when monitoring the DB2 subsystem. When you manually add a DB2 SSID to the list, the default for this parameter is N (No).

— **NOTE**
The defaults in the 9DEFAULT record that is shipped with the product allow maximum authority [an asterisk (*) for DB2 SSID and Y (Yes) for DB2 commands]. If you want to use the 9DEFAULT record, but do not want all users to have maximum authority, you must modify the 9DEFAULT record before users access the product.

If a specific DB2 subsystem is matched by more than one entry on the access list, the entry that is the most specific takes priority. Subsystems are listed with the most specific entries at the top of the list and the least specific at the bottom. Entries that are equally specific are in alphabetical order.
If the value for the Use Master Profile access lists field on the User Profile Session Control panel is Y (Yes), the values on the DB2 Access panel are ignored. The DB2 subsystem IDs on the DB2 access list in the specified Master Profile are used instead.

The DB2 Access panel is also used to delete DB2 authorization entries. Type D in the Act field, and press Enter.

--- EXAMPLE ---
Consider the following DB2 access list:

<table>
<thead>
<tr>
<th>Act</th>
<th>SSID</th>
<th>(Y=Yes, N=No)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DB2A</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>DB2B</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>DB2*</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>Y</td>
</tr>
</tbody>
</table>

In this example, DB2A matches three entries on the list:

- DB2A
- DB2*
- *

Because DB2A matches exactly, the specifications associated with DB2A apply when the user monitors DB2A. The user can issue DB2 commands.

A subsystem of DB2C matches two entries on the list:

- DB2*
- *

The specifications for DB2* are used because the match is more specific. The user cannot issue DB2 commands when monitoring DB2C.

If the value for the Use Master Profile access lists field on the User Profile Session Control panel is Y (Yes), the values on the DB2 Access panel are ignored. The DB2 subsystem IDs on the DB2 access list in the specified Master Profile are used instead.

--- NOTE ---
In a sysplex environment, authorization problems can occur if a user is authorized to use some, but not all, of the Data Collectors (and their associated DB2 subsystems) in a DOMPLEX. Be sure that users are authorized for all subsystems in the DOMPLEX that might participate in sysplex communication.
Product access

Use the User Profile Authorized Products panel (Figure 10) to specify the products that the user can access. The name of the User Profile is displayed at the top of the panel.

Figure 10  User Profile Authorized Products panel (DOMEUPRB)

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Status</th>
<th>Auth</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVDB2/DC</td>
<td>ENABLED</td>
<td>Y</td>
</tr>
<tr>
<td>APPTUNE</td>
<td>ENABLED</td>
<td>Y</td>
</tr>
<tr>
<td>Pool Advisor</td>
<td>ENABLED</td>
<td>Y</td>
</tr>
<tr>
<td>SQL Explorer</td>
<td>ENABLED</td>
<td>Y</td>
</tr>
</tbody>
</table>

Type Y in the Auth field for a product to grant access to the user. Type N in the Auth field for a product to deny access.
Session control

Use the User Profile Session Control panel (Figure 11) to view or set the parameters that control a user’s access to product functions and to limit resource allocation.

**Figure 11  User Profile Session Control panel (DOMEUPR1)**

<table>
<thead>
<tr>
<th>Command</th>
<th>User Profile Session Control</th>
<th>11:42:05</th>
</tr>
</thead>
<tbody>
<tr>
<td>User name: RDHDXJ4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Type the following information to control the session. Then Exit.

Type "YES" in the "LOCKED" column to prevent the user from changing a value.

Type dashes (-) in fields to be set from the indicated Master Profile.

| Administration authority . . . . . . . Y | (Y=Yes,N=No) | LOCKED |
| Use Master Profile access lists . . . N | (Y=Yes,N=No) |
| Master Profile . . . . . . . . . . . . | NO_ |
| Size of request unit (RU) buffer . . . . | _512 | (64-1024 KB) | NO_ |
| Size of report data file buffers . . . . | _256 | (64-1024 KB) | NO_ |
| Size of the report output buffer . . . . | _256 | (64-4096 KB) | NO_ |
| Report IFID count warning threshold . . | _10000 | (100-100000) | NO_ |
| Maximum address space storage usage . . | _100 | (5-128 MB) | NO_ |
| Maximum hiperspace storage usage . . . . | _0 | (0-256 MB) | NO_ |
| DASD workfile primary allocation . . . . | _20 | (1-200 Cyls) | NO_ |

The values that are initially displayed on this panel are the default values that are shipped with the product. You can change any or all of these values. In addition, you can indicate whether you want the user to be able to change the values:

- When you lock values by typing YES in the LOCKED column, the user can display those values but cannot change them.
- If you type NO in the LOCKED column, the values are not locked and the user can modify them at any time.

**NOTE**

The Administration authority value can be changed only by an administrator. The value in the LOCKED column is ALWAYS.

To use a Master Profile for one or more of the values on this panel, type the name of the profile to be used in the Master Profile field and type one or more dashes (--) in the fields to be retrieved from the specified Master Profile.
In the example in Figure 11 on page 35, the values that are specified on this panel will be used, with the exception of the following fields. The values for these fields will be retrieved from the ADMIN profile.

- Maximum address space storage usage
- Maximum hiperspace storage usage
- DASD workfile primary allocation

If you use dashes on any User Profile panels and no Master Profile name is specified on the Session Control panel (or the Master Profile specified does not exist), the default values from the 9DEFAULT records are used. If there is no 9DEFAULT record, the internal default values are used.

**Session options**

Use the User Profile Session Options panel (Figure 12) to set characteristics for the user’s session. You cannot lock any values on this panel. The user is free to modify these values on the Session Options panel of User Options.

The session options specified here do not apply to SQL Explorer-specific panels or Explain panels and reports.

**Figure 12  User Profile Session Options panel (DOMEUPR6)**

![The values that are initially displayed on this panel are the default values that are shipped with the products. You can change any or all of these values.](image-url)
Type one or more dashes (--) in a field to use the value from the Master Profile for that field.

**NOTE**
A valid Master Profile must be specified on the Session Control panel (see “Session control” on page 35). If the Master Profile field is blank or contains an invalid name, default values from the 9DEFAULT record are used in fields containing dashes. If there is no 9DEFAULT record, the internal default values are used.

# Presentation options

Use the User Profile Presentation Options panel (Figure 13) to set the parameters that control the presentation of data on the user’s screen.

The presentation options specified here do not apply on SQL Explorer-specific panels or Explain panels and reports.

**Figure 13  User Profile Presentation Options panel (DOMEUPR8)**

The values that are initially displayed on this panel are the default values that are shipped with the products. You can change any or all of these values. You cannot lock any of these values in the User Profile. The user can change these values at any time.

Type one or more dashes (--) in a field to use the value from the Master Profile for that field.
Function keys

Use the User Profile Function Key Values panel (Figure 14) to set defaults for function keys.

Figure 14  User Profile Function Key Values panel (DOMEUPR7)

<table>
<thead>
<tr>
<th>Primary Keys</th>
<th>Alternate Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1 Help</td>
<td>F13 Home</td>
</tr>
<tr>
<td>F2 Split</td>
<td>F14 Keys</td>
</tr>
<tr>
<td>F3 End</td>
<td>F15 End</td>
</tr>
<tr>
<td>F4 Sort A</td>
<td>F16 terse</td>
</tr>
<tr>
<td>F5 Sort D</td>
<td>F17 Rfind</td>
</tr>
<tr>
<td>F6 Showcmds</td>
<td>F18 Filter</td>
</tr>
<tr>
<td>F7 Up</td>
<td>F19 Up</td>
</tr>
<tr>
<td>F8 Down</td>
<td>F20 Down</td>
</tr>
<tr>
<td>F9 Swap</td>
<td>F21 Expand All</td>
</tr>
<tr>
<td>F10 Left</td>
<td>F22 Left</td>
</tr>
<tr>
<td>F11 Right</td>
<td>F23 Right</td>
</tr>
<tr>
<td>F12 Cancel</td>
<td>F24 Retrieve</td>
</tr>
</tbody>
</table>

The values that are initially displayed on this panel are the default values that are shipped with the products. You can change any or all of these values. You cannot lock any of these values in the User Profile. The user can change these values at any time.

Type one or more dashes (--) in a field to use the value from the Master Profile for that field.

**NOTE**
A valid Master Profile must be specified on the Session Control panel (see “Session control” on page 35). If the Master Profile field is blank or contains an invalid name, default values from the 9DEFAULT record are used in fields containing dashes. If there is no 9DEFAULT record, the internal default values are used.
The function key values that are listed in Figure 14 on page 38 represent the default values shipped with the products. You can assign any ISPF or System and SQL Performance products commands to the function keys; however, if the product is not operating under ISPF, only ISPF functions with equivalent System and SQL Performance products commands are available. You can retrieve the default function key values shipped with the products by using the RESET command on the Command line of this panel.

Type the values exactly as you want them displayed in the function keys at the bottom of each panel. You can use any combination of upper- and lowercase letters.

**NOTE**

A valid Master Profile must be specified on the Session Control panel (see “Session control” on page 35). If the Master Profile field is blank or contains an invalid name, default values from the 9DEFAULT record are used in fields containing dashes. If there is no 9DEFAULT record, the internal default values are used.

The function key values that are listed in Figure 14 on page 38 represent the default values shipped with the products. You can assign any ISPF or System and SQL Performance products commands to the function keys; however, if the product is not operating under ISPF, only ISPF functions with equivalent System and SQL Performance products commands are available. You can retrieve the default function key values shipped with the products by using the RESET command on the Command line of this panel.

Type the values exactly as you want them displayed in the function keys at the bottom of each panel. You can use any combination of upper- and lowercase letters.

**NOTE**

If you change the default value for F6, the value you specify will be used except under the following circumstances:

- The ZOOM command is the default value that is assigned to F6 when a report is displayed (does not apply to SQL Explorer).
- The Explain ZOOM command is the default value assigned to F6 when the Explain Object Selection List (PSSPE100) or the Explain Results panel (PSSPE200) is displayed (APPTUNE, SQL Explorer, and SQL Performance).
- The IEDIT command is the default value that is assigned to F6 when a Command Interface panel is displayed.

These defaults cannot be overridden. If you need to change the default for F6, select a command you do not expect to need while using those functions. Remember, all commands can also be issued from the Command line.

For a complete explanation of the commands that can be used with a System and SQL Performance product, see the user guide for that product.
Chapter 3  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 ................................................................. 41
  Task summary .......................................................... 42
  Considerations when setting data transfer limits .................. 42
Working with DOMPLEX option sets .................................. 43
  Creating a DOMPLEX option set .................................... 44
  Specifying DOMPLEX-level parameters for option sets .......... 45
  Specifying a Data Collector for an option set ..................... 49
  Specifying the DB2 subsystems to monitor ......................... 50
  Creating an output group ............................................. 53
  Deleting obsolete option sets ....................................... 58

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
**Task summary**

Table 1 summarizes the tasks that you complete when setting up a DOMPLEX option set.

Table 1  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 44</td>
</tr>
<tr>
<td>Specify DOMPLEX-level parameters</td>
<td>sets values that apply to the entire DOMPLEX and relate to communication</td>
<td>“Specifying DOMPLEX-level parameters for option sets” on page 45</td>
</tr>
<tr>
<td>(optional after initial setup)</td>
<td>in a sysplex environment For example, you can set data transfer limits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(global and local) or set decimal and date formatting preferences.</td>
<td></td>
</tr>
<tr>
<td>Specify a Data Collector for the option</td>
<td>defines the initialization parameters for the Data Collector subsystem (for</td>
<td>“Specifying a Data Collector for an option set” on page 49</td>
</tr>
<tr>
<td>set</td>
<td>example, the number of concurrent batch and online users that are allowed)</td>
<td></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 50</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 53</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: An output group is a collection of specifications for collecting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and processing data; the data is written to the LOGSET (log file) data sets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>for batch or historical reporting. You can use these output groups to buffer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>trace records, and to allocate LOGSET log files to which the output groups</td>
<td></td>
</tr>
<tr>
<td></td>
<td>will write records.</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 45), 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.

As an alternative, APPTUNE and SQL Performance users can filter requests by time to reduce the amount of data collected.

**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.

NOTE
You can create DOMPLEX option sets only if you have administration authority.

To create a DOMPLEX option set

1 On the product or solution main menu (Figure 2 on page 21 shows an example), select the Administration option.

2 From the Administration menu on the Administration panel, select 2 (DOMPLEX Option Sets).

The DOMPLEX Option Sets panel lists your current DOMPLEX option sets in alphabetical order. Figure 15 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.

Figure 15  DOMPLEX Option Sets panel (LGCP1001)

3 In the field next to the product name (System and SQL Performance DOMPLEX Prof V10.1.0 in Figure 15), type I and press Enter.
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 16 is displayed.

Figure 16  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>

4 Press F3 to exit.

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

6 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 16 on page 45), expand DOMPLEX Parameters.

To expand a section, place the cursor on the plus sign (+) next to that section name and press Enter. To collapse the section, place the cursor on the minus sign (−) and press Enter.

2 Enter values for the displayed fields, as follows:

<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 42.</td>
</tr>
</tbody>
</table>
## Table 2  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. Requests that exceed the limit are terminated. Valid values are any number in the range 1 through 999. The default is 50. For more information about data transfer limits, see “Considerations when setting data transfer limits” on page 42.</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>
</tbody>
</table>
| Translate all panels to upper case                  | Specify whether System and SQL Performance panels and reports should use uppercase letters only:  
  - Y (Yes) uses uppercase letters only.  
  - N (No, the default) uses uppercase and lowercase letters.  
  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. |
| Site Panel Language identifier                      | Specify the language for System and SQL Performance product panels. Valid values are E for English and J for Japanese. The value in this field is the default for all users who do not set a preference in User Options or User Profile.                                                                                     |
### Table 2  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 16 on page 45), 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 3   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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td><em>You cannot leave this field blank.</em> 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.</td>
</tr>
<tr>
<td></td>
<td><em>You cannot leave this field blank.</em> Valid values are any number in the range 0 through 999. The default is 1.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> 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).</td>
</tr>
<tr>
<td></td>
<td><em>You cannot leave this field blank.</em> 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 16 on page 45), expand DB2 Monitor List.

2. In the DB2 Monitor List section, enter the following values:

Table 3  Data Collector List fields (part 2 of 2)

<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 4  DB2 Monitor List fields

<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.</td>
</tr>
<tr>
<td></td>
<td>If this is a production DB2 and no filter is associated to this DB2 the filter defaults to !BMCPROD.</td>
</tr>
<tr>
<td></td>
<td>If this is not a production DB2 and no filter is associated to this DB2 the filter defaults to !BMCTEST.</td>
</tr>
<tr>
<td></td>
<td>Valid values are Y and N.</td>
</tr>
<tr>
<td>Monitor with MainView for DB2 - DC</td>
<td>Specify whether this DB2 will be monitored by MainView for DB2-Data Collector.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Valid values are Y (Yes) and N (No).</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> 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.</td>
</tr>
<tr>
<td></td>
<td>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</td>
<td>Use this parameter to select specific DB2 IFCIDs that you want to trace automatically.</td>
</tr>
<tr>
<td>automatically</td>
<td>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>
</tbody>
</table>
### DB2 Monitor List fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB2 IFCIDs to be discarded</td>
<td>Use this parameter to prevent tracing of specific DB2 IFCIDs.</td>
</tr>
<tr>
<td></td>
<td>When you select this option, a new panel opens so that you can specify the</td>
</tr>
<tr>
<td></td>
<td>IFCIDs that you do not want to trace. Use a comma to separate values.</td>
</tr>
<tr>
<td></td>
<td>To enter a range of values, place a hyphen between the first and last</td>
</tr>
<tr>
<td></td>
<td>values.</td>
</tr>
<tr>
<td>BMC IFCIDs to be discarded</td>
<td>Use this parameter to prevent tracing of specific BMC IFCIDs.</td>
</tr>
<tr>
<td></td>
<td>When you select this option, a new panel opens so that you can specify the</td>
</tr>
<tr>
<td></td>
<td>IFCIDs that you do not want to trace. Use a comma to separate values.</td>
</tr>
<tr>
<td></td>
<td>To enter a range of values, place a hyphen between the first and last</td>
</tr>
<tr>
<td></td>
<td>values.</td>
</tr>
<tr>
<td>Class2-In-DB2 elapsed timing info</td>
<td>Specify whether to collect Class 2-In-DB2 elapsed timing information.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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).</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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 16 on page 45), expand Output Groups.

2. On the Output Groups line, type I on the minus sign (–) and press Enter.
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 5 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 LOGSET log files). Valid values are 0 through 2000.</td>
</tr>
</tbody>
</table>
Data Classes

Expand the Data Classes section to specify the IFCIDs that this output group captures and stores. See Table 6 on page 56 for a description of the following data classes:

- **APERROR**
  Specify Y to collect APPTUNE error data.
- **APOBJECT**
  Specify Y to collect APPTUNE object summary data.
- **APSTACC**
  Specify Y to collect APPTUNE statement accounting interval data.
- **APSTACCS**
  Specify Y to collect APPTUNE statement accounting summaries data.
- **APSTMT**
  Specify Y to collect APPTUNE statement text, host variables, and exceptions data.
- **DB2ACCT**
  Specify Y to collect DB2 accounting data.
- **DB2AUDIT**
  Specify Y to collect DB2 audit data.
- **DB2PERF**
  Specify Y to collect DB2 performance data.
- **DB2SYS**
  Specify Y to collect DB2 statistics events data.
- **DCSYSTEM**
  Specify Y to collect DATA Collector events data.
- **MVDBACC**
  Specify Y to collect MainView for DB2 - DC accounting summary data.
- **OPERTUNE**
  Specify Y to collect OPERTUNE events data.
- **PAHIST**
  Specify Y to collect Pool Advisor history data.

NGL LOGSET Parameters

Expand the NGL LOGSET Parameters section to specify the Next Generation Logger (NGL) LOGSET parameters for the output group. See Table 7 on page 57 for a description of the NGL LOGSET parameters.

Subsystems supported by this group

Place your cursor on > (the greater-than sign) and press Enter 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.
Table 7 provides more information about the data class parameters that you can define for the output group.

Table 6  Data class parameters (part 1 of 2)

<table>
<thead>
<tr>
<th>Data class</th>
<th>IFCIDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>APERRO</td>
<td>APPTUNE/SQL Performance BMC IFCID:</td>
</tr>
<tr>
<td>APOBJ</td>
<td>007—SQL Errors</td>
</tr>
<tr>
<td>APOBJ</td>
<td>APPTUNE/SQL Performance Object Statistics. BMC IFCIDs:</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>008—SQL Statement/Object Cross-Reference</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>009—Access Object Statistics</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>APPTUNE/SQL Performance BMC IFCIDs:</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>006—Interval Statistics</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>307—SQL Statement Summary</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>318—Filter Data</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>APPTUNE/SQL Performance Accounting Statement Summary records:</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>(BMC IFCIDs 308–310)</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>APPTUNE/SQL Performance BMC IFCIDs:</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>004—SQL Exceptions</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>005—SQL Statement Text</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>010—Host Variables</td>
</tr>
<tr>
<td>APSTPCC</td>
<td>011—Object Statistics per SQL Exception</td>
</tr>
<tr>
<td>DB2ACCT</td>
<td>DB2 accounting records. DB2 IFCIDs:</td>
</tr>
<tr>
<td>DB2ACCT</td>
<td>003—Accounting</td>
</tr>
<tr>
<td>DB2ACCT</td>
<td>239—Package Accounting DBRMs</td>
</tr>
<tr>
<td>DB2AUDIT</td>
<td>DB2 audit records. DB2 IFCIDs:</td>
</tr>
<tr>
<td>DB2AUDIT</td>
<td>140—Audit Authorization Failures</td>
</tr>
<tr>
<td>DB2AUDIT</td>
<td>141—Audit GRANTs and REVOKEs</td>
</tr>
<tr>
<td>DB2AUDIT</td>
<td>142—Audited Object DDL</td>
</tr>
<tr>
<td>DB2AUDIT</td>
<td>143—Audited Object First Write Attempt</td>
</tr>
<tr>
<td>DB2AUDIT</td>
<td>144— Audited Object First Read Attempt</td>
</tr>
<tr>
<td>DB2AUDIT</td>
<td>145—Audited Object DML at BIND</td>
</tr>
<tr>
<td>DB2AUDIT</td>
<td>146—User-Defined Audit Trace</td>
</tr>
<tr>
<td>DB2AUDIT</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>DB2PERF</td>
<td>MainView for DB2 – Data Collector IFCIDs:</td>
</tr>
<tr>
<td>DB2PERF</td>
<td>022 and 063 —Dynamic SQL Tracing</td>
</tr>
<tr>
<td>DB2PERF</td>
<td>023–025—Utility Processing</td>
</tr>
<tr>
<td>DB2PERF</td>
<td>090—Text of DB2 Command</td>
</tr>
<tr>
<td>DB2PERF</td>
<td>173—ASUTIME Exceeded</td>
</tr>
<tr>
<td>DB2PERF</td>
<td>125—RID List Processing</td>
</tr>
<tr>
<td>DB2PERF</td>
<td>225—Storage Summary</td>
</tr>
<tr>
<td>DB2SYS</td>
<td>DB2 system records. DB2 IFCIDs:</td>
</tr>
<tr>
<td>DB2SYS</td>
<td>001—System Statistics</td>
</tr>
<tr>
<td>DB2SYS</td>
<td>002—Database Statistics</td>
</tr>
<tr>
<td>DB2SYS</td>
<td>105—DBID/OBID Translate to Names</td>
</tr>
<tr>
<td>DB2SYS</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>MVDBACC</td>
<td>(BMC IFCIDs 350–352)</td>
</tr>
</tbody>
</table>
Table 7 describes the NGL LOGSET parameters that you define for the output group.

Table 6  Data class parameters (part 2 of 2)

<table>
<thead>
<tr>
<th>Data class</th>
<th>IFCIDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPERTUNE c</td>
<td>OPERTUNE records (BMC IFCID 17)</td>
</tr>
</tbody>
</table>
| PAHIST     | Pool Advisor History. BMC IFCIDs:  
|            | - 072—DB2 Storage Usage Status  
|            | - 082—DB2 Page Set Access Statistics  
|            | - 086—DB2 Object Getpage Statistics  
|            | - 089—DB2 Object Getpage Event Trace  
|            | - 095—DB2 Dynamic Statement Cache Plan/DBRM (History)  
|            | - 096—DB2 Dynamic Statement Cache by Plan (History)  
|            | - 097—DB2 Dynamic Statement Cache by DBRM (History)  
|            | - 098—DB2 Dynamic Statement Cache by Corr ID (History)  
|            | - 099—DB2 Dynamic Statement Cache by Conn ID (History)  |

---

Table 7  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>
</tbody>
</table>
Table 7  NGL LOGSET parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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><em>(optional)</em> Specify the volume for the LOGSET.</td>
</tr>
<tr>
<td>DFSMS Data class</td>
<td><em>(optional)</em> Specify the DFSMS data class for the LOGSET.</td>
</tr>
<tr>
<td>DFSMS Management class</td>
<td><em>(optional)</em> Specify the DFSMS management class for the LOGSET.</td>
</tr>
<tr>
<td>DFSMS Storage class</td>
<td><em>(optional)</em> 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><em>(optional)</em> Specify the member that contains the job that executes when the archive job is done. The data set that contains the member is defined by the DOMPARMS DD in the DBC started task.</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>
<tr>
<td>Size Archived data sets retained</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 Volume</td>
<td><em>(optional)</em> Specify the volume for the archive.</td>
</tr>
<tr>
<td>Archive DFSMS Data class</td>
<td><em>(optional)</em> Specify the DFSMS data class for the archive.</td>
</tr>
<tr>
<td>Archive DFSMS Management class</td>
<td><em>(optional)</em> Specify the DFSMS management class for the archive.</td>
</tr>
<tr>
<td>Archive DFSMS Storage class</td>
<td><em>(optional)</em> Specify the DFSMS storage class for the archive.</td>
</tr>
<tr>
<td>Archive DSN prefix</td>
<td><em>(optional)</em> Specify the DSN prefix for the archive.</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 15 on page 44), type D next to the option set that you want to delete.

2. Press Enter.
Diagnostic and maintenance procedures

This chapter contains instructions for applying corrective maintenance and for diagnostic procedures to run when you encounter a problem with a System and SQL Performance product. The following topics are included:

Applying maintenance ............................................................. 61
Viewing PTF maintenance ......................................................... 61
Producing a dump .................................................................. 62
   To dump the DB2 database address space for APPTUNE .......... 63
   To dump a Pool Advisor data space ........................................ 63
Reporting problems ................................................................. 64

Applying maintenance

The System and SQL Performance products use SMP/E to apply maintenance. The System and SQL Performance for DB2® Installation Guide provides comprehensive procedures for obtaining and applying SMP/E maintenance to your products.

Viewing PTF maintenance

You can view a list of all PTFs that are currently applied to the products by viewing the Maintenance Table PTF Display. The Maintenance Table PTF Display is accessed by selecting option 6 from the Administration menu.
Producing a dump

The Maintenance Table PTF Display (Figure 17) shows the level and release date of the product on your system.

**Figure 17  Maintenance Table PTF Display (DOMEZAPT)**

---

Producing a dump

The procedures in this section can assist BMC Software Customer Support to diagnose problems you encounter while using the System and SQL Performance products. Use these instructions if a BMC Software customer support representative asks you to produce a dump.

You might be asked to provide dump data for any or all of the following MVS address spaces:

- DB2 Subsystem Address Space (SSAS)
- DB2 Data Base Address Space (DBAS)
- IMS Resource Lock Manager (IRLM)
- Data Collector
- Report Manager under TSO
- IMS region connected to DB2
- CICS region connected to DB2

Before producing an SVC dump, ensure that an MVS dump data set is available. Use the following MVS command at an operator console to check the status of MVS dump data sets:

```
DISPLAY DUMP,T
```

To produce a dump while a region is active, use the following MVS command at an operator console:

```
DUMP COMM=(AMFORDB2 DUMP)
```
The following WTOR message is issued in response:

*R nn.IEEE094D SPECIFY OPERAND(S) FOR DUMP COMMAND*

Respond to this message by specifying the dump parameters as in the following examples.

### To dump the DB2 database address space for APPTUNE

To dump DB2 database address space for APPTUNE, use the following parameters:

```r
nn, JOBNAME=(DB2ssidDBM1),
   SDATA=(RGN,SUM,CSA,SQA,LSQA),
   END
```

- `nn` is the WTOR number.
- `'DB2ssidDBM1'` [single quotes (') required] is the name of the DB2 database address space you want to dump.

### To dump a Pool Advisor data space

To dump the data space for Pool Advisor, use the following parameters:

```r
nn, JOBNAME=(regionJobName),
   DSPNAME=('DB2ssidDBM1'.PMD@DB2ssid),
   DSPNAME=('regionJobName'.PMDBDB2ssid),
   DSPNAME=('regionJobName'.DB2ssid@PMD),
   SDATA=(RGN,SUM,CSA,SQA,LSQA),
   END
```
If a BMC Software customer support representative requests that you ship the SVC Dump to BMC Software, use one of the following methods:

- Use IEBGENER to copy the SVC Dump (unformatted) to tape or cartridge. Specify the SYSUT2 data set with the following DCB attributes:

  ```
  DCB=(RECFM=F,LRECL=4160,BLKSIZE=4160)
  ```

- FTP the dump. Go to the BMC Software Support website at [http://www.bmc.com/support_home](http://www.bmc.com/support_home) and click on FTP Information. Click on BMC Software FTP Site User Guide for complete instructions for compressing and sending the dump.

### Reporting problems

At times you might encounter problems using the System and SQL Performance products that require you to contact BMC Software Customer Support for assistance. Before calling your BMC Software customer support representatives, you can gather information that will help them to diagnose and resolve your problem as quickly as possible.

- *nn* is the WTOR number.
- *regionJobName* is the name of the MVS region that you want to dump (for example, DB2PDBM1).
- *’DB2ssidDBM1’ [single quotes () required]* is the name of the owner of the data space that you want to dump.
- *’regionJobName’ [single quotes () required]* is the name of the data space region that you want to dump.
- *PMD@DB2ssid* is the name of the DB2 data collection data space.
- *PMDBDB2ssid* is the name of the getpage data space.
- *DB2ssid@PMD* is the name of the dynamic statement cache data space.

Examples:

- DSPNAME=(’DB2PDBM1’.PMD@DB2P), (DB2 data collection)
- DSPNAME=(’DC01PROC.PMDBDB2P’), (getpage)
- DSPNAME=(’DC01PROC.DB2P@PMD’), (dynamic statement cache)
The following checklist of information is useful in problem determination. Not all items will apply in every situation, but if you check this list before calling and provide as much information as you can when you call, your representative will be able to help you more effectively.

1. What was the sequence of events that resulted in this error?

2. Have you had the same problem before? How often?

3. Which messages were issued to the terminal?

4. Make a copy of the system log containing messages, registers, module names, and so on, at the time of the problem.

5. What version and maintenance levels are you using of the following:
   - SQL Performance for DB2
   - System Performance for DB2
   - APPTUNE for DB2
   - Pool Advisor for DB2
   - SQL Explorer for DB2
   - MainView for DB2
   - MainView for DB2 – Data Collector
   - DB2
   - MVS–OS/390–z/OS
   - DFP/DFSMS
   - CICS
   - security package

6. Save the batch job output from any job that fails.

7. Save the dump if there is one.

8. Make a copy of the Maintenance panel (DOMEZAPT), which lists any PTFs that have been applied (option 6 on the Administration menu).

You can contact BMC by calling BMC Software Customer Support in North America or by contacting a BMC Software international support center outside of North America.

From anywhere in the world, you can contact BMC Software on the World Wide Web or by e-mail:

- Internet address: www.bmc.com
- E-mail address: support@bmc.com
Chapter 5 Collecting and filtering SQL data for reporting

This chapter applies only to APPTUNE and SQL Performance. If neither APPTUNE nor SQL Performance is installed at your site, you can ignore this chapter.

This chapter describes the options for the collection of data in APPTUNE and SQL Performance and helps you use filter and summarization options to produce the data that you want to examine in reports. This chapter contains the following sections:

Overview . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 67
Working with filter option sets . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .69
   Creating a filter option set . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .70
   Specifying options for a filter option set . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .73
   Associating a filter option set . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .85
   Using commands to change collection options . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .87
Selecting intervals . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .88
APPTUNE and SQL Performance records . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .91
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   Collecting data for a specific plan . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .93
   Suppressing collection for specific plans . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .96
   Collecting only exception data . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .98

Overview

In APPTUNE and SQL Performance, the collection of data, the summarization of data, and the filtering of data are specific to each DB2 subsystem. Each DB2 subsystem that can be monitored is associated with a filter option set in the DOMPLEX. Each filter’s collection options are defined once but can be associated with many DB2 subsystems.
You can use filter option sets to define filters that apply to specific combinations of programs, plans, users, correlation IDs, and DB2 subsystems. For each filter in a filter option set, you can define a set of options that control how the data is collected and summarized and how exceptions are recorded. Table 8 describes these options.

Table 8  Collection options (part 1 of 2)

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>collection options</td>
<td>You can choose the types of data that will be collected by each DB2 subsystem. You can choose to collect any or all of the following types of data:</td>
</tr>
<tr>
<td></td>
<td>• buffer pool</td>
</tr>
<tr>
<td></td>
<td>• lock</td>
</tr>
<tr>
<td></td>
<td>• SQL text</td>
</tr>
<tr>
<td></td>
<td>• number of SQL statements</td>
</tr>
<tr>
<td></td>
<td>• object</td>
</tr>
<tr>
<td></td>
<td>You can also choose not to collect any data.</td>
</tr>
<tr>
<td>collection keys</td>
<td>You can choose to summarize data by the following values:</td>
</tr>
<tr>
<td></td>
<td>• program name</td>
</tr>
<tr>
<td></td>
<td>• plan name</td>
</tr>
<tr>
<td></td>
<td>• user ID</td>
</tr>
<tr>
<td></td>
<td>• correlation ID</td>
</tr>
<tr>
<td></td>
<td>• collection ID</td>
</tr>
<tr>
<td></td>
<td>• connection ID</td>
</tr>
<tr>
<td></td>
<td>• consistency token</td>
</tr>
<tr>
<td></td>
<td>• client application</td>
</tr>
<tr>
<td></td>
<td>• client user ID</td>
</tr>
<tr>
<td></td>
<td>• client workstation</td>
</tr>
<tr>
<td></td>
<td>• requesting location</td>
</tr>
<tr>
<td></td>
<td>• implicit qualifier</td>
</tr>
<tr>
<td></td>
<td>• thread type</td>
</tr>
<tr>
<td></td>
<td>• section number</td>
</tr>
<tr>
<td></td>
<td>• statement number</td>
</tr>
<tr>
<td></td>
<td>• dynamic SQL detail</td>
</tr>
<tr>
<td>resource-saving options</td>
<td>You can use the following techniques to limit the amount of data collected, subsequently reducing overhead.</td>
</tr>
<tr>
<td></td>
<td>• bypass timings and exception checks for fetches after the first fetch in cursor</td>
</tr>
<tr>
<td></td>
<td>• ignore literal values for numbers and strings in dynamic</td>
</tr>
<tr>
<td></td>
<td>All dynamic SQL statements that are otherwise the same are considered as one SQL statement.</td>
</tr>
<tr>
<td></td>
<td>• sample data instead of collecting all of it and extrapolate the results</td>
</tr>
</tbody>
</table>
Working with filter option sets

Use filter option sets to set tailored collection options for specific identifiers or to stop data collection. You can use filter option sets to narrow the scope of data collected to reduce overhead.

You can choose to collect data based on specific values for the following identifiers:

- program
- plan name
- user ID
- correlation ID
- DB2 subsystem

For each filter row that you add to the filter option set, you can set options to specify what data is collected. Each set of identifiers can have different options.

Figure 18 is an example of a filter option set with three filter rows (one for PLANA, one for PLANB, and a wildcard). The figure also shows the options associated with the PLANB filtering criteria.
Product administrators can create any number of filter option sets to use under different conditions. You can use a filter option set in one of the following ways:

- associate the filter option set with a DB2 subsystem in the DB2 definition of the DOMPLEX option set to be used when the subsystem is monitored at startup

- change the collection options for a DB2 subsystem by dynamically switching to a different filter

## Creating a filter option set

You can create and use filter option sets only if you have administration authority. To create a filter option set, complete the following steps.

### To create a filter option set

1. From the main menu, select **5 (Administration)** and press **Enter**.

2. From the Administration menu, select **4 (Filters)** and press **Enter**.

The APPTUNE for DB2 Filters panel (Figure 19) is displayed.
In the field next to APPTUNE for DB2, type I and press Enter.

A filter panel (Figure 20) is displayed.

Type I in the action field next to Program and press Enter.

A filter row with an asterisk in each identifier is created.

Complete the specification for that filter by typing over the asterisk in each field, as needed.

Specify values in the program, plan, user, correlation ID, and DB2 fields to control the data to collect, as described in Table 9.
Working with filter option sets

Table 9  Collection identifiers

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program</td>
<td>the name of a program from which to collect data when this filter is specified</td>
</tr>
<tr>
<td></td>
<td>For SAP data, use server values in this field.</td>
</tr>
<tr>
<td></td>
<td>This field is case-sensitive.</td>
</tr>
<tr>
<td>Plan</td>
<td>the name of a plan from which to collect data when this filter is specified</td>
</tr>
<tr>
<td>User ID</td>
<td>the AUTHID of a user associated with the data to collect when this filter is specified</td>
</tr>
<tr>
<td>Corr ID</td>
<td>the correlation ID associated with the data to collect when the filter is specified</td>
</tr>
<tr>
<td></td>
<td>For SAP data, use server values in this field.</td>
</tr>
<tr>
<td></td>
<td>This field is case-sensitive.</td>
</tr>
<tr>
<td>DB2</td>
<td>the DB2 subsystem ID from which to collect data when this filter is specified</td>
</tr>
<tr>
<td></td>
<td>You can use this field to share a filter option set across DB2 subsystems.</td>
</tr>
</tbody>
</table>

**NOTE**

The asterisk (*) can be used as a wildcard at the end of a specification to select all values that begin with the string preceding the asterisk. A lone asterisk in a field selects all values for that identifier. You cannot use wildcards to replace characters within the identifier value.

6 Repeat step 4 and step 5 for each filter that you want to specify in the filter option set.

7 When you finish specifying filter collection identifiers, press F3 to exit and save the filter.

The Create New Option Set panel (Figure 21) is displayed.

Figure 21  Create New Option Set panel

Create New Optionset
LGCW1001
Enter the option set name and description then press Enter. Press PF12 to cancel this action.

Name . . . 
Description . .
F1=Help F3=Exit F12=Cancel

8 In the Create New Option Set panel, enter the following values:
Working with filter option sets

Chapter 5 Collecting and filtering SQL data for reporting

Table 10  Option set names

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>the name of the option set</td>
</tr>
<tr>
<td></td>
<td>This value can be up to 8 characters.</td>
</tr>
<tr>
<td>Description</td>
<td>a description of the option set</td>
</tr>
</tbody>
</table>

9 Press Enter to save your entry and return to the APPTUNE Filters for DB2 panel.

The filter rows that you added to the filter option set have been saved. The filter rows defined in the filter option set will use the default option values until you modify them.

Specifying options for a filter option set

After you specify the filters (as described in “Creating a filter option set” on page 70), you can specify the collection options associated with each filter in the option set.

1 On the APPTUNE for DB2 Filters panel, type E next to the filter option set for which you want to specify options and press Enter.

2 On the filter panel (Figure 22 on page 73), position the cursor next to the filter row for which you want to specify options and press Enter.

That filter expands and shows the options that are available for that filter.

Figure 22  Filter panel

```
VMFILTER - Test filter

Command ===> Scroll ===> PAGE

Filter: Off

-   Program  Plan  User ID  Corr ID  DB2
+   *        PLANA  *        *        *
-   *        *        *        *        *

Skip Collection.  N (Y=Bypass monitoring)
Skip for thread.  N (Only applies if Skip Collection is Y)
+ Collection Options (Y=Yes, N=No)
+ Collection Keys (Y=Yes, N=No)
+ Resource-Saving Options (Y=Yes, N=No)
+ Exception Thresholds and Options
+ Negative SQL Code Options

*************************************************************************** End of List ***************************************************************************
```
3 In the **Skip Collection** field, specify whether any collection should take place.

- Specify **Y** (Yes) if you want to skip data collection for the filter criteria.
- Specify **N** (No) if you want data collection to take place according to the rest of the collection settings specified on this panel.

4 If the **Skip Collection** field is set to **Y**, specify whether to skip collection for the entire thread.

**NOTE**
This option has no effect if you set **Skip Collection** to **N**.

Specify **Skip for Thread** as **Y** to avoid unnecessary costs associated with filter matching logic. The product will skip collection for all executions in the thread after the first skipped execution, even if the program name or correlation ID changes such that executions do not match this filter.

5 Specify the remaining options that you want to associate with this filter criteria by expanding each section and modifying the options.

See the following topics for more information about the options in each section of the filter panel:

- “Collection options” on page 75
- “Collection keys” on page 76
- “Resource-saving options” on page 79
- “Exception thresholds and options” on page 81
- “Negative SQL code options” on page 84

6 Repeat step 2 on page 73 through step 5 on page 74 for each filter for which you want to modify options.

7 Press **F3** to save your changes and return to the APPTUNE for DB2 Filters panel.
**Collection options**

You can choose to collect one or more of the types of data. You can view and modify collection options by expanding the Collection Options section on the filter panel (as shown in Figure 23).

**Figure 23  Collection Options fields**

![Figure 23](image)

Table 11 describes the collection options.

**Table 11  Collection options (part 1 of 2)**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Buffer pool data</strong></td>
<td>Specify whether to collect buffer pool data.</td>
</tr>
<tr>
<td></td>
<td>Valid values are Y (Yes) and N (No). If you want to create exception records based on the number of getpages, you must set this field to Y.</td>
</tr>
<tr>
<td><strong>Lock data</strong></td>
<td>Specify whether to collect lock data.</td>
</tr>
<tr>
<td></td>
<td>Valid values are Y (Yes) and N (No). If you want to create exception records based on the occurrence of timeouts or deadlocks, you must set this field to Y.</td>
</tr>
<tr>
<td><strong>SQL text data</strong></td>
<td>Specify whether to collect SQL text data.</td>
</tr>
<tr>
<td></td>
<td>Valid values are Y (Yes), N (No), S (Static only), and D (Dynamic only).</td>
</tr>
</tbody>
</table>
Collection keys

You can choose to summarize data by collection keys. You can view and modify collection keys by expanding the Collection Keys section on the filter panel (as shown in Figure 24).

WARNING

Each collection key that you specify adds to the reduction key table and might increase overhead. An increase in overhead can:

- increase the time that it takes to generate reports
- increase the data written to the LOGSET log files
- affect storage use
- affect CPU consumption
- cause the reduction table to unload before the specified interval time

Think carefully about the impact this could have at your site before you decide to collect this data.
Figure 24  Collection Keys fields

Table 12 describes the collection keys that you can specify for the filter. The valid values for each of the collection keys are Y (Yes) and N (No).

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program name</td>
<td>Specify whether to collect and summarize data by each program name.</td>
</tr>
<tr>
<td></td>
<td>For SAP data, this field represents server values.</td>
</tr>
<tr>
<td>Plan name</td>
<td>Specify whether to collect and summarize data by each plan name.</td>
</tr>
<tr>
<td>User ID</td>
<td>Specify whether to collect and summarize data by each user ID.</td>
</tr>
</tbody>
</table>
Correlation ID: Specify whether to collect and summarize data by each correlation ID. The correlation ID is a DB2 field that identifies the task executed by DB2. The contents of the correlation ID depends on the source of the task:

- For batch jobs, the correlation ID identifies the job name.
- For TSO applications and applications that use the DB2 call attachment facility, the correlation ID identifies the original authorization ID (the logon user ID).
- For CICS transactions, the correlation ID identifies the connection type, thread type, thread number, and transaction ID.
- For IMS applications, the correlation ID identifies the PST number and PSBNAME of the application.
- For RRS applications, the correlation ID identifies the character string provided by the application during sign on.

Collection ID: Specify whether to collect and summarize data by each collection ID. The collection ID specifies a set of packages bound to a plan.

Connection ID: Specify whether to collect and summarize data by each connection ID. The connection ID is an identifier, supplied by the attachment facility, that is associated with a specific address space connection.

Consistency token: Specify whether to collect and summarize data by each consistency token. The consistency token specifies the version of a package. Use this option to differentiate costs between different versions of a package, or if more than one version of a program is executing.

Client application: Specify whether to collect and summarize data by each client application. The client application is the application name for distributed applications.

Client user ID: Specify whether to collect and summarize data by each client user ID. The client user ID is the ID used for distributed applications.

Client workstation: Specify whether to collect and summarize data by each client workstation. The client workstation is the workstation name for distributed applications.

Requesting location: Specify whether to collect and summarize data by each requesting location. For distributed applications, the requesting location is the location that requested execution of the SQL statement.

Implicit qualifier: Specify whether to collect and summarize data by each implicit qualifier. The implicit qualifier is the value that is used as the creator of any table names that do not explicitly include the creator.

Table 12 Collection keys (part 2 of 3)

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation ID</td>
<td>Specify whether to collect and summarize data by each correlation ID.</td>
</tr>
<tr>
<td></td>
<td>The correlation ID is a DB2 field that identifies the task executed by DB2.</td>
</tr>
<tr>
<td></td>
<td>The contents of the correlation ID depends on the source of the task:</td>
</tr>
<tr>
<td></td>
<td>- For batch jobs, the correlation ID identifies the job name.</td>
</tr>
<tr>
<td></td>
<td>- For TSO applications and applications that use the DB2 call attachment</td>
</tr>
<tr>
<td></td>
<td>facility, the correlation ID identifies the original authorization ID</td>
</tr>
<tr>
<td></td>
<td>(the logon user ID).</td>
</tr>
<tr>
<td></td>
<td>- For CICS transactions, the correlation ID identifies the connection type,</td>
</tr>
<tr>
<td></td>
<td>thread type, thread number, and transaction ID.</td>
</tr>
<tr>
<td></td>
<td>- For IMS applications, the correlation ID identifies the PST number and</td>
</tr>
<tr>
<td></td>
<td>PSBNAME of the application.</td>
</tr>
<tr>
<td></td>
<td>- For RRS applications, the correlation ID identifies the character string</td>
</tr>
<tr>
<td></td>
<td>provided by the application during sign on.</td>
</tr>
<tr>
<td>Collection ID</td>
<td>Specify whether to collect and summarize data by each collection ID.</td>
</tr>
<tr>
<td></td>
<td>The collection ID specifies a set of packages bound to a plan.</td>
</tr>
<tr>
<td>Connection ID</td>
<td>Specify whether to collect and summarize data by each connection ID.</td>
</tr>
<tr>
<td></td>
<td>The connection ID is an identifier, supplied by the attachment facility,</td>
</tr>
<tr>
<td></td>
<td>that is associated with a specific address space connection.</td>
</tr>
<tr>
<td>Consistency token</td>
<td>Specify whether to collect and summarize data by each consistency token.</td>
</tr>
<tr>
<td></td>
<td>The consistency token specifies the version of a package. Use this option</td>
</tr>
<tr>
<td></td>
<td>to differentiate costs between different versions of a package, or if more</td>
</tr>
<tr>
<td></td>
<td>than one version of a program is executing.</td>
</tr>
<tr>
<td>Client application</td>
<td>Specify whether to collect and summarize data by each client application.</td>
</tr>
<tr>
<td></td>
<td>The client application is the application name for distributed applications.</td>
</tr>
<tr>
<td>Client user ID</td>
<td>Specify whether to collect and summarize data by each client user ID.</td>
</tr>
<tr>
<td></td>
<td>The client user ID is the ID used for distributed applications.</td>
</tr>
<tr>
<td>Client workstation</td>
<td>Specify whether to collect and summarize data by each client workstation.</td>
</tr>
<tr>
<td></td>
<td>The client workstation is the workstation name for distributed applications.</td>
</tr>
<tr>
<td>Requesting location</td>
<td>Specify whether to collect and summarize data by each requesting location.</td>
</tr>
<tr>
<td></td>
<td>For distributed applications, the requesting location is the location that</td>
</tr>
<tr>
<td></td>
<td>requested execution of the SQL statement.</td>
</tr>
<tr>
<td>Implicit qualifier</td>
<td>Specify whether to collect and summarize data by each implicit qualifier.</td>
</tr>
<tr>
<td></td>
<td>The implicit qualifier is the value that is used as the creator of any</td>
</tr>
<tr>
<td></td>
<td>table names that do not explicitly include the creator.</td>
</tr>
</tbody>
</table>
Resource-saving options

You can reduce the number of amount of data by using the resource-saving options. You can view and modify these options by expanding the Resource-saving Options section on the filter panel (as shown in Figure 25).
The resource-saving options found in Table 13 can be used to reduce the number of records collected, thereby reducing overhead. Valid values for these options are Y (Yes) and N (No).

Table 13  Filter resource-saving options

<table>
<thead>
<tr>
<th>Option</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bypass FETCH timings</td>
<td>Specify whether to bypass timings and exception checks for fetches after the first fetch in cursor. Specify Y to save on FETCH overhead by bypassing these timings and checks. APPTUNE reports all other activity for the FETCH calls.</td>
</tr>
<tr>
<td>Ignore dyn SQL text literals</td>
<td>Specify whether to ignore literal values for numbers and string in dynamic SQL. Specify Y to ignore literal values. APPTUNE will consider all dynamic SQL statements that differ only by text literals as one SQL statement.</td>
</tr>
<tr>
<td>Sample data with extrapolation</td>
<td>Specify whether to perform data sampling with extrapolation. Sampling reduces the volume of data collected when overhead is an issue by collecting data intermittently for a portion of elapsed time instead of all data. From the sampled data, APPTUNE extrapolates the results and provides a representative sample of the data that would have collected in that interval if sampling was not active. Data is collected intermittently for a total of one quarter of elapsed time. Then the number of sampled records is multiplied by four, so that the numbers on reports approximate the numbers that would be reported without sampling. The accuracy of the extrapolated figures increases as the number of records being sampled increases. Note: Sampling should not be activated when you need to examine specific records, because they might not be included in the sampled data.</td>
</tr>
</tbody>
</table>
Exception thresholds and options

Exception processing allows you to identify, collect, categorize, and analyze your poorest-performing SQL statements. You can choose to collect data for SQL calls that exceed thresholds you set for various values. An exception record is created for each call that exceeds these thresholds (BMC IFCID 004) and you can use the exception reports to examine the data.

You can view and modify the exception thresholds and options by expanding the Exception Thresholds and Options section on the filter panel (as shown in Figure 26).

Figure 26   Exception Thresholds and Options

File Filter Help
Command ===> VMFILTER - Test filter
Scroll ===> PAGE

Filter: Off
- Program Plan User ID Corr ID DB2
- * * * * *
* PLANA * * *

Skip Collection . . N (Y=Bypass monitoring)
Skip for thread . N (Only applies if Skip Collection is Y)
+ Collection Options (Y=Yes, N=No)
+ Collection Keys (Y=Yes, N=No)
+ Resource-Saving Options (Y=Yes, N=No)
- Exception Thresholds and Options
  Elapsed time . . . . . . 0 (0 - 9999999 milliseconds)
  CPU time . . . . . . . . 0 (0 - 9999999 milliseconds)
  Getpage requests . . . . 0 (0 - 99999: forces Buffer Pool to Y)
  Synchronous I/Os . . . . 0 (0 - 99999: forces Stmt Count to Y)
  Deadlocks . . . . . . . N (N=No, Y=Yes: forces Lock data to Y)
  Timeouts . . . . . . . N (N=No, Y=Yes: forces Lock data to Y)
  Show host variables . N (N=No, Y=Yes)
  Issue Exception WTOs . N (N=No, Y=Yes)
  Exception-only roll-ups . N (N=No, Y=Yes)
  Efficiency Filtering . . 0 (0 - 9999 static calls, no xcptn->skip)
+ Negative SQL Code Options

*******************************************************************************
End of List*******************************************************************************
You can set exception thresholds for one or more of the values found in Table 14. An exception record will be created for every exception encountered.

<table>
<thead>
<tr>
<th>Exception value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elapsed time</td>
<td>Specify the number of milliseconds to elapse for an SQL call before an exception record is created. Valid values are any number in the range 0-9999999. A value of 0 indicates that exception records will not be created based on elapsed time.</td>
</tr>
<tr>
<td>CPU time</td>
<td>Specify the amount of CPU time to elapse in milliseconds for an SQL call before an exception record is created. Valid values are any number in the range 0-9999999. A value of 0 indicates that exception records will not be created based on CPU time.</td>
</tr>
<tr>
<td>Getpages request</td>
<td>Specify the getpage count to reach for an SQL call before an exception record is created. Valid values are any number in the range 0-99999. A value of 0 indicates that exception records will not be created based on the number of getpages. If you specify a value greater than 0, the product automatically changes the buffer pool collection option to Y.</td>
</tr>
<tr>
<td>Synchronous I/Os</td>
<td>Specify the synchronous I/O count to reach for an SQL call before an exception record is created. Valid values are any number in the range 0-99999. A value of 0 indicates that exception records will not be created based on the number of synchronous I/Os. If you specify a value greater than 0, the product automatically changes the SQL statement counts collection option to Y.</td>
</tr>
<tr>
<td>Deadlocks</td>
<td>Specify whether to create an exception record when a deadlock occurs. Valid values are Y (Yes) and N (No). A value of N indicates that exception records will not be created based on the occurrence of deadlocks. If you specify Y, the product automatically changes the lock data collection options to Y.</td>
</tr>
<tr>
<td>Timeouts</td>
<td>Specify whether to create an exception record when a timeout occurs. Valid values are Y (Yes) and N (No). A value of N indicates that exception records will not be created based on the occurrence of timeouts. If you specify Y, the product automatically changes the lock data collection option to Y.</td>
</tr>
<tr>
<td>Show host variables</td>
<td>Specify whether to collect host variable values for exception records. Valid values are Y (Yes) and N (No). To collect host variable values, you must set at least one of the exception values set to create exception records. To view the collected host variable values, see the Exceptions -- SQL Text report (SQMCACTE) in Workload Analysis. Zoom from the Exception Analysis report (SQMCACEX).</td>
</tr>
</tbody>
</table>
Use the Exception Analysis report in Workload Analysis to examine the exception records. Zoom to the Exceptions—SQL Text report to see host variable values.

Exception processing is especially useful under the following circumstances:

- if your system and application software are well tuned, but you need to be aware of any rogue statements that might degrade performance or response time

- if you have SQL statements with host variable values that must be externalized to analyze and debug the associated application software programs

Exception processing will cause the production of exception records (BMC IFCID 004) and host variable records (BMC IFCID 010), if specified.

### Table 14  Filter exception options (part 2 of 2)

<table>
<thead>
<tr>
<th>Exception value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue exception WTOs</td>
<td>Specify whether to generate a console write-to-operator (WTO) message for each exception. Valid values are Y (Yes) and N (No). You can use these messages to drive console-based automation. If this value is Y, a maximum of one exception WTO message will be issued per statement per interval.</td>
</tr>
<tr>
<td>Exception-only roll-ups</td>
<td>Specify whether to collect data only when an exception occurs. Valid values are Y (Yes) and N (No). If you specify Y, you must set at least one exception threshold in the Exception Values section of this filter. If you specify Y and do not set an exception threshold, the product changes the value for this option to N. If you set the Dynamic SQL detail option to N, the Exception only roll-ups option automatically changes to N.</td>
</tr>
<tr>
<td>Efficiency filtering</td>
<td>Specify the number of times to execute a static statement in an APPTUNE interval after which, if no exceptions have occurred, APPTUNE counts, but stops monitoring, the statement. If no thresholds are set for timeouts, deadlocks, or exception generation or if the option is set to 0, the Efficiency Filtering option has no effect. The reported measurements are extrapolated, based on the measurements obtained during the monitored executions and the count of non-monitored executions.</td>
</tr>
</tbody>
</table>
**Negative SQL code options**

You can choose whether to generate exception records and messages, issue WTO codes, or capture detail for specific negative SQL codes. You can view and modify the options by expanding the **Negative SQL Code Options** section on the filter panel (as shown in Figure 27).

**Figure 27  Negative SQL Code Options**

![Filter panel showing negative SQL code options]

Table 15 describes the negative SQL code options.

**Table 15  Negative SQL Code Options (part 1 of 2)**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generate Exception</td>
<td>Specify whether to generate an exception for a negative SQL code.</td>
</tr>
<tr>
<td></td>
<td>• Specify Y (Yes) to generate an exception for any negative SQL code.</td>
</tr>
<tr>
<td></td>
<td>• Specify N (No) to not generate exceptions.</td>
</tr>
<tr>
<td></td>
<td>• Specify I (Include) to identify specific SQL codes for which to generate exceptions.</td>
</tr>
<tr>
<td></td>
<td>• Specify E (Exclude) to exclude specific SQL codes from generating exceptions.</td>
</tr>
<tr>
<td></td>
<td>Specify the specific codes to include or exclude in the Exception Codes option.</td>
</tr>
<tr>
<td>Exception Codes</td>
<td>Specify the specific negative SQL codes that you want to include in or exclude from exception reporting. Use this field if you specified I or E in the Generate Exception option. Separate each code with a comma or blank space.</td>
</tr>
</tbody>
</table>
Table 15  Negative SQL Code Options (part 2 of 2)

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture Detail</td>
<td>Specify whether to generate records that provide details about an SQL error that occurred.</td>
</tr>
<tr>
<td></td>
<td>- Specify \textbf{Y} (Yes) to generate detailed information for any negative SQL code.</td>
</tr>
<tr>
<td></td>
<td>- Specify \textbf{N} (No) to not generate detailed information.</td>
</tr>
<tr>
<td></td>
<td>- Specify \textbf{I} (Include) to identify specific SQL codes for which to generate records.</td>
</tr>
<tr>
<td></td>
<td>- Specify \textbf{E} (Exclude) to exclude specific SQL codes from generated records.</td>
</tr>
<tr>
<td></td>
<td>Specify the specific codes to include or exclude in the \textit{Detail Codes} option.</td>
</tr>
<tr>
<td>Detail Codes</td>
<td>Specify the specific negative SQL codes for which you want to include or exclude detailed information in generated records. Use this field if you specify \textbf{I} or \textbf{E} in the \textit{Capture Detail} option. Separate each code with a comma or blank space.</td>
</tr>
<tr>
<td>Issue WTO</td>
<td>Specify whether to generate console messages for negative SQL codes that occur.</td>
</tr>
<tr>
<td></td>
<td>- Specify \textbf{Y} (Yes) to generate console messages for any negative SQL code.</td>
</tr>
<tr>
<td></td>
<td>- Specify \textbf{N} (No) to not generate console messages.</td>
</tr>
<tr>
<td></td>
<td>- Specify \textbf{I} (Include) to identify specific SQL codes for which to generate console messages.</td>
</tr>
<tr>
<td></td>
<td>- Specify \textbf{E} (Exclude) to exclude specific SQL codes. Specify the specific codes to include or exclude in the \textit{WTO Codes} option.</td>
</tr>
<tr>
<td>WTO Codes</td>
<td>Specify the specific negative SQL codes that you want to include in or exclude from messages generated in the console. Use this field if you specified \textbf{I} or \textbf{E} in the \textit{Issue WTO} option. Separate each code with a comma or blank space.</td>
</tr>
</tbody>
</table>

**Associating a filter option set**

You can associate the filter option set with a DB2 subsystem in the DB2 definition in the DOMPLEX option set. This association is made on the DB2 Monitor List section of the DOMPLEX option set (Figure 28 on page 86).
Working with filter option sets

If the filter option set does not have a filter row that consists of all wildcard characters (asterisks) to define default criteria, APPTUNE will treat it as if you had defined that row and set the Skip Collection value to Y so that no data is collected.

If you do not specify a filter option set, APPTUNE will use a default filter option set. The following filter option sets are provided:

- **!BMCTEST** contains settings recommended for test environments. This filter maximizes the functionality of APPTUNE without regard for overhead.
- **!BMCPROD** contains minimal settings for a production environment. These settings minimize the overhead costs associated with filtering.
- **!BMCEFIL** contains sample settings to utilize efficiency filtering.
Using commands to change collection options

APPTUNE and SQL Performance provide commands that you can use to dynamically change the active collection settings.

All of these commands will cause the reduction table to be written to the LOGSET log file and start a new interval.

- **APPON**
  To start (or restart) data collection for a DB2 subsystem

- **APPOFF**
  To stop data collection for a DB2 subsystem

- **APPFILT**
  To dynamically apply (or re-apply) a filter option set for a DB2 subsystem

See the *APPTUNE for DB2 User Guide* for a complete explanation of the APPTUNE commands, or use online Help (type `HELP commandName` on the Command line of any product panel, and press Enter).

The following examples illustrate some of the ways you can use these commands to modify your collection settings. These examples show the command syntax to use when you issue the commands from the operator console. The advantage of this method is that the commands are recorded in the job log for future reference. The commands can also be issued from the Data Collector Command Interface panel.

**Examples**

1. To start collecting data with the filter option set associated with the DB2 subsystem, issue the following command:

   `/DCssid APPON DB2ssid`

2. To activate a filter option set, issue the following command:

   `/DCssid APPFILT DB2ssid filterName`

3. To change an active filter option set:
   - Modify the value on the panels of the filter option set.
Selecting intervals

- Issue the following command: /DCssid APPFILT DB2ssid filterName

**WARNING**

Be very careful when using filter option sets. When previously collected data is reported, you need to know which filter option sets (if any) was in effect at the time the data was collected. If you change the collection options frequently and view data together that was collected using different filters, the data might not be meaningful.

For more information, see the online Help for the filter option set and DOMPLEX option set panels and the APP* commands.

**Selecting intervals**

Use the Select Analysis Interval report (Figure 29) to select the interval or intervals for your reporting session. This report also indicates whether a filter option set was in effect when the data was collected.

You can access the Select Analysis Interval report by selecting 1 (SQL Workload) from the APPTUNE main menu and then selecting 5 (Time Interval).

**Figure 29  Select Analysis Interval report**

<table>
<thead>
<tr>
<th>INTERVAL</th>
<th>DURATION</th>
<th>DB2</th>
<th>ENTRIES</th>
<th>ACTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEGIN     END</td>
<td>--------</td>
<td>-----</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>02/07/11 00:00:00    02/07/11 15:03:25</td>
<td>15:03:25</td>
<td>DEC9</td>
<td>1855</td>
<td>AMD1</td>
</tr>
<tr>
<td>02/06/11 00:00:00    02/06/11 23:59:59</td>
<td>23:59:59</td>
<td>DEC9</td>
<td>19683</td>
<td>AMD1</td>
</tr>
<tr>
<td>02/05/11 17:20:00    02/05/11 23:59:59</td>
<td>06:39:59</td>
<td>DEDR</td>
<td>24520</td>
<td>AMD1</td>
</tr>
<tr>
<td>02/05/11 17:19:00    02/05/11 23:59:59</td>
<td>06:40:59</td>
<td>DEC9</td>
<td>3670</td>
<td>AMD1</td>
</tr>
<tr>
<td>02/04/11 23:02:00    02/05/11 00:01:59</td>
<td>00:59:59</td>
<td>DEC9</td>
<td>652</td>
<td>AMD1</td>
</tr>
<tr>
<td>02/04/11 23:01:00    02/05/11 00:00:59</td>
<td>00:59:59</td>
<td>DEDR</td>
<td>149</td>
<td>AMD1</td>
</tr>
<tr>
<td>02/04/11 22:02:00    02/04/11 23:51:59</td>
<td>01:50:00</td>
<td>DEC9</td>
<td>1928</td>
<td>AMD1</td>
</tr>
<tr>
<td>02/04/11 22:01:00    02/04/11 23:00:59</td>
<td>00:59:59</td>
<td>DEC9</td>
<td>323</td>
<td>AMD1</td>
</tr>
<tr>
<td>02/04/11 21:02:00    02/04/11 22:01:59</td>
<td>00:59:59</td>
<td>DEDR</td>
<td>1924</td>
<td>AMD1</td>
</tr>
<tr>
<td>02/03/11 10:44:59    02/03/11 11:08:59</td>
<td>00:24:00</td>
<td>DEC9</td>
<td>0</td>
<td>BMCNONE</td>
</tr>
<tr>
<td>02/03/11 10:43:59    02/03/11 10:44:59</td>
<td>00:01:00</td>
<td>DEDR</td>
<td>0</td>
<td>BMCNONE</td>
</tr>
</tbody>
</table>

F1=HELP  F2=SPLIT  F3=END  F4=SORT A  F5=SORT D  F6=ZOOM  F7=UP
F8=DOWN  F9=SWAP  F10=LEFT  F11=RIGHT  F12=CANCEL
The Active Filter field indicates whether a filter option set was in effect when the data was collected. If you want to report on multiple intervals, you should check the filtering criteria for all of them. If you view data from multiple intervals that used different filter option sets, the data might not be meaningful.

If you are reporting on intervals for multiple DB2 subsystems, remember that the collection options can differ from one DB2 subsystem to another.

Use the F action code to see the filtering criteria that were used for a specific interval. The Associated Filter Criteria report (Figure 30) is displayed.

**Figure 30  Associated Filter Criteria report**

The Associated Filter Criteria report displays the filters that were in effect when the data in the interval was collected.

Use the filtering criteria to help select the intervals for your reporting session and to determine which reports are relevant to the data collected (for example, exception reports are relevant only if exception data was collected).

**NOTE**

To review what the column headers mean, use the C (Collections Options) or E (Exceptions) option to show a filter row in more detail.

**Example**

The filter shown in Figure 30 that was active when the data in the selected interval was collected is called AMD1.

- The first row applies to all statements that had a plan name of PLANA.
  - All collection keys are active.
  - All data is reported except object data.
  - Data is sampled with extrapolation.
Selecting intervals

- The second row applies to all statements that had a plan name of PLANB.
  - All collection keys are active.
  - All data is reported except object data.
  - FETCH SQL calls will be ignored because BYPASS FETCH timings is set to Y (Yes).

- The third row contains all asterisks for the keys which will sort to the bottom of the filter rows. The collection options specified in this row apply to all statements except those with a plan name of PLANA or PLANB.

Use the C action code to display the Filter Collection Options report (Figure 31), which outlines all of the collection keys, collection options, resource-saving options, exception thresholds, and negative SQL code settings.

**Figure 31  Filter Collection Options report (SQMINTF1)**

The qualifier specifications from the selected filter row are displayed at the top of the panel (highlighted in Figure 31).
Use the E action code to display the Filter Exception Options report (Figure 32), which outlines the exception thresholds for the selected row.

The qualifier specifications from the selected filter row are also displayed at the top of this panel (highlighted in Figure 32).

**Figure 32  Filter Exception Options report (SQMINTF2)**

---

**Filtering scenarios**

The scenarios in this section are designed to help you understand how to select the data you collect with APPTUNE so that you can achieve the desired results.
The default collection options that are shipped with APPTUNE are shown in Figure 33. The following examples assume that the default collection options are specified in the filter option sets.

**Figure 33  Default options**

<table>
<thead>
<tr>
<th>Command</th>
<th>Filter</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>File</td>
<td>Filter</td>
<td>Help</td>
</tr>
<tr>
<td><strong>noname</strong></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Command</strong></td>
<td><strong>more</strong>:</td>
<td><strong>+</strong></td>
</tr>
<tr>
<td><strong>Filter</strong>:</td>
<td><strong>off</strong></td>
<td><strong>+</strong></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Program</strong></td>
<td><strong>Plan</strong></td>
<td><strong>User ID</strong></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Collection options</strong>:</td>
<td><strong>(Y=yes, N=No)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Buffer pool data</strong>:</td>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Lock data</strong>:</td>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>SQL text data</strong>:</td>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>SQL statement counts</strong>:</td>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Object data</strong>:</td>
<td><strong>N</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Collection keys</strong>:</td>
<td><strong>(Y=yes, N=No)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Program name</strong>:</td>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Plan name</strong>:</td>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>User ID</strong>:</td>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Correlation ID</strong></td>
<td><strong>N</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Collection ID</strong>:</td>
<td><strong>N</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Connection ID</strong>:</td>
<td><strong>N</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Consistency token</strong>:</td>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Client application</strong>:</td>
<td><strong>N</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Client user ID</strong>:</td>
<td><strong>N</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Client workstation</strong>:</td>
<td><strong>N</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Requesting location</strong>:</td>
<td><strong>N</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Implicit Qualifier</strong>:</td>
<td><strong>N</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Thread type</strong>:</td>
<td><strong>N</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Section number</strong>:</td>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Statement number</strong>:</td>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Dynamic SQL detail</strong>:</td>
<td><strong>N</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Resource-Saving Options</strong>:</td>
<td><strong>(Y=yes, N=No)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Bypass FETCH timings</strong>:</td>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Ignore dyn SQL text literals</strong>:</td>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Sample data with extrapolation</strong>:</td>
<td><strong>N</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Exception Thresholds and Options</strong>:</td>
<td><strong>(Y=yes, N=No)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Elapsed time</strong>:</td>
<td><strong>(0 - 9999999 milliseconds)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>CPU time</strong>:</td>
<td><strong>(0 - 9999999 milliseconds)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Getpage requests</strong>:</td>
<td><strong>(0 - 99999: forces Buffer Pool to Y)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Synchronous I/Os</strong>:</td>
<td><strong>(0 - 99999: forces Stmt Count to Y)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Deadlocks</strong>:</td>
<td><strong>(N-No, Y-Yes: forces Lock data to Y)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Timeouts</strong>:</td>
<td><strong>(N-No, Y-Yes: forces Lock data to Y)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Show host variables</strong>:</td>
<td><strong>(N-No, Y-Yes)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Issue Exception WTOs</strong>:</td>
<td><strong>(N-No, Y-Yes)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Exception-only roll-ups</strong>:</td>
<td><strong>(N-No, Y-Yes)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Efficiency Filtering</strong>:</td>
<td><strong>(0 - 9999 static calls, no xcptn-&gt;skip)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Negative SQL Code Options</strong>:</td>
<td><strong>(Y=yes, N=No, I-Incl, E-Excl)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Generate Exception</strong>:</td>
<td><strong>(Incl/Excl list, e.g. -204, 805)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Capture Detail</strong>:</td>
<td><strong>(Y=yes, N=No, I-Incl, E-Excl)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Detail Codes</strong>:</td>
<td><strong>(Incl/Excl list, e.g. -204, 805)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>Issue WTO</strong>:</td>
<td><strong>(Y=yes, N=No, I-Incl, E-Excl)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
</tr>
<tr>
<td><strong>WTO Codes</strong>:</td>
<td><strong>(Incl/Excl list, e.g. -204, 805)</strong></td>
<td></td>
</tr>
</tbody>
</table>
Collecting data for a specific plan

Assume that you want to collect data for a specific plan named PLN1. You want to create an option set named PLN1ONLY that would contain this filter criteria. You also want to create filter criteria within PLN1ONLY that would stop the collection of data for any other plans.

To collect data for a specific plan

1. Select the Filters option from the Administration menu.

The APPTUNE for DB2 Filters panel is displayed (Figure 34).

Figure 34 APPTUNE for DB2 Filters panel

2. In the field next to APPTUNE for DB2, type I and press Enter.

A blank filter option set panel (Figure 35) is displayed.

Figure 35 Blank filter option set panel
3. Add a filter row to identify the PLN1 plan:

A. In the action field next to Program, type I and press Enter.

B. In the Plan field, type over the asterisk and replace it with PLN1 and press Enter.

C. Position your cursor on the + next to Program and press Enter to expand the filter and show the associated options.

Figure 36  Option categories for PLN1

D. Position your cursor on the + next to Collection Options and press Enter.

E. Change the value of Object data from the default value of N to Y. Accept all other default values.

F. Position your cursor on the - next to the filter row and press Enter to collapse this filter row.
4 Create a filter row to preclude data being collected for other plans:

A In the action field next to Program, type I and press Enter.

The product inserts a filter row with a wildcard character (*) in each field.

B Position your cursor on the + for this filter row and press Enter to expand the options for this filter.

C Change the value of Skip Collection to Y to skip collection for all other plans.

<table>
<thead>
<tr>
<th>Program</th>
<th>Plan</th>
<th>User ID</th>
<th>Corr ID</th>
<th>DB2</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>PLN1</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>-</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

Skip Collection: Y (Y=Bypass monitoring)
Skip for thread: N (Only applies if Skip Collection is Y)
+ Collection Options: Y=Yes, N=No
+ Collection Keys: Y=Yes, N=No
+ Resource-Saving Options: Y=Yes, N=No
+ Exception Thresholds and Options
+ Negative SQL Code Options

All other specifications defined in the option set will be ignored when Skip Collection is set to Y. Doing so allows you to set your collection options once and toggle whether to collect data based on that criteria or exclude it from the collection.

5 Press F3 to save your filter.

6 In the Create New Option Set pop-up, enter PLAN1ONLY as the name of the option set and a description and press Enter.

Where to go from here

The first row in the filter option set specifies that data will be collected when the plan is PLN1. The second row disables collection for everything else.
You can associate this filter option set to a specific DB2 subsystem in the DB2 definition of the DOMPLEX option set (see “Associating a filter option set” on page 85) or you can issue an APPFILT command to activate the filter option set dynamically (see “Using commands to change collection options” on page 87).

Suppressing collection for specific plans

Assume that you want to avoid collection for specific applications that execute a large number of very efficient SQL statements. When you confirm that no tuning is required, you can use the following technique to prevent collection of those SQL statements and save resources.

In this example, no data will be collected for any plan with “BIGB” as the first four characters of its name.

To suppress collection for specific plans

1 Select the Filters option from the Administration menu.

The APPTUNE for DB2 Filters panel is displayed (Figure 34 on page 93).

2 In the field next to APPTUNE for DB2, type I and press Enter.

A blank filter option set panel is displayed (Figure 35 on page 93).

3 Add a filter row to identify the plans that you want to suppress:

A In the action field next to Program, type I and press Enter.

B In the Plan field, type over the asterisk and replace it with BIGB* and press Enter.

-   Program  Plan     User ID  Corr ID      DB2
    + *       BIGB*  *  *            *

Doing so indicates that you want the options that you specify to apply to any plans that begin with the letters BIGB.

C Position your cursor on the + for this filter row and press Enter to expand the filter.

D Change the value of Skip Collection to Y to skip collection of data for this plan.
All other specifications defined in the option set will be ignored when Skip Collection is set to Y.

4 Add a filter row to specify that you want to collect data for other plans:

A In the action field next to Program, type I and press Enter.

The product inserts a filter row with a wildcard character (*) in each field.

B Position your cursor on the + for this filter row and press Enter to expand the options for this filter.

C Ensure that the value of Skip Collection is set to Y to enable collection for all other plans.

D Set other options, as necessary.

5 Press F3 to save your filter.

6 In the Create New Option Set pop-up, enter NOBIGB as the name of the option set and a description and press Enter.

```
Create New Optionset
Enter the option set name and description then press Enter. Press PF12 to cancel this action.
Name . . . . . NOBIGB
Description . . DO NOT COLLECT FOR BIG BATCH
F1=Help    F3=Exit    F12=Cancel
```

Where to go from here

You can associate this filter option set to a specific DB2 subsystem in the DB2 definition of the DOMPLEX option set (see “Associating a filter option set” on page 85) or you can issue an APPFILT command to activate the filter option set dynamically (see “Using commands to change collection options” on page 87).
Collecting only exception data

Assume that you want the resource-saving option called Exception-only roll-ups to collect and summarize data only for occurrences of statements that exceed one or more specified thresholds. This option reduces the amount of resources used and the amount of data collected.

To create a filter option set for collecting exceptions

1. Select the Filters option from the Administration menu.

   The APPTUNE for DB2 Filters panel (Figure 34 on page 93) is displayed.

2. In the field next to APPTUNE for DB2, type I and press Enter.

   A blank filter option set panel (Figure 35 on page 93) is displayed.

3. Add a filter row:

   A In the action field next to Program, type I and press Enter.

   B Accept the asterisks in each field.

   - Program  Plan  User ID  Corr ID  DB2
   + * * * * *
   ********************************* End of List *********************************

   The filter row will apply to all programs, plans, users, DB2 subsystems, and correlation IDs.

   C Position your cursor on the + for this filter row and press Enter to expand the options for this filter row (as shown in Figure 37 on page 99).
Filtering scenarios

Chapter 5 Collecting and filtering SQL data for reporting

Figure 37 Applying filter options to the default row

4 Specify the threshold options:

A Position the cursor on the + next to Exception Thresholds and Options and press Enter to expand that set of options.

B Specify Y in the Exception-only rollups-field and at least one threshold value.

- Exception Thresholds and Options
  Elapsed time . . . . . . . . . . 0 (0 - 9999999 milliseconds)
  CPU time . . . . . . . . . . . . 10 (0 - 9999999 milliseconds)
  Getpage requests . . . . . . . 0 (0 - 999999: forces Buffer Pool to Y)
  Synchronous I/Os . . . . . . . 0 (0 - 999999: forces Stmt Count to Y)
  Deadlocks . . . . . . . . . . . N (N=No, Y=Yes: forces Lock data to Y)
  Timeouts . . . . . . . . . . . N (N=No, Y=Yes: forces Lock data to Y)
  Show host variables . . . . . N (N=No, Y=Yes)
  Issue Exception WTOs . . . N (N=No, Y=Yes)
  Exception-only roll-ups . Y (N=No, Y=Yes)
  Efficiency Filtering . . . . 0 (0 - 9999 static calls, no xcptn->skip)

In this case, an exception record will be created for every SQL statement that uses more than 10 milliseconds of CPU time.

5 Specify that you want to the Dynamic SQL detail option to Y.

BMC Software recommends that you set Dynamic SQL detail to Y (Yes) when using the Exception-only roll-ups option to collect dynamic SQL.

A Position the cursor on the + next to Collection Keys and press Enter to expand that set of options.

B Change the Dynamic SQL detail field to Y.
Filtering scenarios

- Collection Keys (Y=Yes, N=No)
  - Program name . . . Y
  - Plan name . . . . Y
  - User ID . . . . . N
  - Correlation ID . . N
  - Collection ID . . Y
  - Connection ID . . N
  - Consistency token . Y
  - Client application N
  - Client user ID . . N
  - Client workstation N
  - Requesting location N
  - Implicit Qualifier N
  - Thread type . . . N
  - Section number . . Y
  - Statement number . Y
  - Dynamic SQL detail Y

6  Press F3 to save your filter.

7  In the Create New Option Set pop-up, enter XONLYALL as the name of the option set and a description and press Enter.

Where to go from here

You can associate this filter option set to a specific DB2 subsystem in the DB2 definition of the DOMPLEX option set (see “Associating a filter option set” on page 85) or you can issue an APPFILT command to activate the filter dynamically (see “Using commands to change collection options” on page 87).
Batch utilities

The batch utilities are used by APPTUNE, the APPTUNE component of the SQL Performance solution, and MainView for DB2® – Data Collector. If none of these products is installed at your site, you can ignore this appendix.

This appendix contains the following sections:

- Overview .......................................................... 103
- The DOMBSWIT utility ........................................... 104
- The DOMARCI utility .......................................... 106
- The DOMARCB utility .......................................... 109

Overview

The batch utilities listed in Table 16 are provided with the System and SQL Performance products:

<table>
<thead>
<tr>
<th>Utility name</th>
<th>Description</th>
<th>Where documented</th>
</tr>
</thead>
</table>
| DOMBRPT1     | The DOMBRPT1 utility produces printed reports from a batch job. DOMBRPT1 can also produce data in a format suitable for use by the DB2 Load utility. | See the appropriate book for the product that you are using:  
  - APPTUNE for DB2 User Guide  
  - MainView Performance Reporter for DB2 User Guide |
| DOMBLOD1     | The DOMBLOD1 utility takes the DB2LOAD data set written by DOMBRPT1 and creates the appropriate CREATE TABLE DDL and LOAD utility control statements for the table to be loaded. | See the APPTUNE for DB2 User Guide. |
The DOMBSWIT utility

The DOMBSWIT utility is used to invoke the Data Collector SWITCH command from a batch job. The program DOMBSWIT is shipped with the System and SQL Performance products in the load library. The source code for DOMBSWIT is in the BBSAMP data set. If modifications are made to this source code, DOMBSWIT must be assembled and linked into the Data Collector or other APF-authorized load library. You must specify AC=1 in the linkage editor parameters to show that this routine executes from an APF-authorized library in supervisor state.

The Data Collector and output group are specified in the PARM portion of the EXEC JCL statement that invokes DOMBSWIT, as in the following example:

```
PARM=xxxxyy
```

where `xxxx` is the Data Collector subsystem ID and `yyy` is the output group whose LOGSET log files are to be switched. Valid values are:

- `yyy` the number of the output group (001–128)
- `ALL` to indicate all output groups

---

**Table 16** System and SQL Performance products batch utilities (part 2 of 2)

<table>
<thead>
<tr>
<th>Utility name</th>
<th>Description</th>
<th>Where documented</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSSBLOAD</td>
<td>The PSSBLOAD utility loads performance data into three DB2 tables—METRICS, SQLTXT, and OBJECT_REF—with information from archived LOGSET log files for accounting metrics, object statistics, SQL errors, and SQL text along with the interval in which the statement was executed.</td>
<td>See the APPTUNE for DB2 User Guide.</td>
</tr>
<tr>
<td>DOMBPLOG</td>
<td>The DOMBPLOG utility prints all entries from the specified report log.</td>
<td>See the APPTUNE for DB2 User Guide.</td>
</tr>
<tr>
<td>DOMBSWIT</td>
<td>The DOMBSWIT utility invokes the Data Collector SWITCH command from a batch job.</td>
<td>See “The DOMBSWIT utility” on page 104.</td>
</tr>
</tbody>
</table>
The #DOMSWIT member of the BBSAMP data set contains sample JCL to invoke DOMBSWIT (see Figure 38).

**Figure 38   DOMBSWIT JCL**

```plaintext
//DOMBSWIT JOB (ACCT),"SWITCH AMFORDB2 TRACE", <= MODIFY
// USER=AMFORDB2,                 <= MODIFY
// MSGCLASS=X,                     <= CHECK
// CLASS=A                         <= CHECK
//*
//*  DOMBSWIT -- SWITCH DATA COLLECTOR TRACE DATASET
//*
//*  DOMBSWIT FORCES THE DATA COLLECTOR TO EXTERNALIZE EXISTING TRACE
//*  RECORDS OF THE TARGET OUTPUT GROUP(S) TO THE ARCHIVE PROCESS
//*
//*  MODIFY ==>  ?BMC-HLQ?
//*    ?DOM1?  = DATA COLLECTOR SUBSYSTEM NAME
//*    ?OG?   = DATA COLLECTOR OUTPUT GROUP NUMBER
//*    EG. '001' FOR OUTPUT GROUP 001
//*
//*
//*  DOMBSWIT EXEC PGM=DOMBSWIT,PARM='?DOM1??OG?'
//STEPLIB  DD   DISP=SHR,DSN=?BMC-HLQ?.BBLINK
//*
//DOMCUST   DD DISP=SHR,DSN=?BMC-HLQ?.BBCSTM
//DOMBARC   DD DISP=SHR,DSN=?BMC-HLQ?.COPYDIR
//DOMPROF   DD DISP=SHR,DSN=?BMC-HLQ?.PROFILE
//DOMAUTH   DD DISP=SHR,DSN=?BMC-HLQ?.SECURITY
//DOMHELP   DD DISP=SHR,DSN=?BMC-HLQ?.BBHELP
//*
//SYSPRINT DD   SYSOUT=*  */
```
The DOMARCI utility

The DOMARCI utility is a program that you can use to format a new COPYDIR file. You can also use this utility to copy the records from an old archive directory to the new format, or to copy the records of an already formatted file.

The number of records to format is specified in the PARM portion of the EXEC JCL statement that invokes DOMARCI, as in the following example:

```
PARM=nxxx
```

Define the new COPYDIR data set with RECORDSIZE(32760 32760). The RECORDS (cluster level) clause should specify the same number of records that will be specified in the PARM= for program DOMARCI. The maximum value allowed is 16000.

The #DOMARCI member of the BBSAMP data set contains sample JCL to invoke DOMARCI:

---

**Figure 39  Sample DOMARCI JCL (part 1 of 3)**

```plaintext
/* DOMARCI -- INITIALIZE A NEW COPYDIR DATASET OR COPY RECORDS */
/* FROM AN EXISTING */
/* THIS PROGRAM IS NORMALLY RUN AS PART OF THE INSTALL PROCESS - */
/* EITHER IN JOB $C10VSAM OR $C68DOM DEPENDING ON WHETHER "MIGRATE" */
/* IS BEING DONE FROM A PREVIOUS RELEASE. HOWEVER, IF YOU HAVE TO */
/* DELETE/DEFINE THE COPYDIR FILE, THEN THIS JOB NEEDS TO BE */
/* CUSTOMIZED AND RUN TO INITIALIZE THE NEW FILE PRIOR TO BEING USED. */
/* BOTH THESE FUNCTIONS WILL USE DD=COPYDIR2 AS THE NEW FILE THAT */
/* WILL BE INITIALIZED. */
/* THIS PROGRAM MAY ALSO BE USED TO COPY RECORDS FROM A PRE-V5.2 */
/* COPYDIR FILE INTO A NEW INITIALIZED FILE. IN THIS CASE, THE */
/* DD=COPYDIR2 WILL BE THE PRE-V5.2 FILE, AND THE DD=COPYDIR2 */
/* WILL BE THE NEWLY INITIALIZED FILE. BY USING BOTH THESE DD'S */
/* IN THE SAME JOBSTEP, THEN THE PROGRAM WILL PERFORM BOTH FUNCTIONS */
/* DURING THE ONE JOBSTEP. */
/* THE PARM FIELD SPECIFIES "NUMBER OF RECORDS" AND MUST BE THE */
/* SAME AS THAT SPECIFIED IN THE "RECORDS(?)NNNNN?) PARAMETER WHEN THE */
/* FILE WAS DEFINED. THE MAXIMUM VALUE ALLOWED IS 16,000. */
/* DATA COLLECTOR MUST NOT BE ACTIVE WHEN THIS JOB IS RUN. */
```
---

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Figure 39  Sample DOMARCI JCL (part 2 of 3)

```plaintext
//*                                         SAVED AS.
//*----> CHANGE:  ?NNNNN?  = NUMBER OF ARCHIVE DIRECTORY ENTRIES
//*----> CHANGE:  ?DEVXXX?  = VOLUME TO DEFINE DATASET ON
//*----> CHANGE:  COPYDIR1  = OPTIONALLY UNCOMMENT THIS DD
//*-------------------------------------------------------*
//* ALLOCATE NEW COPYDIR ARCHIVE DIRECTORY                */
//*-------------------------------------------------------*/
//ALLOCNEW  EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=* 
//SYSIN    DD *
DELETE ?NEW.COPYDIR? PURGE
SET MAXCC = 0
DEFINE CLUSTER -
  ( NAME(?NEW.COPYDIR?) -
    FREESPACE(0 0) -
    INDEXED  KEYS(2 21) -
    NRUS -
    UNIQUE -
    RECORDS(?NNNNN? 0) -
    SHAREOPTIONS(4 3) -
    RECOVERY -
    NOWRITECHECK ) -
DATA -
  ( NAME(?NEW.COPYDIR?.DATA) -
    VOLUMES(?DEVXXX?) -
    CISZ(32767) -
    RECSZ(32760 32760) ) -
INDEX -
  ( NAME(?NEW.COPYDIR?.INDEX) -
    VOLUMES(?DEVXXX?) -
    CISZ(1024) )
/*
//*---------------------------------------------------------*/
//* FORMAT AND OPTIONALLY CONVERT THE NEW ARCHIVE DIRECTORY */
//*---------------------------------------------------------*/
//DOMARCI EXEC PGM=DOMARCI,PARM=?NNNNN?
//STEPLIB  DD  DSN=?BMC-HLQ?.BBLINK,DISP=SHR
//SYSPRINT DD    SYSOUT=* 
//*----> COPYDIR1 IS AN OPTIONAL DD STATEMENT.         */
//* IF USED THE RECORDS FROM THIS DATASET WILL BE COPIED/CONVERTED
//* FROM COPYDIR1 INTO THE NEW COPYDIR2 DATASET
//*---------------------------------------------------------*/
//COPYDIR1 DD    DISP=SHR,DSN=OLD.COPYDIR
//COPYDIR2 DD    DISP=SHR,DSN=NEW.COPYDIR
//ALTERNAM EXEC PGM=IDCAMS,REGION=OM,COND=(0,LE)
```
The DOMARCI utility

**Figure 39** Sample DOMARCI JCL (part 3 of 3)

```plaintext
//** BY EXECUTING THIS ALTER RENAME, YOUR CURRENT COPYDIR DATASET WILL BE
//** RENAMED TO A SAVE VERSION, AND THE NEW COPYDIR WILL BECOME THE SAME
//** AS YOUR CURRENT COPYDIR NAME THUS PREVENTING YOU FROM HAVING TO
//** CHANGE YOUR COPYDIR DSN IN DOMPLEX OPTION SET.
//**-----------------------------------------------------------------
//SYSPRINT DD SYSOUT=*  
//SYSIN DD *
ALTER  ?OLD.COPYDIR? -       
   NEWNAME(?SAV.COPYDIR?)
ALTER  ?OLD.COPYDIR?.DATA -   
   NEWNAME(?SAV.COPYDIR?.DATA)
ALTER  ?OLD.COPYDIR?.INDEX -  
   NEWNAME(?SAV.COPYDIR?.INDEX)
ALTER  ?NEW.COPYDIR? -       
   NEWNAME(?OLD.COPYDIR?)
ALTER  ?NEW.COPYDIR?.DATA -   
   NEWNAME(?OLD.COPYDIR?.DATA)
ALTER  ?NEW.COPYDIR?.INDEX -  
   NEWNAME(?OLD.COPYDIR?.INDEX)
/*
//*------------------- END OF: #DOMARCI -------------------------------
```

The DOMARCI program initializes and copies in one jobstep if the COPYDIR1 DD statement is present. If you exclude the COPYDIR1 DD statement, the COPYDIR data set is formatted, but does contain any old records.

The JCL in **Figure 40** formats 1000 records and converts the records from COPYDIR1 to the new format in COPYDIR2.

**Figure 40** Example using DOMARCI

```plaintext
//DOMARCI  EXEC PGM=DOMARCI,PARM=1000
//STEP1B  DD DSN=USER01.BMCPERF.BBLINK,DISP=SHR
//SYSPRINT DD SYSOUT=*  
//SYSUDUMP DD SYSOUT=*  
//COPYDIR1 DD DISP=SHR,DSN=USER01.BMCPERF.COPYDIR
//COPYDIR2 DD DISP=SHR,DSN=USER01.BMCPER2.COPYDIR
```
The DOMARCB utility

The DOMARCB utility removes entries from the copy directory based on criteria that is specified in the program’s control statements, and then consolidates the remaining entries, allowing active records to be retained for a longer period of time.

You can use the following control statements with DOMARCB:

- **REMOVE SSID(****)** removes data or records associated with a specific DB2 subsystem.

- **REMOVE DAYS(nn)** removes records older than the specified number of days.

- **REMOVE UNCATALOGED** removes records for which the archive data set is not currently cataloged.

- **REORGANIZE** consolidates free records and sets the wrap pointer to the first one, ensuring that all free records will be used before the wrap function overwrites existing data.

At installation time, the archive directory data set is created and preformatted with a fixed number of records. No new records can be added past that fixed number. When a record is deleted, it is not physically removed, but is left in the file for reuse. When the data set is full, the oldest records are overwritten first, even if they have not been marked for reuse.

The REORGANIZE option consolidates all records marked as deleted so that they will be overwritten first. Existing data is overwritten only after all deleted records are overwritten. Figure 41 illustrates this process.

**Figure 41  DOMARCB example**

- Most recent records
- Deleted records remain in place. Since records are used in a first-in first-out fashion, the oldest records will be overwritten, whether they are marked as deleted or not.

- Oldest active records
- DOMARCB reorganizes the records so the records marked as deleted are consolidated. These records will be overwritten first.

- Oldest records
- Most recent records
The DOMARCB utility

The #DOMARCB member of the BBSAMP data set contains sample JCL to invoke DOMARCB (see Figure 42).

**Figure 42  Sample DOMARCB JCL**

```plaintext
//DOMARCB JOB (ACCT)."COPYDIR MAINT".   <<< MODIFY
// MSGCLASS=X.                        <<< CHECK
// CLASS=A                            <<< CHECK
//*
//*
//** DOMARCB - THIS PROGRAM WILL PERFORM MAINTENANCE ON THE COPYDIR
//** FILE. IT WILL ALLOW YOU TO REQUEST RECORDS BE DELETED
//** BASED ON VARIOUS CRITERIA. ANY COMBINATION OF THESE
//** CONTROL CARDS ARE ALLOWED IN ONE JOBSTEP EXECUTION.
//**
//** THE FOLLOWING CONTROL STATEMENTS ARE AVAILABLE:
//**
//** REMOVE SSID(XXXX) --REMOVES DATA OR RECORDS
//** ASSOCIATED WITH THIS DB2 SYSTEM
//** REMOVE DAYS(NN) ----REMOVES RECORDS OLDER THAN XXX
//** DAYS.
//**
//** REMOVE UNCATALOGED -REMOVES RECORDS WHOSE ARCHIVE
//** DATASET IS NOT CURRENTLY CATALOGED.
//** REORGANIZE --------CONSOLIDATES THE FREE RECORDS AND
//** SETS THE WRAP POINTER TO THE FIRST
//** FREE ENTRY. THIS ENSURES THAT ALL
//** THE FREE RECORDS WILL BE USED
//** BEFORE THE WRAP FUNCTION OVERWRITES
//** ANY EXISTING DATA.
//**
//** DDNAME SYSPRINT WILL CONTAIN THE RESPONSES TO THOSE COMMANDS
//**
//*******************************************************
//DOMARCB EXEC PGM=DOMARCB
//STEPLIB DD DISP=SHR,DSN=?BMC-HLQ?.BBLINK
//SYSPRINT DD SYSOUT=*     
//SYSUDUMP DD SYSOUT=*     
//COPYDIR DD DISP=SHR,DSN=?BMC-HLQ?.COPYDIR
//SYSIN DD *
REMOVE UNCATALOGED
REMOVE DAYS(030)
REMOVE SSID(XXXX)
REORGANIZE
//**------------------------ END OF: #DOMARCB ------------------------
```
The output from DOMARCB lists the number of records that were deleted, modified, or moved, depending on the options specified. Figure 43 contains sample output from all four options.

**Figure 43  DOMARCB Sample Output**

<table>
<thead>
<tr>
<th>Output from the REMOVE UNCATALOGED control statement:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL RECORDS DELETED ........................................</td>
<td>41</td>
</tr>
<tr>
<td>TOTAL RECORDS DELETED DUE TO UNCATALOGED DATASETS ....</td>
<td>41</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output from the REMOVE SSID control statement:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL RECORDS DELETED ........................................</td>
<td>37</td>
</tr>
<tr>
<td>TOTAL RECORDS MODIFIED RELATED TO ssid ..................</td>
<td>73</td>
</tr>
<tr>
<td>TOTAL RECORDS DELETED RELATED TO ssid ...................</td>
<td>37</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output from the REMOVE DAYS control statement:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL RECORDS DELETED ........................................</td>
<td>210</td>
</tr>
<tr>
<td>TOTAL RECORDS DELETED DUE TO AGE .........................</td>
<td>210</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output from the REORGANIZE control statement:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL RECORDS DELETED ........................................</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL RECORDS MOVED DUE TO REORGANIZATION ..........</td>
<td>217</td>
</tr>
</tbody>
</table>

- `nmmmmmm` is the number of records that were deleted, modified, or moved.

  Records are modified when a REMOVE SSID(ssid) is issued against a record that is associated with more than one DB2 subsystem. The specified DB2 subsystem is removed, but the record is retained.

- `ssid` is the DB2 subsystem identifier.
APPTUNE and Pool Advisor exits

APPTUNE and Pool Advisor provides the following user exits. The #DOMEXIT member of the BBSAMP library can be used to assemble and link edit these exits if they need to be changed.

Set user ID for security checks (DOMEXIT1) .......................................................... 113
Override security attributes (DOMEXIT2) ............................................................... 114
Validate DB2 user authority (DOMEXIT4) ............................................................... 115
Set session ID (DOMEXIT6) ..................................................................................... 115

Set user ID for security checks (DOMEXIT1)

DOMEXIT1 is invoked by the Data Collector whenever the subsystem user ID must be set or changed for security processing. For example, it is invoked to set the IDs for issuing a -START TRACE command to each DB2® subsystem. This module processes the following requests:

- establishes initial subsystem user ID to MVS
- changes the user ID to another user ID to be used for DB2 authorization
- restores user ID to initial z/OS user ID

This default exit assumes that a security system exists that supports RACF RACROUTE macro services.

The source for DOMEXIT1 is supplied in the DOMEXIT1 member of the BBSAMP data set.
Override security attributes (DOMEXIT2)

NOTE
DOMEXIT1 has been modified to support IBM APAR OW13376, which extends the ASXBUSER field from 7 to 8 bytes. The 8 byte field is accessed by using the name ASXBUSR8. The DOMEXIT1 routine can be modified to use the new 8 byte ASXBUSR8 field if an 8 byte authorization ID is required. See the DOMEXIT1 member of the BBSAMP data set for instructions.

WARNING
This exit is invoked as an extension of the Data Collector in supervisor state. Use extreme caution if privileged instructions or system keys (0–7) are used, because errors could violate the integrity of MVS.

Override security attributes (DOMEXIT2)

DOMEXIT2 is invoked to override selected user security attributes that are specified in the SECURITY data set for APPTUNE and Pool Advisor. This exit can be driven at the start of each user session with a Data Collector. If no user security record exists in the SECURITY data set, the user is not allowed access to the Data Collector and this exit is not driven.

If a user security record does exist, selected fields can be overridden by this exit. These fields show:

- which Data Collectors can be used
- which DB2 subsystems can be used
- user DB2 command authority
- user DB2 trace authority
- user MVS command authority

This default exit assumes that the user is allowed to access the same DB2 subsystems and lists with the same privileges as those specified in the user security record.

The source for DOMEXIT2 is supplied in the DOMEXIT2 member of the BBSAMP data set.

WARNING
This exit is invoked as an extension of the Data Collector in supervisor state. Use extreme caution if privileged instructions or system keys (0–7) are used, because errors could violate the integrity of MVS.
Validate DB2 user authority (DOMEXIT4)

DOMEXIT4 is invoked to validate a user’s authority to invoke a DB2 function (start a trace, for example). The result is to either deny or allow the function.

The source for DOMEXIT4 is supplied in the DOMEXIT4 member of the BBSAMP data set.

--- WARNING ---
This exit is invoked as an extension of the Data Collector in supervisor state. Use extreme caution if privileged instructions or system keys (0–7) are used, because errors could violate the integrity of MVS.

Set session ID (DOMEXIT6)

DOMEXIT6 is invoked each time a user contacts the Data Collector for a new user session. This exit assigns an APPTUNE or Pool Advisor session ID for each user. The user ID is assigned as the session ID by default. The default exit routine is supplied as object code and is part of the normal installation procedure.

The exit is also supplied as assembler source that can be modified to change the user’s session ID (the RACF group ID, for example). The source for DOMEXIT6 can be found in the DOMEXIT6 member of the BBSAMP data set.

It is easy to modify the DOMEXIT6 routine to allow the use of the user’s default RACF group by commenting out the B NOSENV statement. This is documented in the source code and can be located quickly. Only one group in the RACF list is assigned as the default group. This is not a secondary authorization list like DB2 secondary authorization IDs.

When you access an APPTUNE session or the Report Manager from TSO, you can change your default group by inserting a group name into the Group Ident field of the TSO/E logon panel.

APPTUNE and Pool Advisor validate user authority for restricted commands and DB2 interaction by checking the PROFILE and SECURITY data sets for the accessing ID. If the accessing user ID or 9DEFAULT PROFILE does not exist, the user is denied access to the product.
**NOTE**

DOMEXIT6 has been modified to support IBM APAR OW13376, which extends the ASXBUSER field from 7 to 8 bytes. The 8 byte field is accessed by using the name ASXBUSR8. The DOMEXIT6 routine can be modified to use the new 8 byte ASXBUSR8 field if an 8 byte authorization ID is required. See the DOMEXIT6 member of the BBSAMP data set for instructions.

**WARNING**

This exit is invoked as an extension of the Data Collector in supervisor state. Use extreme caution if privileged instructions or system keys (0–7) are used, because errors could violate the integrity of MVS.
Glossary

Symbols

#DOMZAP
Member of the CNTL data set that contains sample JCL that invokes the IBM AMASPZAP utility to apply a SUPERZAP.

Numerics

9DEFAULT record
A record shipped with the System and SQL Performance products that contains a default User Profile. It is composed of a 9DEFAULT security record and a 9DEFAULT user record that together contain the default values for all parameters in the User Profile.

A

ADMIN command
A basic panel command that displays the Administration menu.

APPFILT command
An APPTUNE Data Collector command used to dynamically change the APPTUNE filter for a DB2 without stopping the Data Collector.

APPOFF command
A Data Collector command used to stop APPTUNE data collection and free data reduction storage.

APPON command
A Data Collector command used to start data collection for APPTUNE after the Data Collector is started (when APPTUNE data collection is not started automatically) or after data collection has been stopped by an APPOFF command.

APPRESET command
An APPTUNE Data Collector command used to write the data in the reduction table to the trace data set.

APPTUNE
A BMC Software product used to analyze DB2 application performance.
batch reporting
The process used to produce printed reports from instantaneous or historical data. All reports can be processed in batch (APPTUNE AND SQL Performance only).

batch reports
Reports designed in a format suitable for printing. These reports can also be displayed online (APPTUNE AND SQL Performance only).

data class
A collection of DB2 or BMC trace records (IFCIDs) that can be specified in an output group. Only the data classes specified will be collected and stored in the LOGSET log files for that output group.

Data Collector
The component that coordinates requests for data from all product and solution users and retrieves data from DB2.

DB2 Component Services (DBC)
DBC provides a persistent z/OS subsystem address space into which BMC products can dynamically initialize their own product services.

DB2 Product Configuration
The DB2 Product Configuration technology separates product (or solution) installation from configuration. Through its online interface, DB2 Product Configuration simplifies configuration and deployment by setting default option values for you.

DOMBSWIT
The utility that invokes the Data Collector SWITCH command from a batch job.

DOMEXIT1
A user exit that sets or changes the subsystem ID for security processing.

DOMEXIT2
A user exit that overrides selected user security attributes specified in the SECURITY data set.

DOMEXIT4
A user exit that validates a user’s authority to invoke a DB2 function.

DOMEXIT6
A user exit that assigns the user session ID and allows group session IDs to be used.
DOMPLEX option set
A collection of attributes that define one or more Data Collectors and their components (for example, the DB2s that can be monitored and the LOGSET log files that are used).

exception processing
An APPTUNE feature that allows you to collect SQL text only for SQL calls that exceed thresholds you set for elapsed and/or CPU times.

filter
A set of tailored options for the collection of data based on specific programs, plans, DB2 subsystems, and user IDs (APPTUNE and SQL Performance only).

IFCID
Instrumentation Facility Component identifier. The identifier assigned to a traceable DB2 event and to the associated trace record produced by DB2. This term is also used for records created by the System and SQL Performance products. IFCIDs generated by DB2 are preceded by “DB2” and records generated by the products are preceded by “BMC.”

LOGSET
A LOGSET is a group of z/OS linear data sets (or log files) in which the Next Generation Logger (NGL) stores data records. Each instance of NGL can support multiple LOGSETs.

MainView for DB2
A BMC Software product used to monitor DB2 activity in real time and historically.

MainView for DB2 – Data Collector (DC)
A component of the MainView for DB2 product that allows MainView users to share some functions of the System and SQL Performance products Data Collector.

Master Profile
A User Profile from which profile values can be extracted and assigned to other User Profiles.
Next Generation Logger (NGL)
NGL is a logging facility that logs and retrieves data based on application-defined keys and a
time span. NGL runs as a service within the DB2 Component Services (DBC) subsystem and
relies on the Runtime Component System (RTCS) for registry services.

OPERTUNE for DB2
A BMC Software product used to dynamically modify DB2 installation parameters. Pool
Advisor and System Performance have an interface to OPERTUNE that allows users to issue
commands to OPERTUNE either via the OPERTUNE Command Interface panel or as a result of
an advisor request.

Pool Advisor for DB2
A BMC Software product used to monitor and manage DB2 storage resources.

product administrator
An individual designated to control internal security and determine whether users should be
restricted from performing tasks such as issuing MVS or DB2 commands.

Report Manager
The System and SQL Performance products component that provides the user interface—the
visible portion of the product. Through the Report Manager, users request that data be collected
and measurements be taken. After the Data Collector gathers the data, the Report Manager sorts
and formats the data into reports.

Runtime Component System (RTCS)
RTCS runs as a started task and provides programming services to various BMC mainframe products.
RTCS is designed for continuous operation and seldom, if ever, needs to be stopped.

Sampling
A method used to reduce overhead by collecting data for one four-second period out of each 16
seconds of elapsed time, providing a representative sample of data with greatly-reduced
overhead (APPTUNE and SQL Performance only).

SQL
Structured Query Language. A language that can be used within programs and interactively to
request information from a DB2 subsystem.
SQL Explorer for DB2
The SQL Explorer for DB2 product is an SQL analysis tool that enables you to solve performance problems that result from inefficient SQL statements.

SQL Performance for DB2
A BMC Software solution that combines the features and functions of APPTUNE and SQL Explorer with additional index capabilities.

SQL statistics collection interval
The interval (in minutes) or multiple intervals (in one-hour increments) at which data is written to the LOGSET log files (APPTUNE for DB2 and SQL Performance for DB2 only).

SWITCH command
A Data Collector command that generates an archive from the currently active log file for the specified output group.

System and SQL Performance products for DB2
An integrated family of products that share common DB2 data collection facilities and a common interface. The System and SQL Performance products comprise the following products and solutions:

- Pool Advisor
- APPTUNE
- System Performance for DB2
- SQL Explorer
- SQL Performance for DB2
- MainView for DB2 – Data Collector

System Performance for DB2
A BMC Software solution that combines the features and functions of MainView for DB2, Pool Advisor, and OPERTUNE for DB2 with additional reporting capabilities.

U

User Profile
A collection of attributes that define a user’s access to product functions and reports.

Z

ZOOM command
The process of moving from summary data on one report to detailed information about the same data on another report.
The following codes identify the products associated with product-specific index entries:

- AFD SQL Performance
- ASQ APPTUNE
- PAP System and SQL Performance products
- PMD Pool Advisor
- PSS SQL Explorer
- SPD System Performance
- BDS MainView for DB2 – Data Collector

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