

# **System and SQL Performance for DB2<sup>®</sup> Administrator Guide**

## **Supporting**

**Application Performance for DB2 V2.1**

**System Performance for DB2 V2.1**

**ACTIVITY MONITOR for DB2 V4.1**

**APPTUNE for DB2 V4.1**

**MAINVIEW<sup>®</sup> for DB2 – Data Collector V4.1**

**Pool Advisor for DB2 V2.3**

**SQL Explorer for DB2 V4.1**

November 10, 2003



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APPTUNE technology holds U.S. Patent Number 5860069.

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## Contacting BMC Software

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

### United States and Canada

**Address** BMC Software, Inc.  
2101 CityWest Blvd.  
Houston TX 77042-2827

**Telephone** 713 918 8800 or  
800 841 2031

**Fax** 713 918 8000

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**Telephone** (01) 713 918 8800

**Fax** (01) 713 918 8000

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## Customer Support

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

### Support Web Site

You can obtain technical support from BMC Software 24 hours a day, 7 days a week at <http://www.bmc.com/support.html>. From this Web site, you can

- read overviews about support services and programs that BMC Software offers
- find the most current information about BMC Software products
- search a database for problems similar to yours and possible solutions
- order or download product documentation
- report a problem or ask a question
- subscribe to receive e-mail notices when new product versions are released
- find worldwide BMC Software 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. Outside the United States and Canada, please contact your local support center for assistance. To find telephone and e-mail contact information for the BMC Software support center that services your location, refer to the Contact Customer Support section of the Support page on the BMC Software Web site at [www.bmc.com/support.html](http://www.bmc.com/support.html).

### Before Contacting BMC Software

Before you contact BMC Software, have the following information available so that Customer Support can begin working on your problem immediately:

- What was the sequence of events leading to the problem?
- Have you had the same problem before? How often?
- Which messages were issued to the terminal?
- What version and maintenance levels are you using of the following:
  - SmartDBA System Performance for DB2
  - Application Performance for DB2
  - ACTIVITY MONITOR for DB2
  - APPTUNE for DB2
  - Pool Advisor for DB2
  - SQL Explorer for DB2
  - MAINVIEW for DB2
  - DB2
  - MVS, OS/390, z/OS
  - DFP/DFSMS
  - CICS
  - a security package
- Make a copy of the system log containing messages, registers, module names, etc. at the time of the problem.
- Save the batch job output from any job that fails.
- Save the dump if there is one.
- Make a copy of the ZAP Maintenance panel (DOMEZAPT), which lists any SUPERZAPs applied.

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# About This Book

This book contains detailed information about the administrative functions for the System and SQL Performance products. The System and SQL Performance products consist of the following products and solutions:

- Application Performance for DB2 solution

The Application Performance solution includes the APPTUNE and SQL Explorer function in addition to an extensive index function that is exclusive to the solution. If you are using the Application Performance solution, all information in this book that applies to APPTUNE and SQL Explorer also applies to Application Performance.

- SmartDBA System Performance for DB2 solution

The SmartDBA 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.

- ACTIVITY MONITOR for DB2 (AM)

- APPTUNE for DB2

- MAINVIEW for DB2 – Data Collector (DC)

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

This book is intended for use by the administrator of the System and SQL Performance products.

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# How This Book Is Organized

This book is organized as follows. In addition, a glossary of terms and an index are included at the end of the book.

Chapter/Appendix	Description
Chapter 1, "Administration Overview"	introduces the administrative functions associated with the System and SQL Performance products
Chapter 2, "User Profiles"	describes the User Profiles that are used to limit the use of resources and to grant and restrict access to Data Collectors and reports, to various product features, and to DB2 subsystems
Chapter 3, "DOMPLEX Profiles"	describes the DOMPLEX Profiles that are used to define one or more Data Collector subsystems and the DB2s to be monitored
Chapter 4, "VTAM Router Profiles"	describes the VTAM Router Profiles used to access ACTIVITY MONITOR through VTAM without the use of TSO and ISPF
Chapter 5, "Global Options and Installation Data Sets"	describes the System and SQL Performance products global options and the data sets created at installation
Chapter 6, "Diagnostic and Maintenance Procedures"	contains instructions to assist you to apply corrective maintenance and to run diagnostic procedures when you encounter a problem with one of the System and SQL Performance products
Chapter 7, "Collecting and Filtering SQL Data for Reporting"	describes the options for the collection of data in APPTUNE and helps you to use APPTUNE filter and summarization options to produce the data you want to examine in reports
Appendix A, "Using APPTUNE with ERP Applications"	provides some guidelines for filtering and reducing APPTUNE data by the SQL text for dynamic SQL
Appendix B, "Output Group Considerations"	provides guidelines for the appropriate sizing of APPTUNE output group data spaces and the appropriate data classes to combine in your trace data sets
Appendix C, "Batch Utilities"	describes the batch utilities used to copy trace data sets to a sequential file in SMF format, and to invoke the SWITCH and ARCHLOG commands from a batch job

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## Related Documentation

BMC Software products are supported by several types of documentation:

- online and printed books
- online Help
- release notes and other notices

In addition to this book and the online Help, you can find useful information in the publications listed in the following table. As “Printed and Online Books” on page xviii explains, these publications are available on request from BMC Software.

Document	Description
Release Notes for each product and solution	provides information about the current release, such as what is new or changed, and information about resolved problems
<i>OS/390 and Z/OS Installer Guide</i>	provides information about using the BMC Software OS/390 and z/OS Installer to download product files, and to generate and submit the JCL
<i>System and SQL Performance for DB2 Customization Guide</i>	provides information about the following subjects: <ul style="list-style-type: none"><li>• using the Installation Assistant to customize the System and SQL Performance products</li><li>• performing post-installation tasks that ready the System and SQL Performance products for use</li></ul>
<i>ACTIVITY MONITOR General Information</i> <i>APPTUNE General Information</i> <i>Pool Advisor General Information</i>	describes the features and benefits of the product
<i>Application Performance User Guide</i> <i>SmartDBA System Performance User Guide</i> <i>ACTIVITY MONITOR Reference Manual</i> <i>APPTUNE User Guide</i> <i>Pool Advisor User Guide</i> <i>SQL Explorer User Guide</i>	introduces you to the functions and operational characteristics of each product or solution

Documentation for SQL Explorer messages is located in the following places:

- Client messages are in the *SQL Explorer User Guide*.
- Rules messages are available
  - online by executing the TSO BMCMSG command
  - by selecting option 8 on the SQL Explorer main menu
  - in the *hlq.MSGS* data set

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The other System and SQL Performance products messages are documented in online help (Press F1 when a message is displayed.). You can also view the documentation for messages by browsing the MSGLIST member of the CNTL data set. Both the online help and the MSGLIST member provide an explanation for each message and suggest corrective actions. The MSGLIST member can also be printed if you prefer hardcopy documentation.

## Printed and Online Books

Printed books are provided with your product order. To request additional books, go to the BMC Software support page on the World Wide Web at [www.bmc.com/support.html](http://www.bmc.com/support.html).

Online books are formatted as Portable Document Format (PDF) files. You can view them, print them, or copy them to your computer by using Acrobat Reader 3.0 or later. You can access online books from the documentation compact disc (CD) that accompanies your product or from the World Wide Web.

Some books are also available in HTML format. You can view these books by using your Internet browser.

To access any online book that BMC Software offers, visit the support page of the BMC Software Web site at [www.bmc.com/support.html](http://www.bmc.com/support.html).

## Logging On to the Support Page

Click **Support** on the home page of the BMC Software Web site. Some Customer Support topics require that you be a registered user or have a temporary user name and password. Other topics can be browsed freely. Registration is not required to browse product documentation.

If you are a registered user, you will be prompted for your user name and password when you select a topic that requires them.

If you are not a registered user and you want to register, click on **register now** and follow the registration instructions. To request a temporary user name and a password, contact your BMC Software sales representative.

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## Online Help

The System and SQL Performance products use two help systems. ACTIVITY MONITOR, APPTUNE, Pool Advisor, and MAINVIEW for DB2 – Data Collector use one help system and SQL EXPLORER uses another. Keep the following guidelines in mind:

- When you are using EXPLAIN in ACTIVITY MONITOR or APPTUNE, you will be using the SQL Explorer help system.
- When you are using panels that are common to all products, you will be using the System and SQL Performance products help system (Administration panels, for example).

During a product session, you can access help by pressing **F1** from any product panel or field. See the Reference Manual or User Guide for any product or solution for complete instructions for using online help.

## Release Notes and Other Notices

Printed release notes accompany each BMC Software product and solution. Release notes provide current information such as

- new features included in the current release
- maintenance applied to resolve problems
- updates to the installation instructions
- last-minute product information

In addition, BMC Software sometimes provides updated product information between releases (in the form of a flash or a technical bulletin, for example). The latest versions of the release notes and other notices are available on the Web at <http://www.bmc.com/support.html>.

## Other Publications

Other publications that might be of interest include

- *ISPF Dialog Developer's Guide and Reference* (SC28-1273)
- *DB2 UDB for OS/390 and z/OS Administration Guide* (SC26-9931)
- *DB2 for OS/390 Administration Guide* (SC26-8957)
- *OS/390 MVS Routing and Descriptor Codes* (GC28-1778)
- *OS/390 MVS Programming: Sysplex Services Reference* (GC28-1772)

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# Conventions

This section provides examples of the conventions used in this book and explains how to read panel-flow diagrams.

## General Conventions

This book uses the following types of special text:

**Note:** Notes contain important information that you should consider.

**Warning!** Warnings alert you to situations that could cause problems, such as loss of data, if you do not follow instructions carefully.

**Tip:** Tips contain useful information that may improve product performance or that may make procedures easier to follow.

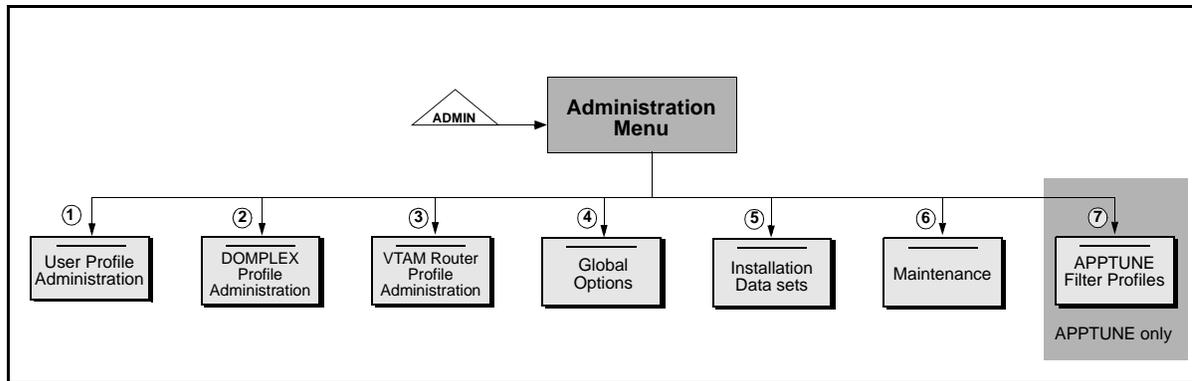
The following additional conventions are used in this book:

- The terms *ACTIVITY MONITOR* and *AM* are used interchangeably.
- The terms *Data Collector subsystem*, *DC subsystem*, and *Data Collector* are synonymous.
- The terms *SmartDBA System Performance*, and *System Performance* are synonymous.
- Bold text is used in examples to call attention to specific portions of panels. This highlighting does not reflect actual highlighting of panels online.
- Shading of text is used to highlight text that is specific to one or more products, but not to all products.

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## Panel-Flow Diagrams

Throughout this book, descriptions of product functions are accompanied by navigation diagrams similar to that shown below. These diagrams outline all panels that are associated with the function being described.



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.

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. A shaded background surrounding one or more panels indicates product-specific panels.

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# Summary of Changes

This section summarizes changes to the administration of the System and SQL Performance products for DB2. The summaries of changes for all previous releases of the products are available in online Help.

To view a summary of changes online, follow these instructions:

- Step 1** Select **Summary of Changes** from the main menu displayed when you begin your Pool Advisor session. The current Summary of Changes is displayed.
- Step 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 ACTIVITY MONITOR, APPTUNE, and Application Performance. SQL Explorer users can access the Summary of Changes from the panels it 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.

The following System and SQL Performance products are supported by this book:

- Application Performance for DB2 solution V2.1.00
- SmartDBA System Performance for DB2 solution V2.1.00
- ACTIVITY MONITOR for DB2 V4.1.00
- APPTUNE for DB2 V4.1.00
- MAINVIEW for DB2 – Data Collector V4.1.00
- Pool Advisor for DB2 V2.3.00
- SQL Explorer for DB2 V4.1.00

The System and SQL Performance products support DB2 6.1 and 7.1. The enhancements that are described in this document have been tested in these environments. Hardware or software platforms that are supported by these releases of DB2 are also supported by the System and SQL Performance products.

#### **Enhanced Sample Data Collection Option (APPTUNE and Application Performance only)**

The Sample Data collection option reduces the volume of data that is collected if overhead is an issue. Two improvements have been made to this option:

- The amount of CPU pulsing during the time that it is collecting data has been further minimized by implementing much shorter ON and OFF time samples:

Version 4.0.00: 4 seconds ON and 12 seconds OFF

Version 4.1.00: 0.000064 seconds ON and 0.000192 seconds OFF

- The new EXTRAPOLATION parameter allows the reported data to provide an approximation of what would have been collected had sampling been turned off. This functionality allows the reported data to look more normal so if there is a problem it will be present at the top of the reports which indicates a tuning opportunity.

See Chapter 7, “Collecting and Filtering SQL Data for Reporting,” for a complete explanation.

---

## Enhanced Dynamic SQL Text Summarization (APPTUNE and Application Performance only)

SQL text summarization is a process that collects summarized data relative to a unique piece of dynamic SQL test data. You can determine the total and average cost of repetitive dynamic SQL statements.

APPTUNE version 4.1.00 introduces a new level of granularity to dynamic SQL text summarization with the following three options:

- No dynamic SQL text summarization aggregates performance data for each call type (DESCRIBE, PREPARE, OPEN, FETCH, and CLOSE) for each unique occurrence of the reduction keys for that SQL call.
- Non-granular dynamic SQL text summarization
  - aggregates OPEN, FETCH, and CLOSE together into a CURSOR for each unique piece of dynamic SQL text
  - provides an improvement over previous versions in which only the OPEN and all FETCHES were grouped together into a CURSOR
  - gives the user the opportunity to view the entire amount of performance data relative to a unique piece of dynamic SQL text data
  - allows the user to identify the SQL statement that is using the most resources
- Granular dynamic SQL text summarization
  - reports DESCRIBE, PREPARE, OPEN, FETCH, and CLOSE separately for a unique piece of dynamic SQL text data
  - provides an improvement over previous versions as this option did not exist in previous versions
  - allows the user to identify the SQL call type that is using the most resources
  - provides a scenario where the user can first run the non-granular dynamic SQL text summarization option to identify the most expensive SQL statement and then subsequently run the granular dynamic SQL text summarization option to identify the most expensive SQL call type of the most expensive SQL statement

Additional information can be found in the following chapters and appendix:

- Chapter 3, “DOMPLEX Profiles”
- Chapter 7, “Collecting and Filtering SQL Data for Reporting”
- Appendix A, “Using APPTUNE with ERP Applications”

---

### **Enhanced Trace Data Set Granularity (APPTUNE and Application Performance only)**

A new output group data class (APERERROR) has been added to allow an even more customizable data collection environment. Prior versions of APPTUNE had APERERROR located in the APSTMT output group data class, which made it difficult (at times) to size the output group data class properly because the mix of records varied in size and quantity. The new output group data class was added to allow the division of these types of data into separate trace data sets, making it easier to size the trace data sets properly. The sizing algorithm will need to include only the typical number of SQL error statements that are anticipated multiplied by the average length of the APERERROR record.

### **New Data Classes (Application Performance only)**

Two new data classes have been added to Application Performance for the storage of BIND events (APBIND and APINDEX).

---

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# Chapter 1 Administration Overview

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

Accessing the Administration Function . . . . .	1-2
Administration Menu . . . . .	1-3
Navigation. . . . .	1-5

# 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 1-1 is an example of the menu that is displayed when all System and SQL Performance products and solutions are installed.

**Figure 1-1 System and SQL Performance for DB2 Main Menu (DOMESELT)**

```

DOMESELTP/P           System and SQL Performance for DB2           09:16:14
Command =====> _____

Current Data Collector :           Status :

  Select one of the following options.  Then press Enter.

_ I. Application Perf      - DB2 application, SQL and index analysis
 D. System Perf           - DB2 subsystem and storage pool analysis
 A. ACTIVITY MONITOR      - DB2 subsystem performance monitor

 1. DOMPLEXes             - Select/change DOMPLEX connection
 2. Session status        - View current session resource usage
 3. User Options           - View/modify user options
 4. Log Operations        - View/print logged screens and reports
 5. Administration       - Manage product and user profiles

 H. Help                  Y. Summary of Changes
 X. Exit

F1=Help   F2=Split   F3=End   F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up     F8=Down    F9=Swap  F10=Left   F11=Right  F12=Cancel
    
```

Main menus contain the Administration option only if you have been granted *Administration authority* in your User Profile.

# Administration Menu

Figure 1-2 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.

**Figure 1-2 Administration Menu (DOMEADM1)**

```

DOMEADM1/P                               Administration                               15:33:14
Command =====> _____

Select one of the following options.  Then press Enter.

_  1. User Profiles           - View/modify user profiles
   2. DOMPLEX Profiles       - View/modify DOMPLEX profiles
   3. VTAM Router Profiles   - View/modify VTAM Router application profiles
   4. Global Options         - View/modify global product options
   5. Installation Data Sets - View installation defined data set names
   6. Maintenance           - View maintenance applied since install
   7. Filter Profiles        - View/modify APPTUNE/App Perf filter profiles

F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap     F10=Left   F11=Right   F12=Cancel

```

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 and reports, 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 Profiles**

DOMPLEX Profiles define one or more Data Collector subsystems, the DB2s they will monitor, and the trace data sets that will be used to store collected records. See Chapter 3, “DOMPLEX Profiles,” for more information.

**3. VTAM Router Profiles (ACTIVITY MONITOR only)**

VTAM Router Profiles define the VTAM Routers that are used to access ACTIVITY MONITOR through VTAM without the use of TSO and ISPF. See Chapter 4, “VTAM Router Profiles,” for more information.

**4. Global Options**

Use this option to view or change the global options that are set during the installation process when the DOM\$OPTS macro is assembled and link edited. See Chapter 5, “Global Options and Installation Data Sets,” for more information.

**5. Installation Data Sets**

Use this option to view the names of the data sets that are created at installation. See Chapter 5, “Global Options and Installation Data Sets,” for more information.

**6. Maintenance**

Use this option to see the current product level and release date, to see information about zaps that have been applied, and to learn about diagnostic procedures that can help in problem diagnosis. See Chapter 6, “Diagnostic and Maintenance Procedures,” for more information.

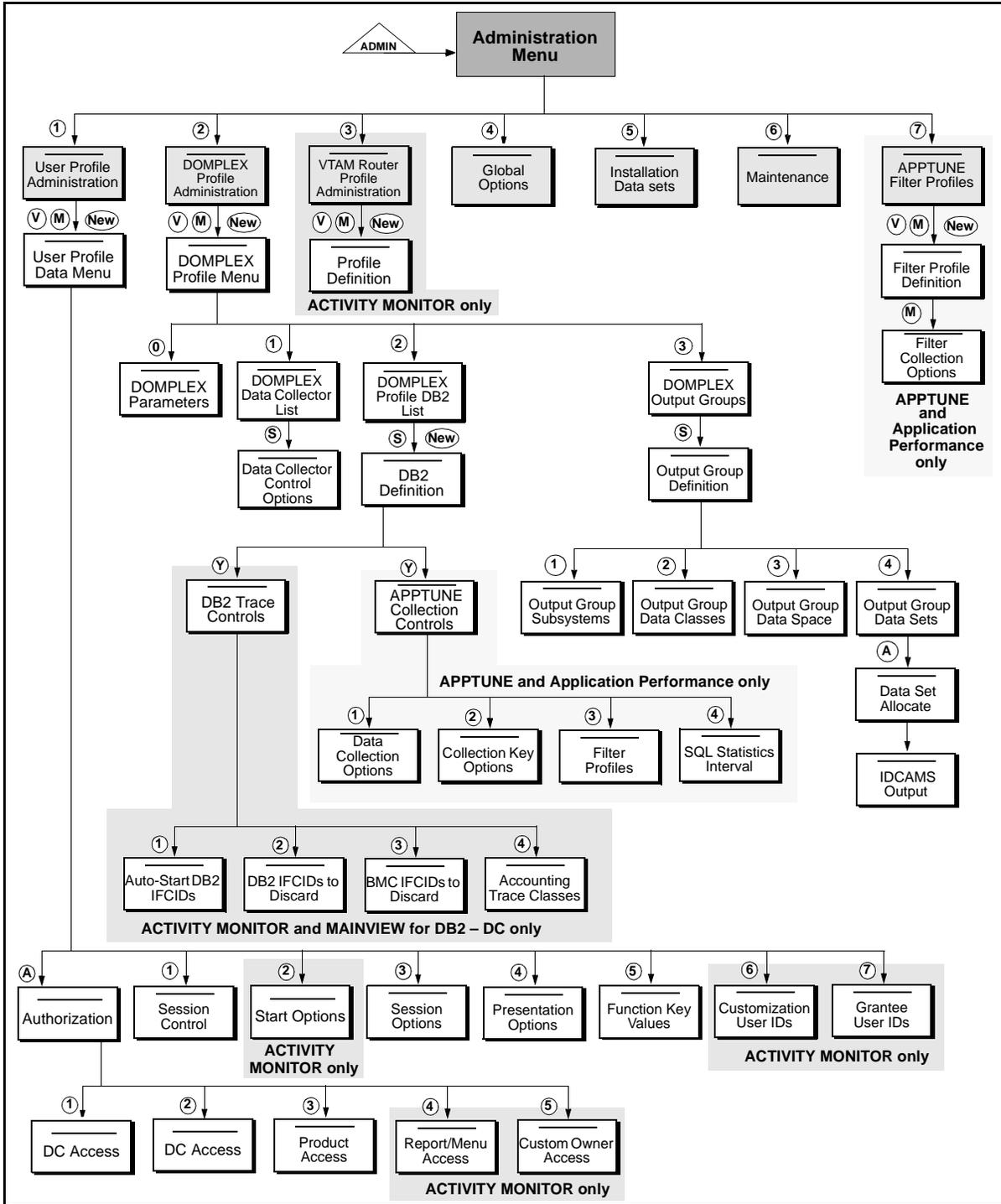
**7. Filter Profiles (APPTUNE and Application Performance)**

Filter profiles specify collection options that will apply to a specific combination of program, plan, user ID, correlation ID, and DB2. You can select one filter profile for use with each Data Collector/DB2 combination in a DOMPLEX Profile. See Chapter 7, “Collecting and Filtering SQL Data for Reporting,” for more information.

# Navigation

Figure 1-3 illustrates the flow of administration panels.

Figure 1-3 Administration Navigation





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## 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, reports and products, to various product features, and to DB2 subsystems. The following topics are included:

Introduction . . . . .	2-2
Automatic Access . . . . .	2-2
Master Profiles . . . . .	2-3
Navigation . . . . .	2-4
User Profile Administration Panel . . . . .	2-5
Authorizations (Option A) . . . . .	2-8
DC Access . . . . .	2-9
DB2 Access . . . . .	2-12
Product Access . . . . .	2-15
Report/Menu Access (ACTIVITY MONITOR only) . . . . .	2-16
Custom Owner Access (ACTIVITY MONITOR only) . . . . .	2-18
Session Control (Option 1) . . . . .	2-21
Start Options (Option 2) . . . . .	2-23
Session Options (Option 3) . . . . .	2-24
Presentation Options (Option 4) . . . . .	2-25
Function Keys (Option 5) . . . . .	2-26
Customization User IDs (Option 6) . . . . .	2-28
Grantee User IDs (Option 7) . . . . .	2-30

## Introduction

User Profiles are used to limit the use of resources and to grant and restrict access to Data Collectors, reports and products, to various product features, and to DB2 subsystems. In addition, they are 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. It 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 product that is 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 for this user (a record matching the user ID). If no security record exists, the 9DEFAULT security record is used to grant access to the product, to its reports and menus, 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, it looks in the PROFILE data set for a user record for that user ID. If no user record exists, one is created using 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.*

If you intend to access ACTIVITY MONITOR by using the VTAM Router, you also need to create a VTAM Router Profile before deleting the 9DEFAULT records.

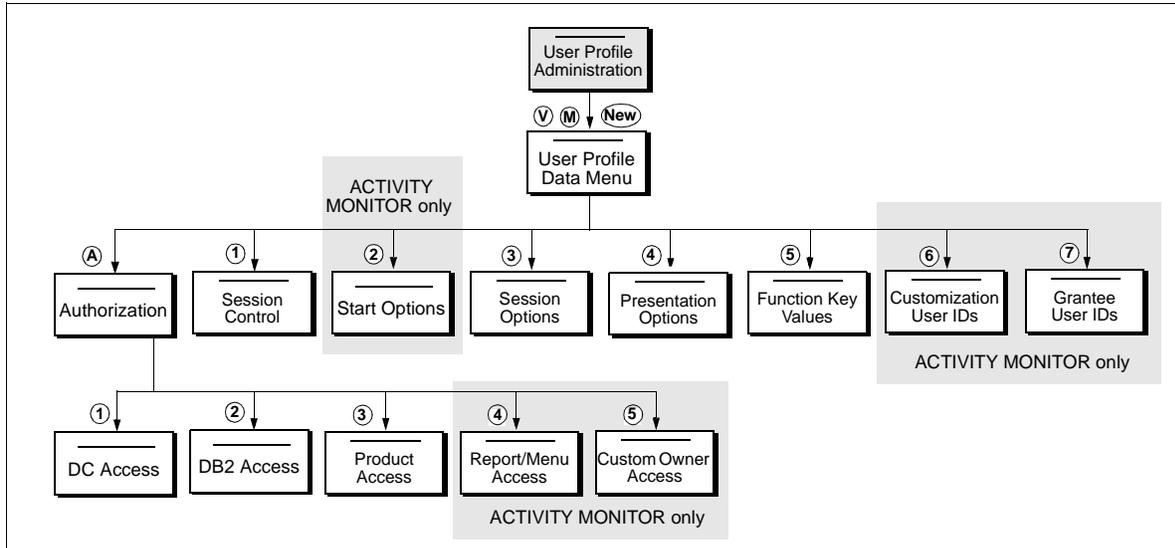
## Master Profiles

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. Any profile can be used as a Master Profile, multiple profiles can be used as Master Profiles, and any number of User Profiles can reference the same Master Profile. See “Session Control (Option 1)” on page 2-21 for more information about Master Profiles.

# Navigation

Figure 2-1 illustrates the flow of User Profile Administration panels.

**Figure 2-1 User Profile Administration Navigation**



# User Profile Administration Panel

The User Profile Administration panel (Figure 2-2) provides access to existing User Profiles and is the starting point for creating new User Profiles.

**Figure 2-2 User Profile Administration Panel (DOMEPRFU)**

```

DOMEPRFU/P                               User Profile Administration                LINE 11 OF 184
Command =====> _____ Scroll =====> CSR_

To add a profile, type the name in the "New profile" field, and/or type one
or more action codes. Then press Enter.
  V -View      M -Modify      D -Delete      C -Copy

New profile _____

Act Name      Description                               Last change date      Changed by
-----
- ACCTP      ACCOUNTS PAYABLE                            1996-02-27 09:20      9DEFAULT
- ACCTR      ACCOUNTS RECEIVABLE                        1995-05-29 10:24      9DEFAULT
- ADMIN      ADMINISTRATOR PROFILE                      1995-07-21 06:07      9DEFAULT
- HML        PROGRAMMER PROFILE                        1994-04-18 10:06      9DEFAULT
- MASTER     MASTER PROFILE                            1996-04-30 15:40      RDHLXB
- SXS        DBA PROFILE                               1996-03-28 11:08      RDHLXB
- SYSPROG    SYSTEM PROGRAMMER PROFILE                 1996-04-30 15:42      RDHLXB2
- USER01    PROFILE FOR USER01                       1996-03-29 15:01      RDHLXB
- USER02    PROFILE FOR USER02                       1996-03-29 15:00      RDHLXB2
- USER03    PROFILE FOR USER03                       1993-09-14 02:30      9DEFAULT
F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left      F11=Right     F12=Cancel

```

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 2-3) is displayed.

Figure 2-3 User Profile Data Menu (DOMEUPR0)

```

DOMEUPR0/P                               User Profile Data Menu                               19:41:06
Command =====> _____

User name : RDHDXJ3

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. Start Options          - Parameters that affect session startup

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
  6. Customization User IDs - Search order and default user ID for customized
                             objects
  7. Grantee User IDs       - Users allowed to modify items owned by RDHDXJ3
F1=Help      F2=Split      F3=End          F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap        F10=Left      F11=Right     F12=Cancel

```

The name of the User Profile and its description are displayed at the top of the panel (highlighted in Figure 2-3). If it is a new profile, the description is **DEFAULT PROFILE** until you specify a new description.

The following options are contained on this menu:

A. **Authorization** is used to set values for the following access. Only an administrator can set these values:

- Data Collector access
- DB2 access
- Product access
- Report/menu access (ACTIVITY MONITOR only)
- Customization owner access (ACTIVITY MONITOR only)

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

2. **Start Options** (ACTIVITY MONITOR only) is used to set the parameters that affect the user's session at startup time (for example, the initial panel displayed).

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

3. **Session Options** is used to set characteristics for the user's session (for example, placement of the **Command** line and display of the panel ID).
4. **Presentation Options** is used to set 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** is used to set function key defaults.
6. **Customization User IDs** (ACTIVITY MONITOR only) is used to assign a default owner for customized objects and to specify the search order for retrieving customized objects for this user (qualifier lists, for example).
7. **Grantee User IDs** (ACTIVITY MONITOR only) is used to specify the user IDs that can create, modify, or delete customized objects while using this user ID as the owner.

Users of all products and solutions except MAINVIEW for DB2 can change the values in Session Options, Presentation Options, Function Keys, Customization User IDs, and Grantee User IDs at any time by using User Options. The administrator cannot prevent users from changing these values. MAINVIEW for DB2 users do not have access to User Options.

**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.

## Authorizations (Option A)

Use the User Profile Authorization Menu (Figure 2-4) to access the panels that are used to set the parameters that control a user's access to products and functions.

**Figure 2-4 User Profile Authorization Menu (DOMEUPRZ)**

```

DOMEUPRZ/P                               User Profile Authorization Menu                               10:58:58
Command ====> _____

User name   : RDHDXJ4
Description : DEFAULT PROFILE

Select one of the following options.  Then press Enter.

The following values can be set only by an administrator.

_  1. DC Access           - Data Collectors the user is authorized to use.
   2. DB2 Access         - DB2 subsystems the user is authorized to monitor.
   3. Product Access     - Products the user is authorized to use.
   4. Report/Menu Access - Reports and menus the user is authorized to use.
   5. Custom Owner Access - User IDs that can be used to create, modify, and
                                delete customized items.

F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6>Showcmds
F7=Up        F8=Down     F9=Swap     F10=Left    F11=Right   F12=Cancel
    
```

The User Profile Authorization Menu contains the following options:

1. **DC Access** is used to specify the Data Collectors that the user is authorized to use and the types of commands that can be issued.
2. **DB2 Access** is used to specify the DB2 subsystems that the user is authorized to monitor.
3. **Product Access** is used to grant or restrict the user's access to individual products.
4. **Report/Menu Access** is used to specify the ACTIVITY MONITOR reports and menus that the user is authorized to use.
5. **Custom Owner Access** is used to specify the user IDs that the ACTIVITY MONITOR user can use to create, modify, or delete customized objects.

## DC Access

Use the User Profile DC Access panel (Figure 2-5) to specify Data Collectors that the user can access and the types of command authority that will be associated with each.

**Figure 2-5 User Profile DC Access Panel (DOMEUPR3)**

```

DOMEUPR3/P                               User Profile DC Access                               LINE 1 OF 1
Command =====> _____ Scroll ==> CSR_

User name : RDHDXJ3

To add an entry, type the Data Collector SSID in the following field, and/or
type one or more action codes. Then press Enter.
  D -Delete

New DC SSID _____ (wildcards are allowed)

Act   DC SSID   DC commands   MVS commands   OPERTUNE commands   XBM commands
-----
_     *         (Y=Yes,N=No)  (Y=Yes,N=No)    (Y=Yes,N=No)       (Y=Yes,N=No)
                                     Y              Y                Y                  Y

F1=Help   F2=Split   F3=End     F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up     F8=Down    F9=Swap    F10=Left   F11=Right   F12=Cancel
    
```

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. 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 **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, OPERTUNE, and/or EXTENDED BUFFER MANAGER (XBM) 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).

**Note:** Command authority for MVS, OPERTUNE, and XBM applies only to ACTIVITY MONITOR, APPTUNE, and Application Performance. Command authority for the Data Collector applies to these products and to MAINVIEW for DB2 – Data Collector.

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:

Act	DC SSID	DC commands (Y=Yes,N=No)	MVS commands (Y=Yes,N=No)	OPERTUNE commands (Y=Yes,N=No)	XBM commands (Y=Yes,N=No)
—	DC01	Y	N	N	N
—	DC02	Y	Y	N	N
—	DC*	N	N	N	N
—	*	Y	Y	Y	Y

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, OPERTUNE, or XBM 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, OPERTUNE, or XBM 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 DB2s) 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 2-6) to specify the DB2 subsystems that the user can access and to control authorization for other functions that are associated with those DB2s.

**Figure 2-6 User Profile DB2 Access Panel (DOMEUPR4)**

```

DOMEUPR4/P                               User Profile DB2 Access                               LINE 1 OF 1
Command =====> _____ Scroll ==> CSR_

User name : RDHDXJ3

Following are the DB2 subsystem IDs which the user is allowed to monitor.
To add an entry, type the DB2 subsystem ID in the following field, and/or
type one or more action codes. Then press Enter.
  D -Delete

New DB2 SSID _____ (wildcards are allowed)
Act   DB2   DB2 commands  PERF traces  Dynamic Exceptions
      SSID  (Y=Yes,N=No)  (Y=Yes,N=No)  (Y=Yes,N=No)
-----
-     *      Y           Y           Y
      All products  ACTIVITY MONITOR only  ACTIVITY MONITOR only

F1=Help   F2=Split   F3=End     F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up     F8=Down    F9=Swap    F10=Left    F11=Right   F12=Cancel
    
```

You can specify up to 32 DB2 subsystems. Type each subsystem ID (SSID) in the **New DB2 SSID** field, and press **Enter**. Or type an asterisk (\*) to specify all DB2s 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. You can change any or all of these values. These values cannot be changed by users who do not have administration authority.

**Note:** Authority for Performance traces and dynamic exceptions applies only to ACTIVITY MONITOR.

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, start performance traces, and use Dynamic Exceptions when monitoring the DB2 subsystem. When you manually add a DB2 SSID to the list, the default for all these parameters 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 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 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.

**Example**

Consider the following DB2 access list:

Act	DB2 SSID	DB2 commands (Y=Yes,N=No)	PERF traces (Y=Yes,N=No)	Dynamic Exceptions (Y=Yes,N=No)
—	DB2A	Y	N	N
—	DB2B	N	N	N
—	DB2*	Y	Y	N
—	*	Y	Y	Y

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, but cannot start traces or use Dynamic Exceptions.

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 can issue DB2 commands and start traces, but cannot use Dynamic Exceptions 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.

The DB2 Access panel is also used to delete DB2 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 DB2s) 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 Product Access panel to specify the products that the user can access. The name of the User Profile is displayed at the top of the panel.

**Figure 2-7 User Profile Authorized Products Panel (DOMEUPRB)**

```

DOMEUPRB/P                               User Profile Authorized Products                LINE 1 OF 4
Command ====> _____ Scroll ==> CSR_

User name:  RDHDXJ4

To change an entry, type over the Y or N Auth value.
Press Enter to verify and then F3 to save changes.

Product Name          Status          Auth
-----
ACTIVITY MONITOR      ENABLED         Y
APPTUNE               ENABLED         Y
Pool Advisor          DISABLED        Y
SQL Explorer          ENABLED         Y

F1=Help   F2=Split   F3=End    F4=Sort A  F5=Sort D  F6=Showcmds
F7=Up     F8=Down    F9=Swap   F10=Left   F11=Right  F12=Cancel
    
```

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.

The following options (Report/Menu Access and Custom Owner Access) apply to ACTIVITY MONITOR only. If you are not using ACTIVITY MONITOR, proceed to “Session Control (Option 1)” on page 2-21.

## Report/Menu Access (ACTIVITY MONITOR only)

Use the User Profile Report/Menu Access panel (Figure 2-8) to specify the menus and reports that the user can access. The name of the User Profile is displayed at the top of the panel.

**Figure 2-8 User Profile Report/Menu Access Panel (DOMEUPR5)**

```

DOMEUPR5/P           User Profile Report/Menu Access           LINE 1 OF 5
Command =====> _____ Scroll =====> PAGE

User name . . . . . : RDHDXJ2

Specify the menus and reports the user may or may not use in the fields below.
Type a new menu or report name or type an action code. Then press Enter.
  D =Delete

Include or exclude menus. . I                               (I=Include,E=Exclude)
Include or exclude reports I                               (I=Include,E=Exclude)
New menu name . . . . . _____ (Wildcards are allowed)
New report name . . . . . REPORT4_ (Wildcards are allowed)

      Act      Type      Name
      ---      -
      -      MENU      SQLMENU
      -      MENU      SQL*
      -      MENU      *
      -      REPORT     REPORT1
      -      REPORT     *

F1=Help   F2=Split   F3=End     F4=Sort A   F5=Sort D   F6>Showcmds
F7=Up     F8=Down    F9=Swap    F10=Left    F11=Right   F12=Cancel
    
```

The values that are initially displayed on this panel are the default values that are shipped with AM. You can change any or all of them. These values cannot be changed by users who do not have administration authority.

The Report/Menu Access panel is used to specify the AM reports and DB2 Performance Analysis menus that the user can access. You can specify up to 100 reports and/or menus. The user is allowed to activate (or execute in batch) only the reports in this list.

The include/exclude fields are used to indicate whether the reports and menus listed on this panel are included (**I**) in the access list for this User Profile or are excluded (**E**).

```

Include or exclude menus. . I
Include or exclude reports I
    
```

In the example in Figure 2-8, all reports and menus listed are *included* in the report and menu access list for this User Profile. All others are implicitly excluded—even those being shared by their owners.

The new menu/report fields are used to add new entries. Type the name of the report or menu in the appropriate field, and press **Enter**.

```

New menu name . . . . . _____
New report name . . . . . REPORT4_
    
```

In the example in Figure 2-8, a report named REPORT4 is being added to the report and menu access list for this User Profile.

The following wildcards can be used with report and menu specifications:

- \* Used alone, the asterisk matches all reports or menus. This is the default. Used at the end of a character string, the asterisk matches all report or menu names beginning with that character string. Any characters following an asterisk are ignored.

**Example**

Specifying **TIAC\*** in the **New report name** field matches all reports beginning with **TIAC** (for example, **TIACAUTH**, **TIACBUFF**, **TIACTHDS**).

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

**Example**

Specifying **SQL!MENU** in the **New menu name** field matches all menus with **SQL** in the first three character positions and **MENU** in the fifth to eighth character positions (for example, **SQL1MENU**, **SQL2MENU**, **SQL3MENU**).

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 Report/Menu Access panel are *ignored*. The reports and menus on the access list in the specified Master Profile are used instead.

The Report/Menu Access panel is also used to delete report and menu entries. Type **D** in the **Act** field, and press **Enter**.

## Custom Owner Access (ACTIVITY MONITOR only)

Customization is the ACTIVITY MONITOR tool used to create reports, report menus, and qualifier lists. To create reports and menus, users need report customization authority. This authority is granted by the AM administrator and is specified on the Session Control panel of the User Profile (see Figure 2-10 on page 2-21). Users with report customization authority can create reports that display only the data that is important to them, and they can create report menus that contain only the reports and menus that they use.

All users are authorized to create qualifier lists, even those without report customization authority. Qualifier lists are used in many places to specify multiple values for filtering data without the need to specify each value individually.

In addition, users who are granted SYSTEM customization authority can create reports, menus, and qualifier lists that can be shared by all ACTIVITY MONITOR users.

### Customization Owner

Each object that is created by using Customization has an owner. The reports and menus that are shipped with ACTIVITY MONITOR are owned by *BMCSftwr*. No qualifier lists are shipped with AM because the values that are needed for filtering data are specific to each site. *BMCSftwr*-owned objects cannot be modified or deleted, but you can make copies of them to modify.

The reports, menus, and qualifier lists that are created by someone using SYSTEM customization authority are owned by *SYSTEM*.

The reports, menus, and qualifier lists that are created by individuals are owned by the *user ID* that was used to create the object.

### User Profile Custom Owner Access Panel

The User Profile Custom Owner Access panel (Figure 2-9) grants customization authority to the user for any objects that are owned by the user IDs and owner names that are specified on this panel.

**Figure 2-9 User Profile Custom Owner Access Panel (DOMEUPRY)**

```

DOMEUPRY/P          User Profile Custom Owner Access          LINE 0 OF 0
Command =====> _____ Scroll ==> CSR_

User name : RDHDXJ3

Specify the user IDs and owner names that can be used as the owner of
customized items created, modified or deleted by this user.

Type a new user ID, owner name, or action code. Then press Enter.
  D -Delete

Include or exclude . . . . I          (I=Include,E=Exclude)
New user ID/owner name . . _____ (Wildcards are allowed)

          Act   User/Owner
          ---   -
          ---   -

F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down        F9=Swap     F10=Left      F11=Right     F12=Cancel
    
```

It could be useful for a subset of employees to share the same customized objects for use only within that group. In that case, you can “invent” an owner name and specify that owner name on the User Profile Custom Owner Access panel for each employee in the group. Then you (or the members of the group) can use that owner name to create the objects that will be shared.

**Example**

Each department in the organization has its own DBAs. The DBAs in the Payroll department want to create reports and menus for use by application developers in the department. The DBAs want the application developers to be able to modify the reports and menus, but they don’t want anyone else modifying them. The DBAs must take the following steps to achieve this result:

1. Create the reports and menus and use PAYROLL as the owner.
2. Add PAYROLL to the User Profile Custom User Access panel in the User Profile of each application developer.

**Note:** If **Share=Yes** was specified when the object was created, all users would be able to view the menu or report, but only the specified application developers would be able to modify it. If **Share=No** was specified, only the specified application developers would be able to view or modify the menu or report.

The following wildcards can be used with the user ID/owner name specifications:

- \* Used alone, the asterisk matches all user IDs and owner names. Used at the end of a character string, the asterisk matches all user IDs or owner names beginning with that character string. Any characters following an asterisk are ignored.

**Example**

Specifying **ACCT\*** in the **New user ID/owner name** field matches all owner names beginning with **ACCT** (for example, **ACCTPAY** and **ACCTREC**).

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

**Example**

Specifying **USER!A** in the **New user ID/owner name** field matches all user IDs with **USER** in the first four character positions and **A** in the sixth character position (for example, **USER1A**, **USER2A**, **USER3A**).

## Session Control (Option 1)

Use the Session Control panel (Figure 2-10) to view or set the parameters that control a user's access to product functions and to limit resource allocation.

**Note:** Report customization authority and SYSTEM customization authority apply only to ACTIVITY MONITOR.

**Figure 2-10** User Profile Session Control Panel (DOMEUPR1)

```

DOMEUPR1/P                               User Profile Session Control          21:55:50
Command =====> _____

User name : RDHDXJ

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)      : ALWAYS
Use Master Profile access lists . . . N      (Y=Yes,N=No)      NO_
Report customization authority . . . . Y      (Y=Yes,N=No)      : ALWAYS
SYSTEM customization authority . . . . Y      (Y=Yes,N=No)      : ALWAYS
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 IFCID count warning threshold _10000 (100-100000)   NO_
Maximum address space storage usage . ----- (1-128 Mb)       NO_
Maximum hyperspace storage usage . . . ----- (0-256 Mb)       YES
DASD workfile primary allocation . . . ----- (1-200 Cyls)   NO_
Maximum number of active reports . . . ____12 (1-32)         NO_
F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap     F10=Left    F11=Right   F12=Cancel

```

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:** Some values can be changed only by the administrator. These values are indicated by **ALWAYS** in the **LOCKED** column.

If you type one or more dashes (--) in a field instead of a value, the value for that field is retrieved from an optional Master Profile. To use values from a Master Profile, type the Master Profile name in the **Master Profile** field and type dashes (--) instead of values in all appropriate fields.

In the example in Figure 2-10, 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 9DEFAULT 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 are no 9DEFAULT records, the internal default values are used.

## Start Options (Option 2)

**Note:** Start Options applies only to ACTIVITY MONITOR.

Use the User Profile Start Options panel (Figure 2-11) to set the parameters that affect the user's session at startup.

**Figure 2-11 User Profile Start Options Panel (DOMEUPR2)**

```

DOMEUPR2/P                               User Profile Start Options                               16:32:18
Command ====> _____

User name . . . . . : RDHDXJ3

Type the following information to control session initialization.  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 Master Profile.

Initial screen displayed . . . . . MAIN      (MAIN,REPT,MENU,DYNX,AUTO)  NO_
Initial report name . . . . . PLXMON__      NO_
Initial report menu name . . . . . OPSPRIME  NO_

Initial Dynamic Exceptions panel  ____      (DB2s, List, Defs)      NO_
Initial Dynamic Exceptions owner  _____ DB2 ____ List _____ NO_

Auto-view refresh rate . . . . . ____0      (0,5-9999 seconds)      NO_
Auto-view report names . . . . . _____ NO_
                                     _____
                                     _____

F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left      F11=Right     F12=Cancel

```

The values initially displayed on this panel are the default values shipped with the products. You can change any or all of these values. In addition, you can specify if 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.

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 from which to retrieve these values (see “Session Control (Option 1)” on page 2-21). 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.

## Session Options (Option 3)

Use the User Profile Session Options panel (Figure 2-12) 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.

**Notes:** The **Verify all report activates** field applies only to ACTIVITY MONITOR.

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

**Figure 2-12 User Profile Session Options Panel (DOMEUPR6)**

```

DOMEUPR6/P                               User Profile Session Options                               07:52:40
Command =====> _____

User name : RDHDXJ4

Type the following information to set session options. Then Exit.
Type dashes (-) in fields to be set from the Master Profile.

Display confirmation panels . . . . . Y           (Y=Yes,N=No)
Input field underscoring . . . . . Y           (Y=Yes,N=No)
Input field pad character . . . . . _           (Blank, period, underscore)
Command delimiter . . . . . ;                 (Non alpha-numeric, non-pad)
Command line placement . . . . . TOP           (TOP,BOT)
Cursor placement . . . . . CUA                (CUA,CMD)
Function key display . . . . . PRI            (OFF,PRI,ALT)
PANELID display . . . . . ON_                (ON,OFF)
Non-ISPF environment screen format . . DATA   (DATA,MAX)
Default scroll amount . . . . . CSR_          (PAGE,HALF,CSR,GRP,1-9999)
TERSE display mode . . . . . OFF             (ON,OFF)
Recollect only on ZOOM command . . . . N      (Y=Yes,N=No)
Verify all report activates . . . . . N       (Y=Yes,N=No)
F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap    F10=Left   F11=Right   F12=Cancel

```

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.

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 (Option 1)” on page 2-21). 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 (Option 4)

Use the User Presentation Options panel (Figure 2-13) to set the parameters that control the presentation of data on the user's screen.

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

**Figure 2-13** User Presentation Options Panel (DOMEUPR8)

```

DOMEUPR8/P           User Profile Presentation Options           12:54:57
Command =====> _____

User name : RDHDXJ3

Type any of the following items to override the installation default
values specified in the Global Options.  Items left blank will use the
installation defaults.  Type dashes (-) in fields to be set from the
user's Master Profile.  Exit to save changes when done.

Language identifier . . . . . _      (E=English, J=Japanese)
Assume DBCS terminal display support . . . _      (Y=Yes, N=No)
Use upper case only (display and print). . . _      (Y=Yes, N=No)
Print in upper case only . . . . . _      (Y=Yes, N=No)
Date formatting style option . . . . . _      (U=USA, E=European, I=ISO)
Decimal formatting style option . . . . . _      (U=USA, E=European)

F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down      F9=Swap     F10=Left      F11=Right     F12=Cancel

```

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 (Option 1)” on page 2-21). 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.

## Function Keys (Option 5)

Use the User Profile Function Key Values panel (Figure 2-14) to set defaults for function keys.

**Figure 2-14 User Profile Function Key Values Panel (DOMEUPR7)**

```

DOMEUPR7/P                               User Profile Function Key Values                               11:57:18
Command ====> _____

User name : RDHDXJ3

Type desired function key settings below.  Then Exit.
Type dashes (-) in fields to be set from the Master Profile.
The Reset command can be used to reload the product defaults.

Primary Keys                               Alternate Keys
F1  Help                                   F13 Home
F2  Split                                  F14 Keys
F3  End                                    F15 End
F4  Sort A                                 F16 Terse
F5  Sort D                                 F17 Rfind
F6  Showcmds                              F18 Filter
F7  Up                                     F19 Up
F8  Down                                  F20 Down
F9  Swap                                  F21 Expand All
F10 Left                                  F22 Left
F11 Right                                 F23 Right
F12 Cancel                                F24 Retrieve
F1=Help    F2=Split    F3=End    F4=Sort A    F5=Sort D    F6=Showcmds
F7=Up      F8=Down     F9=Swap   F10=Left    F11=Right   F12=Cancel

```

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 from which to retrieve these values (see “Session Control (Option 1)” on page 2-21). 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 2-14 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 SET or SHOW command is the default value that is assigned to **F6** when the Report Layout panel, the Exception Commands panel, or the Exception Notify panel is displayed (ACTIVITY MONITOR only).
- The ZOOM command is the default value that is assigned to **F6** when a report is displayed (does not apply to SQL Explorer).
- The IEDIT command is the default value that is assigned to **F6** when a Command Interface panel or the Explain Interface panel is displayed (ACTIVITY MONITOR, APPTUNE, and Application Performance only).

These defaults cannot be overridden. If you need to change the default for **F6**, select a command you do not expect to need on a function key 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 reference manual or user guide for that product.

**Note:** The options described in the remainder of this chapter apply only to ACTIVITY MONITOR. If ACTIVITY MONITOR is not installed at your site, these options can be ignored.

## Customization User IDs (Option 6)

**Note:** This option applies only to ACTIVITY MONITOR.

Use the User Profile Customization Owner panel (Figure 2-15) to set a default owner to be used for creating customized objects and to specify the search order for the retrieval of customized objects.

**Figure 2-15 User Profile Customization Owner Panel (DOMEUPR9)**

```

DOMEUPR9/P          User Profile Customization Owner          LINE 1 OF 1
Command =====> _____ Scroll =====> CSR_

User name : RDHDXJ3

Default owner : RDHDXJ3_   Default owner of created customized items.

Specify the order to search for retrieval of customized items.
  D -Delete   I -Insert

          Act   Order   Owner
          ---   -
          -     1     _____

F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap     F10=Left    F11=Right   F12=Cancel
    
```

The default owner specified on this panel is the user ID that will be associated with any customized objects created or modified by this user. The value for **Default owner** is initially the same as the **User name**. You can change this value and specify a search order, but you cannot lock any of these values in the User Profile. The user can change these values at any time.

If the default owner specified on this panel is not the user's ID, you will need to grant authorization to this user for this owner name. The User Profile Custom Owner Access panel is used for this purpose. See "Custom Owner Access (ACTIVITY MONITOR only)" on page 2-18).

If you specify a default owner different from the user's ID, but make no other changes on this panel, the resulting search order will be as follows:

- user's ID
- default owner
- SYSTEM
- BMCSftwr

If you specify a search order on this panel, the resulting search order will be as follows:

- specified search order
- SYSTEM (if not included in the specified order)
- BMCSftwr (if not included in the specified order)

**Note:** If you specify other user IDs in the search order, ensure that this user is authorized to use objects owned by those other users.

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 from which to retrieve these values (see "Session Control (Option 1)" on page 2-21). 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.

## Grantee User IDs (Option 7)

**Note:** This option applies only to ACTIVITY MONITOR.

Use the Grantee User IDs panel (Figure 2-16) to grant permission to other user IDs, allowing those user IDs to

- create customized objects using this user ID as the owner
- modify or delete any objects owned by this user ID

**Figure 2-16 User Profile Grantee User IDs Panel (DOMEUPRA)**

```

DOMEUPRA/P                               User Profile Grantee User IDs                LINE 1 OF 3
Command =====> _____ Scroll =====> CSR_

User name : USERABC3

Specify the user IDs that can create, modify, or delete customized
items using USERABC3 as the owner.

Type a new user ID or type an action code. Then press Enter.
  D -Delete

Include or exclude user IDs  I                    (I=Include,E=Exclude)
New user ID . . . . . _____ (Wildcards are allowed)

                                     Act  User ID
                                     ---  -----
                                     -   USERABC
                                     -   USERABC2
                                     -   USERABC4

F1=Help      F2=Split      F3=End      F4=Sort A   F5=Sort D   F6>Showcmds
F7=Up        F8=Down       F9=Swap    F10=Left   F11=Right   F12=Cancel
    
```

You cannot lock any of the values on this panel 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 from which to retrieve these values (see “Session Control (Option 1)” on page 2-21). 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.

You can choose to specify only the user IDs that will be granted customization authority (**I=Include**) or you can specify only those user IDs that will be denied customization authority (**E=Exclude**), implicitly granting authority to all other users. In the example in Figure 2-16, the three user IDs listed will be allowed to customize items using USERABC3 as the owner, but no others.

The following wildcards can be used with the user ID specifications:

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

**Example**

Specifying **USER\*** in the **New user ID** field matches all user IDs beginning with **USER** (for example, **USER001** and **USERABC**).

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

**Example**

Specifying **USER!A** in the **New user ID** field matches all user IDs with **USER** in the first four character positions and **A** in the sixth character position (for example, **USER1A**, **USER2A**, **USER3A**).



---

## Chapter 3    **DOMPLEX Profiles**

This chapter describes the DOMPLEX Profiles that are used to define one or more Data Collector subsystems and the DB2s to be monitored. The following topics are included:

Introduction . . . . .	3-2
Navigation . . . . .	3-2
DOMPLEX Profile Administration Panel . . . . .	3-3
DOMPLEX Parameters (Option 0) . . . . .	3-5
DOMPLEX Data Collector List (Option 1) . . . . .	3-6
Data Collector Control Options . . . . .	3-7
DOMPLEX DB2 List (Option 2) . . . . .	3-8
DB2 Definition Panel . . . . .	3-9
Output Groups (Option 3) . . . . .	3-25
Output Group Definition Menu . . . . .	3-30
Subsystems . . . . .	3-31
Data Classes . . . . .	3-33
Data Space . . . . .	3-34
Trace Data Sets . . . . .	3-35

# Introduction

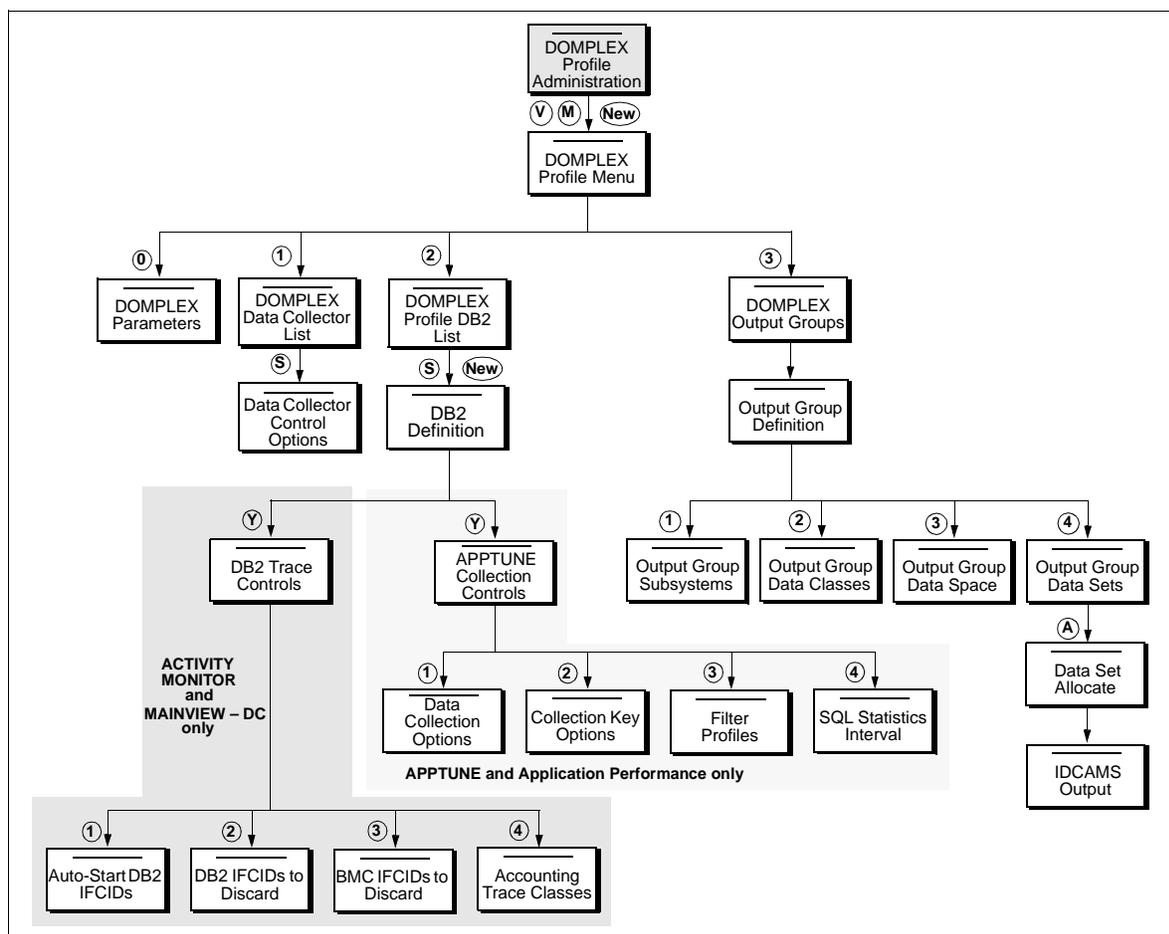
DOMPLEX Profiles are used to define one or more Data Collector subsystems and the DB2s to be monitored. Each Data Collector in a DOMPLEX must run on a separate MVS image and can monitor all of the DB2 subsystems on that same MVS image. You can define multiple DOMPLEXes, but each Data Collector can be defined to only one DOMPLEX.

The DOMPLEX Profile contains the parameters that affect product initialization, lists the DB2 subsystems to be monitored, and defines trace data sets.

## Navigation

Figure 3-1 illustrates the flow of DOMPLEX Profile panels.

**Figure 3-1 DOMPLEX Profile Administration Navigation**



# DOMPLEX Profile Administration Panel

Use the DOMPLEX Profile Administration panel (Figure 3-2) to gain access to existing DOMPLEX Profiles and as the starting point for creating new DOMPLEX Profiles.

**Figure 3-2** DOMPLEX Profile Administration Panel (DOMEPRFS)

```

DOMEPRFS/P                DOMPLEX Profile Administration                LINE 1 OF 12
Command =====> _____ Scroll ==> CSR_

To add a profile, type the name in the "New profile" field, and/or type one
or more action codes. Then press Enter.
  V -View      M -Modify      D -Delete      C -Copy

New profile  ____ (must be 4 characters)

Act Name      Description                Last change date      Changed by
-----
_  AML6        DIANNE'S SUBSYSTEM        1996-07-19 10:36     RDHLXB2
_  AMMB        MIKE'S TEST SYSTEM        1997-06-04 09:54     MDB
_  AMQA        DAVE'S QA COPY            1996-07-29 09:02     JKB
_  AMV2        DAVE'S TEST SYSTEM        1993-08-25 01:26     DAF
_  ASAM        TEST AM                    1997-07-23 14:28     RDHCJM3
_  ASQA        TEST SYSTEM                1997-07-09 14:31     RDHCJM2
_  ASQ1        BMCASQ1                    1996-06-12 12:49     JKB
_  ASQ2        KEVIN'S SUBSYSTEM         1995-11-29 09:18     RDHJHW
_  A241        DOMA241                    1996-06-18 14:32     JKB
_  A242        TEST                        1997-06-25 13:49     RDHCJM3
F1=Help      F2=Split      F3=End        F4=Sort A     F5=Sort D     F6>Showcmds
F7=Up        F8=Down       F9=Swap       F10=Left     F11=Right     F12=Cancel

```

The DOMPLEX Profile Administration panel displays a list of all DOMPLEX 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 profile name.

**Note:** You can change the values in the DOMPLEX Profile while the Data Collectors are active, but these changes do not take effect until each Data Collector is initialized. The values in the DOMPLEX Profile are saved across product sessions.

When you specify a new profile, or choose to view or modify an existing profile, the DOMPLEX Profile Menu is displayed (Figure 3-3).

Figure 3-3 DOMPLEX Profile Menu (DOMESPR0)

```

DOMESPR0/P                                DOMPLEX Profile Menu                                14:15:49
Command =====> _____

DOMPLEX name : DXJ2

Type an optional description for this DOMPLEX in the field below.

Description . . . . . DIANNE'S_PROFILE_____

Select one of the following options. Then press Enter.

_ 0. DOMPLEX Parameters      - Parameters that apply to the entire DOMPLEX
  1. Data Collector List    - Data Collector subsystems in DOMPLEX
  2. DB2 Monitor List      - DB2 subsystems to be monitored
  3. Output Group List     - Historical data output group definitions

F1=Help      F2=Split      F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down       F9=Swap    F10=Left   F11=Right   F12=Cancel

```

The name of the DOMPLEX Profile is displayed at the top of the panel (highlighted in Figure 3-3). If it is a new profile, the description is blank until you specify a description (highlighted).

The DOMPLEX Profile Menu contains the following options for changing the DOMPLEX Profile:

1. **DOMPLEX Parameters** is used to set values that apply to the entire DOMPLEX in a sysplex environment.
2. **Data Collector List** is used to define the initialization parameters for each Data Collector subsystem (for example, the number of concurrent batch and online users that are allowed).
3. **DB2 Monitor List** is used to specify the DB2 subsystems that can be monitored by the Data Collectors in the DOMPLEX.
4. **Output Group List** is used to define the output groups that will be used to buffer trace records and to define and allocate the trace data sets to which records will be written from the output groups.

## DOMPLEX Parameters (Option 0)

Use the DOMPLEX Parameters panel (Figure 3-4) to set values that relate to communication in a sysplex environment.

**Figure 3-4** DOMPLEX Parameters Panel (DOMESPRO)

```

DOMESPRO/P                                DOMPLEX Parameters                                10:51:01
Command ====> _____

DOMPLEX name : DXJ2

Specify the following DOMPLEX controls.  Then Exit.

Sysplex communications enabled . . . . . Y          (Y)
Global data transfer limit . . . . . _20          (1-999 Mb)
Local data transfer limit . . . . . _50          (1-999 Mb)

F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap    F10=Left   F11=Right   F12=Cancel

```

The **Global data transfer limit** determines the maximum size (in megabytes) of a request that can be transferred to a remote system. Any request that exceeds the limit specified there will be terminated.

Valid values are any number in the range 1-999. The default is 20.

**Note:** If you raise the global data transfer limit, more private storage in the Data Collector is used per user, which has the potential to cause problems with paging and throughput, depending on the number of concurrent users.

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

## DOMPLEX Data Collector List (Option 1)

Use the DOMPLEX Data Collector List (Figure 3-5) 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.

**Figure 3-5 DOMPLEX Data Collector List (DOMESPR1)**

```

DOMESPR1/P                DOMPLEX Data Collector List                LINE 1 OF 2
Command =====> _____ Scroll =====> CSR_

DOMPLEX name : DXJ

To add an entry, type the subsystem ID in the "New Data Collector" field, and
optionally type one or more action codes. Then press Enter.
  S -Select      D -Delete      C -Copy

New Data Collector  _____ (subsystem ID)

Act      DC SSID
---      -
_        DOM1
_        DOM2

F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left     F11=Right     F12=Cancel

```

Data Collector names consist of four alphanumeric characters beginning with a letter. Data Collector names cannot be the same as the name of any other subsystem on the same MVS system or any other Data Collector in the DOMPLEX.

After you add a new Data Collector to the list, press **Enter** to display the Data Collector Control Options panel.

## Data Collector Control Options

Use the Data Collector Control Options panel (Figure 3-6) to define the initialization parameters for the Data Collector subsystem.

**Note:** Maximum number of concurrent batch users applies only to ACTIVITY MONITOR, APPTUNE, Application Performance, and MAINVIEW for DB2 – Data Collector.

**XBM cache statistics interval, VTAM Router profile (APPLID), and Exception Facility PROC to be started** apply only to ACTIVITY MONITOR.

**Figure 3-6 Data Collector Control Options Panel (DOMESP10)**

```

DOMESP10/P                               Data Collector Control Options                               11:03:48
Command =====> _____

Data Collector name : DOM2                 DOMPLEX name : DXJ2

Specify the following subsystem initialization controls. Then Exit.

Maximum number of concurrent online users . . _99          (1-999)
Maximum number of concurrent batch users . . __1          (0-999)
WTO messages route code . . . . . _0                    (0-16)
WTO upon user connection . . . . . Y                    (Y=Yes,N=No)
WTO upon user connect termination . . . . . Y            (Y=Yes,N=No)
Maximum DB2 log messages retained online . . _500        (1-9999) .1k ECSA each
XBM cache statistics interval . . . . . __60            (0-1440 minutes)
VTAM Router profile (APPLID) . . . . . _____
Exception Facility PROC to be started . . . . DOMXCEP_

F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap     F10=Left   F11=Right   F12=Cancel
    
```

8

The **VTAM Router profile (APPLID)** field specifies the VTAM Router Profile that will be started automatically by this Data Collector during AM initialization. The VTAM Router Profile name is the same as your VTAM APPLID. If you leave this field blank, the VTAM Router will not be started automatically.

You can start the VTAM Router manually as an MVS started task or as a batch job. Running the VTAM Router as a batch job is not recommended.

## DOMPLEX DB2 List (Option 2)

Use the DOMPLEX DB2 List panel (Figure 3-7) to display a list of all DB2 subsystems that can be monitored by the Data Collectors in this DOMPLEX, to add DB2s to (or delete DB2s from) the list, and to see which products are associated with each DB2. There is no limit to the number of DB2 subsystems that can be monitored.

From this panel, you can move to other panels where you define the DB2 subsystems and specify

- ACTIVITY MONITOR/MAINVIEW for DB2 – DC trace activity that is started automatically when this DOMPLEX begins monitoring DB2
- APPTUNE/Application Performance collection options

**Figure 3-7 DOMPLEX DB2 List Panel (DOMESPR2)**

```

DOMESPR2/P                                DOMPLEX DB2 List                                LINE 1 OF 1
Command =====> _____ Scroll ==> CSR_

DOMPLEX name: DOCUMENT

To add a DB2, type the DB2 subsystem ID in the "New DB2" field, and/or type
one or more action codes. Then press Enter.
  S -Select      D -Delete      C -Copy

New DB2 _____ (DB2 subsystem ID)

Act Name      Enable with AM or MVDB2      Activate Exceptions with AM      Start Collection Opts      Enable Pool Advisor      SQL Explorer Available
-----      -
_ DEAL      Y      N      Y      YYYYYYYN      YYYYN      Y      N

AM and MAINVIEW for DB2 – Data Collector only
AM only
APPTUNE and Application Performance only
Pool Advisor and System Performance only
SQL Explorer and Application Performance only

F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up      F8=Down      F9=Swap      F10=Left      F11=Right      F12=Cancel
    
```

You can specify a new DB2 by typing the DB2 subsystem ID in the New DB2 field. Type an asterisk (\*) in this field to indicate that you want to monitor all active DB2s on the DOMPLEX.

When you specify a new subsystem ID or select with the S or C action code, the DB2 Definition panel is displayed.

## DB2 Definition Panel

Use the DB2 Definition panel (Figure 3-8) to view or modify values that are associated with the selected DB2 subsystem:

### Pool Advisor/System Performance:

- monitor using Pool Advisor

### ACTIVITY MONITOR:

- start exceptions automatically
- statistics interval
- XBM statistics interval

### ACTIVITY MONITOR/MAINVIEW for DB2

- monitor with AM or MVDB2

### APPTUNE/Application Performance:

- start APPTUNE SQL data collection automatically

### ACTIVITY MONITOR/APPTUNE/Application Performance/MAINVIEW for DB2 – Data Collector:

- Dynamic Explain plan name

### SQL Explorer/Application Performance:

- use with SQL Explorer
- Dynamic Explain plan name

### Application Performance

- database name of WHAT-IF PLAN\_TABLE
- table space name of WHAT-IF PLAN\_TABLE

**Figure 3-8 DB2 Definition Panel (DOMESP20)**

```

DOMESP20/P                      DB2 Definition                      08:12:11
Command =====> _____

DB2 subsystem name : DEAL                      COMPLEX name : DOCUMENT

Specify the values that will apply to this DB2 below.  Then EXIT.

Monitor this DB2 with AM or MAINVIEW for DB2 . . . . Y          (Y=Yes, N=No)
Monitor this DB2 with Pool Advisor/System Perf . . . Y          (Y=Yes, N=No)
Auto start APPTUNE/App Perf data collection . . . . Y          (Y=Yes, N=No)
SQL Explorer available for use with this DB2 . . . : Y          (Y=Yes, N=No)

Dynamic Explain plan name . . . . . DAA400D1
DB name of dynamically created WHAT-IF PLAN_TABLE . BMCPERF_
TS name of dynamically created WHAT-IF PLAN_TABLE . PLANTAB_
Auto start exceptions . . . . . N          (Y=Yes, N=No)
DB2 statistics collection interval . . . . . __30          (0-9999 minutes)
XBM data set statistics collection interval . . . . __0          (0-1440 minutes)

Set/View AM or MVDB2/DC IFCID controls . . . . . N          (Y=Yes, N=No)
Change/View APPTUNE/App Perf collection options? . . N          (Y=Yes, N=No)
  F1=Help      F2=Split      F3=End      F4=Sort A    F5=Sort D    F6=Showcmds
  F7=Up        F8=Down       F9=Swap     F10=Left    F11=Right   F12=Cancel
    
```

To specify the **ACTIVITY MONITOR/MAINVIEW** for DB2 trace controls for this DB2, answer **Y** to the question **Set/View AM or MVDB2 IFCID trace controls?** The DB2 Trace Controls panel is displayed. See pages 3-11 through 3-16 for a description of the trace control panels.

To specify the **APPTUNE/Application Performance** collection options for this DB2, answer **Y** to the question **Change/View APPTUNE/App Perf collection options?** The Collection Controls panel is displayed. See pages 3-17 through 3-24 for a description of the collection options panels.

**DB2 Trace Controls Menu (ACTIVITY MONITOR/MAINVIEW for DB2 only)**

Use the DB2 Trace Controls menu (Figure 3-9) to access the options relating to trace activity for the selected DB2.

**Figure 3-9 DB2 Trace Controls Menu (DOMESPD0)**

```

DOMESPD0/P                               DB2 Trace Controls                               11:15:12
Command ====> _____

DB2 subsystem name : DBAS                   COMPLEX name : DXJ2

Select one of the following options.  Then press Enter.

_ 1. DB2 IFCIDs to be traced automatically
   2. DB2 IFCIDs to be discarded
   3. BMC IFCIDs to be discarded
   4. Accounting trace classes to be started automatically

F1=Help   F2=Split   F3=End     F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up     F8=Down    F9=Swap   F10=Left   F11=Right  F12=Cancel

```

The DB2 Trace Controls menu contains the following options:

1. **DB2 IFCIDs to be traced automatically**  
Use this option to select specific IFCIDs to trace.
2. **DB2 IFCIDs to be discarded**  
Use this option to discard specific DB2 IFCIDs before writing them to the trace data sets.
3. **BMC IFCIDs to be discarded**  
Use this option to discard specific BMC IFCIDs before writing them to the trace data sets.
4. **Accounting trace classes to be started automatically**  
Use this option to select the accounting trace classes to be started at Data Collector initialization.

**Auto-Start DB2 IFCIDs (ACTIVITY MONITOR/MAINVIEW for DB2 only)**

Use the Auto-Start DB2 IFCIDs panel (Figure 3-10) to select specific IFCIDs that are traced automatically when a Data Collector begins monitoring the specified DB2 subsystem. The names of both the DOMPLEX and the DB2 subsystems are displayed at the top of the panel (highlighted in Figure 3-10).

**Figure 3-10 Auto-Start DB2 IFCIDs Panel (DOMESPD1)**

```

DOMESPD1/P                               Auto-Start DB2 IFCIDs                               LINE 1 OF 18
Command =====> _____ Scroll ==> CSR_

DB2 subsystem name : DBE1                 DOMPLEX name : DXJ2

Type S to select IFCIDs to be automatically traced. Then Exit.
X indicates an IFCID that cannot be selected.

IFCID      5   10   15   20   25   30   35   40   45   50   55   60   65
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
SSS_____S_____S_____

IFCID      70   75   80   85   90   95  100  105  110  115  120  125  130
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
_____SSSSSS_____X__XX

IFCID     135  140  145  150  155  160  165  170  175  180  185  190  195
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
XXXXXXXXXX_____XXXXXXXXXXXXX_____X_____S_____X_____

IFCID     200  205  210  215  220  225  230  235  240  245  250  255  260
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
S_____SSSSSSSS_____S_X_____SXXXXXXX_____X_____X_____

IFCID     265  270  275  280  285  290  295  300  305  310  315  320  325
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
_____X_____XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX_____XXXXXXXXXX

IFCID     330  335  340  345  350  355  360  365  370  375  380  385  390
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
XXXX_XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    
```

Type S beneath each IFCID to be traced. The following IFCIDs are selected automatically for every DB2 defined. All of the IFCIDs in the list are selected automatically for ACTIVITY MONITOR. Only the IFCIDs marked with an asterisk (\*) are selected for MAINVIEW for DB2 – Data Collector.

- DB2 001 and DB2 002 (Statistics)\*
- DB2 003 (Accounting)\*
- DB2 31 (EDM pool full condition)
- DB2 54 (Lock contention)
- DB2 102 and DB2 103 (Start and End short on storage)
- DB2 104 (Log data set names)
- DB2 105 (DBID/OBID translation)
- DB2 106 (System parameters)
- DB2 107 (Page set OPEN/CLOSE)\*
- DB2 172 (Deadlock detection)
- DB2 196 (Timeout Detail)

DB2 199 (Data Set I/O Statistics)  
DB2 202 (Dynamic DSNZPARMS)  
DB2 203 (Heuristic decision)  
DB2 204 (Partner COLD START detection)  
DB2 205 (Incorrect LOGNAME or syncpoint)  
DB2 206 (SNA compare states protocol error)  
DB2 207 (Heuristic damage during CS exchange)  
DB2 208 (SNA syncpoint protocol error)  
DB2 209 (Syncpoint communication failure)  
DB2 210 (LOGNAME changed on WARM START)  
DB2 230 (Global Status)  
DB2 239 (Accounting DBRM/package overflow)\*

Traces for these IFCIDs cannot be turned off.

Although no Ss are displayed on the panel for them, the following IFCIDs are started automatically for MAINVIEW for DB2 – DC.

- DB2 090 (DB2 command text)
- DB2 125 (RIDLIST processing)
- DB2 140 (Audit authorization failures)
- DB2 141 (Audit GRANTs and REVOKEs)
- DB2 142 (Audited object DDL)
- DB2 143 (Audited object first write attempt)
- DB2 144 (Audit object first read attempt)
- DB2 145 (Audited object DML at BIND)

There are certain IFCIDs for which you cannot start traces. There are Xs beneath these IFCIDs (see Figure 3-10).

The records that are traced as a result of these specifications are written to the trace data sets.

**DB2 IFCIDs to Discard Panel (ACTIVITY MONITOR/MAINVIEW for DB2 Only)**

Use the DB2 IFCIDs to Discard panel (Figure 3-11) to select DB2 IFCIDs that, although they might be traced, will be discarded before they are written to the trace data sets. The names of both the DOMPLEX and the DB2 subsystems are displayed at the top of the panel (highlighted in Figure 3-11).

**Figure 3-11 DB2 IFCIDs to Discard Panel (DOMESPD2)**

```

DOMESPD2/P                                DB2 IFCIDs to Discard                                LINE 1 OF 18
Command =====> _____ Scroll ==> CSR_

DB2 subsystem name : DBE1                    DOMPLEX name : DXJ2

Type S to select IFCIDs not to be written to trace data sets. Then Exit.
X indicates an IFCID that cannot be selected.

IFCID      5   10   15   20   25   30   35   40   45   50   55   60   65
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
IFCID      70   75   80   85   90   95  100  105  110  115  120  125  130
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
IFCID      135  140  145  150  155  160  165  170  175  180  185  190  195
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
XXXXXXXXXX      XXXXXXXXXXXXX      X      X
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
IFCID      200  205  210  215  220  225  230  235  240  245  250  255  260
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
IFCID      265  270  275  280  285  290  295  300  305  310  315  320  325
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
IFCID      330  335  340  345  350  355  360  365  370  375  380  385  390
.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|.....|
XXXX_XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

```

Type **S** beneath each IFCID to be discarded. Certain IFCIDs are traced automatically and tracing for them cannot be turned off. They include the accounting and statistics IFCIDs (DB2 001–DB2 003). Although you cannot prevent tracing of these IFCIDs, you can use this panel to discard the records before they are written to the trace data sets.

Traces cannot be started for some IFCIDs. There are **Xs** beneath these IFCIDs (see Figure 3-11).

**BMC IFCIDs to Discard Panel (ACTIVITY MONITOR/MAINVIEW for DB2 Only)**

Use the BMC IFCIDs to Discard panel (Figure 3-12) to select BMC IFCIDs that, although they might be traced, will be discarded before they are written to the trace data sets. The names of both the DOMPLEX and the DB2 subsystems are displayed at the top of the panel (highlighted in Figure 3-12).

**Figure 3-12 BMC IFCIDs to Discard Panel (DOMESPD3)**

```

DOMESPD3/P                                BMC IFCIDs to Discard                                LINE 1 OF 15
Command =====> _____ Scroll ==> CSR_

DB2 subsystem name : DBE1                    DOMPLEX name : DXJ2

Type S to select IFCIDs not to be written to trace data sets. Then Exit.
X indicates an IFCID that cannot be selected.

IFCID      5   10   15   20   25   30   35   40   45   50   55   60   65
...|...|...|...|...|...|...|...|...|...|...|...|...|
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
IFCID      70   75   80   85   90   95  100  105  110  115  120  125  130
...|...|...|...|...|...|...|...|...|...|...|...|...|
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
IFCID     135  140  145  150  155  160  165  170  175  180  185  190  195
...|...|...|...|...|...|...|...|...|...|...|...|...|
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
IFCID     200  205  210  215  220  225  230  235  240  245  250  255  260
...|...|...|...|...|...|...|...|...|...|...|...|...|
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
IFCID     265  270  275  280  285  290  295  300  305  310  315  320  325
...|...|...|...|...|...|...|...|...|...|...|...|...|
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
IFCID     330  335  340  345  350  355  360  365  370  375  380  385  390
...|...|...|...|...|...|...|...|...|...|...|...|...|
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

```

Type S beneath each IFCID to be discarded. Certain IFCIDs are produced and automatically written to the trace data sets. IFCIDs BMC 242 and BMC 251, for example, are created at each statistics interval. Although you cannot prevent tracing of these IFCIDs, you can use this panel to discard the records before they are written to the trace data sets.

Traces cannot be started for some IFCIDs. There are Xs beneath these IFCIDs. There are also Xs beneath the IFCID numbers not used by AM or MAINVIEW for DB2 (see Figure 3-12).

**Accounting Trace Class Specifications Panel (ACTIVITY MONITOR/MAINVIEW for DB2 Only)**

Use the Accounting Trace Class Specifications panel (Figure 3-13) to specify which accounting classes are started automatically when the Data Collector subsystem begins communicating with the DB2 subsystem and to determine which (if any) accounting trace classes can be started dynamically by users of this DB2 subsystem when a report is activated. The names of both the DOMPLEX and the DB2 subsystems are displayed at the top of the panel (highlighted in Figure 3-13).

**Figure 3-13 Accounting Trace Class Specifications (DOMESPD4)**

```

DOMESPD4/P           Accounting Trace Class Specifications           11:20:32
Command =====> _____

DB2 subsystem name : DBAS                DOMPLEX name : DXJ2

Following is the list of accounting trace classes. Select the classes to
be started when the Data Collector is initialized. If Auto start is N ,
specify if the class can be dynamically started by report activation.

Class      Description                                     Auto start  Report
-----      -----                                     (Y,N)      (Y,N)
1          Application data - always started
2          In-DB2 elapsed timing information                Y           Y
3          DB2 suspend timing information                Y           Y
5          Time spent processing IFI requests (DB2 V3)  Y           Y
7          DB2 events for packages, DBRMs (DB2 V3)    Y           Y
8          Wait time for packages (DB2 V3)             Y           Y

F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left      F11=Right     F12=Cancel

```

## Collection Controls Menu (APPTUNE/Application Performance Only)

Use the Collection Controls menu (Figure 3-14) to access the options relating to the collection of data for SQL statement reporting.

**Figure 3-14 Collection Controls Menu (DOMESPQ0)**

```

DOMESPQ0/P                               Collection Controls                               16:14:00
Command =====> _____

DB2 subsystem name : DEAL                   DOMPLEX name : DOCUMENT

Select one of the following options.  Then press Enter.

_ 1. Data to be collected
   2. Optional collection keys
   3. Filter profile
   4. SQL statistics collection interval

F1=Help    F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up      F8=Down     F9=Swap    F10=Left   F11=Right   F12=Cancel

```

The Collection Controls menu contains the following options:

1. **Data to be collected**  
Use this option to select the types of data that will be collected for reporting by this DB2 and its associated Data Collector.
2. **Optional collection keys**  
Use this option to specify optional summarization keys to be used for collecting data for reporting by this DB2 and its associated Data Collector.
3. **Filter profile**  
Use this option to select or deselect a filter profile that will be used to filter the data collected for reporting by this DB2 and its associated Data Collector.
4. **SQL statistics collection interval**  
Use this option to select a statistics interval. You can select a single interval or you can select multiple intervals based on the time of day.

### Data Collection Options Panel (APPTUNE/Application Performance Only)

Use the Data Collection Options panel (Figure 3-15) to select the types of data that will be collected for reporting by this DB2.

**Figure 3-15 Data Collection Options Panel (DOMESPQ1)**

```

DOMESPQ1/I                               Data Collection Options                               09:43:50
Command =====> _____

DB2 subsystem name : DBB2                   DOMPLEX name : ASQA320

The following values control the types of data collected for this DB2.

Accounting data . . . . . : Y      (Always on )
Buffer pool data . . . . . : Y      (Y=Yes,N=No)
Lock data . . . . . : Y      (Y=Yes,N=No)
SQL text data . . . . . : Y      (Y=Yes,N=No,S=Static,D=Dynamic)
I/O optimization data . . . . . : Y      (Y=Yes,N=No)
SQL error data . . . . . : Y      (Y=Yes,N=No)
Object data . . . . . : N      (Y=Yes,N=No,S=Static,D=Dynamic)
Fetch data . . . . . : Y      (Y=Yes,N=No)

The following value controls whether data is to be sampled.

Sample data . . . . . : N      (Y=Yes,X=Extrapolate,N=No)

Caution: See HELP for comments and recommendations.
F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down      F9=Swap      F10=Left      F11=Right      F12=Cancel
    
```

The following types of data can be collected:

- **Accounting data**  
By default, accounting data is always collected. Accounting data includes the values for CPU, elapsed, and wait times on reports.
- **Buffer pool data**  
Collect buffer pool data to see values for I/O counts, I/O requests, and getpages.
- **Lock data**  
Collect lock data to see values for the number and types of locks on the detail reports.
- **SQL text data**  
Collect SQL text data to look at SQL text or issue an EXPLAIN command. The only time you might otherwise get SQL data is if an error occurs and you are collecting error data. You can choose to collect only static SQL text, only dynamic SQL text, or both.

- **I/O optimization data**  
Collect I/O optimization data to see values for I/O parallelism and RID list usage and failures on the detail reports.
- **SQL error data**  
Collect SQL error data to generate error reports.
- **Object data**  
Collect object data about each SQL statement. Object data collection is required for all object reports. You can choose to collect object data for only static SQL, only dynamic SQL, or both.

**Note:** CAUTION: Collecting object data can add 1 to 5% additional overhead to using the product. Additional internal and external storage might be needed to keep the data.

- **Fetch data**  
Collect all fetch statements. You can use this option to stop collection of FETCHes if you need to reduce the volume of data collected and its associated overhead.
- **Sample data**  
If overhead is an issue, you can also choose to collect only a sample of data to reduce the volume of data collected. When sampling is active, data is collected intermittently for one quarter of the elapsed time. This reduces the amount of data that is collected (and the overhead associated with data collection) by approximately 75%, while still providing a representative sample of data for evaluation.

When the extrapolate option (X) is specified, the value for the number of records collected is multiplied by four, so that the values for totals in reports will approximate the totals that occur when sampling is off.

## Collection Key Options Panel (APPTUNE/Application Performance Only)

Use the Collection Key Options panel (Figure 3-16) to select optional summarization keys for the data that is collected (in addition to the default keys).

**Figure 3-16 Collection Key Options (DOMESPQ2)**

```

DOMESPQ2/I                               Collection Key Options                               09:42:42
Command =====> _____

DB2 subsystem name : DBB2                  DOMPLEX name : ASQA320

By default, data is summarized and recorded for each unique DB2
subsystem, plan, program (and version), section, and statement number.
Specify the following additional summarization keys to be used. Then Exit.

Collect data for each unique user ID . . . . N (Y=Yes,N=No,S=Static,D=Dynamic)
Collect data for each unique connection . . N (Y=Yes,N=No)
Collect data for each unique correlation ID N (Y=Yes,N=No)
Collect data for each unique workstation ID N (Y=Yes,N=No)

Collect data for each unique dynamic stmt. . N (Y=Yes,N=No,H=Host Var Only)
Granular dynamic stmt detail . N (Y=Yes,N=No)

Caution: See HELP for comments and recommendations.

F1=Help      F2=Split      F3=End      F4=Sort A    F5=Sort D    F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left    F11=Right    F12=Cancel

```

The product takes raw data from DB2 and reduces the volume by summarizing the data for each unique instance of the following identifiers:

- DB2 subsystem
- plan name
- program (and version)
- section
- statement number

Data is not automatically summarized by user, connection ID, correlation ID, dynamic SQL text, or workstation ID. When there are many unique values for these reduction keys, the volume of summarized data can increase significantly, which can in turn

- affect the time it takes to generate reports
- increase the data being written to the trace data sets
- affect storage use

When user, connection, correlation, and workstation ID data are not summarized, all values for each these identifiers are reported together in one entry on reports with **N/P** (not present) displayed instead of individual values.

As it can be useful at times to collect this information, options on this panel can be used to cause collection of user, connection, correlation, dynamic text, and workstation ID data. Think carefully about the impact that this could have on the volume of data at your site before you decide to collect this data.

**Note:** Consider using the summarization option for user ID in a filter profile instead of incurring the overhead of collecting data for all users. See “Filter Profiles Panel (APPTUNE/Application Performance Only)” on page 3-22.

In the SAP environment, the options for collecting *connection* and *correlation ID* data will actually cause collection of *work process number* and *work process ID*. If you want to collect work process numbers, specify **Y** for **Collect data for each unique connection**. If you want to collect work process IDs, specify **Y** for **Collect data for each unique correlation ID**.

When you change the value in one or more of these fields, the new values do not take effect until the Data Collector that is associated with this DB2 is recycled.

### Filter Profiles Panel (APPTUNE/Application Performance Only)

Use the Filter Profiles panel (Figure 3-17) to specify whether a filter profile will be used when the Data Collector is started. If you choose to filter at startup, you must select one filter profile for use with each combination of DB2 and its associated Data Collector.

**Figure 3-17 Filter Profiles Panel (ASQEFILS)**

```

ASQEFILS/P                               Filter Profiles                               LINE 1 OF 16
Command =====> _____ Scroll =====> CSR_

DB2 subsystem name   : DEAL                               DOMPLEX name : DOCUMENT
Current profile name :
Filter at startup? . . N   (Y-Yes,N-No)

To activate filter processing, specify "Y" to "Filter at startup" and select
the filter profile to be used for this combination of DB2 and its associated
Data Collector. Then Exit.

Actions:  S -Select a profile V -View profile definition

----- Last changed -----
Act  Name      Description                               User      Date      Time
---  -
_    BOB3
_    DIANNE     SAMPLES                               RDHDXJ3   2001-03-07 15:23
_    TESTFILT   TEST USERID FILTER                     RDHCJM3   1998-12-21 15:14
_    F200195    USERID ONLY                             RDHHMP4   2001-09-12 14:46
_    F230860
F1=Help  F2=Split  F3=End   F4=Sort A  F5=Sort D  F6=Showcmds
F7=Up    F8=Down   F9=Swap  F10=Left  F11=Right  F12=Cancel
    
```

To modify an existing profile or to create a new profile, use the Filter Profile option from the Administration menu (see “Creating a Filter Profile” on page 7-8).

You can also view (but not modify) the contents of the existing filter profiles. Use the **V (View profile definition)** action code to display the Filter Profile Definition panel.

## Filter Profile Definition Panel (APPTUNE/Application Performance Only)

Use the Filter Profile Definition panel (Figure 3-18) to view the filter profile definition.

**Figure 3-18 APPTUNE Filter Profile Definition Panel (ASQEFIL0)**

```

ASQEFIL0/I                               Filter Profile Definition                               LINE 1 OF 1
Command =====> _____ Scroll ==> CSR_

Filter profile name : ABCFILT      Description : FILTER FOR ABC APPLICATION

By default, data is collected for all programs and plans that execute on a
DB2 subsystem. Filters can be used to either stop data collection or to
set tailored collection options for specific identifiers.

To add a new entry to the filter complete the appropriate fields and press
Enter. See HELP for more information and wildcard rules.

Program:                                PLAN:                                User ID:                                DB2:
Corr ID:

Action: D -Delete entry from the list    M -Modify collection parameters

          Collect Keys  +  Exceptions  +
Act Program Plan   User ID  Corr ID  DB2  A T O S U D G  Elapsed CPU  H
-----
   RDAE*   PL3*   *         *         *   Y Y Y N Y Y N           0         0  N

F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap     F10=Left   F11=Right   F12=Cancel

```

The Filter Profile Definition panel is also used to define filter profiles when it is accessed from the **Filter Profiles** option on the Administration menu. From the DOMPLEX Profile DB2 definition, this panel can be used only to *view* existing definitions.

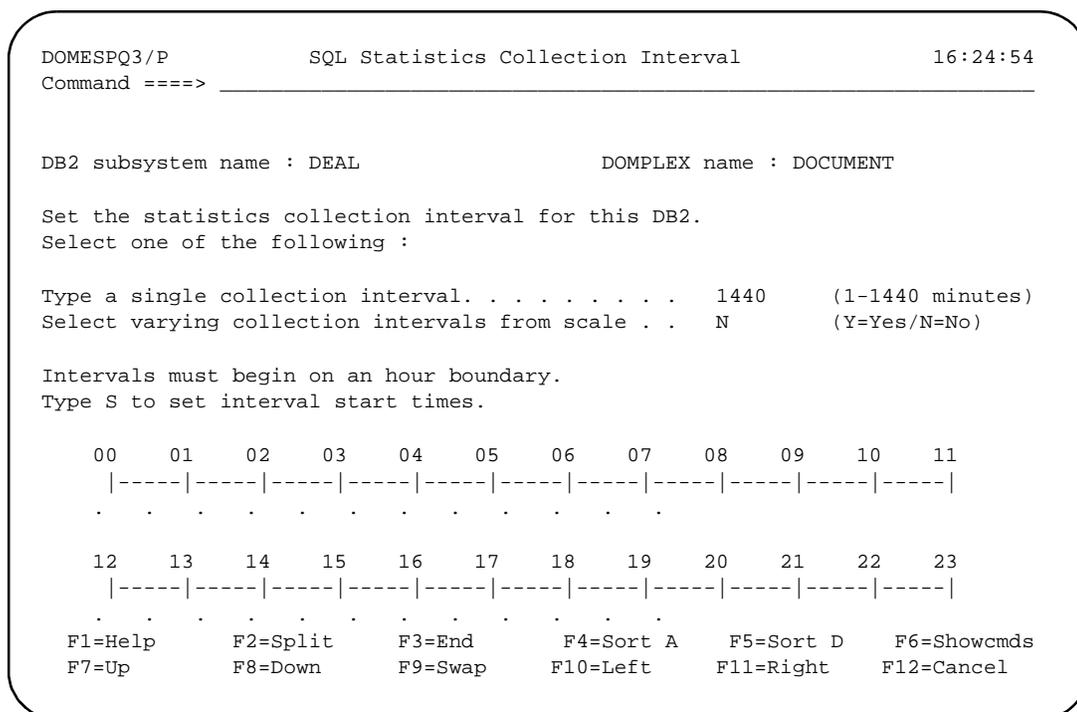
### SQL Statistics Collection Interval Panel (APPTUNE/Application Performance Only)

Use the SQL Statistics Collection Interval panel (Figure 3-19) to specify the interval (in minutes) or multiple intervals (in one-hour increments) at which data is written to the trace data sets:

- If you specify a single interval, data will be written each time that the specified number of minutes is reached.
- If you specify multiple intervals of different lengths, data will be written each time that a new interval begins.

**Note:** BMC Software recommends that you specify the same statistical interval for all DB2s that are monitored by the same Data Collector, synchronizing the beginning and ending times of intervals for all DB2s. When you subsequently select an interval or range of intervals for reporting, you will get all the data you need for all DB2s. If the DB2s have different intervals, the reporting interval that you select could begin or end in the middle of the statistical interval for some DB2s and some data you need in reports would be missing.

**Figure 3-19 SQL Statistics Collection Interval Panel (DOMESPQ3)**



---

## Output Groups (Option 3)

An output group is a collection of specifications that are used to collect and process data for writing to the trace data sets.

Because the main purpose of output groups is to store records in trace data sets for batch or historical reporting, this topic carries more importance to users of ACTIVITY MONITOR, APPTUNE, MAINVIEW for DB2, and Pool Advisor than to users of SQL Explorer (which does not use the System and SQL Performance products batch or historical reporting functions).

When only SQL Explorer is installed, the Installation Assistant creates an output group that meets the product's minimal needs. It will not be necessary for you to modify this output group or create any others.

An output group consists of the following specifications:

### **Subsystems\***

You can specify a Data Collector to own the output group if you want to collect and store data associated with a specific Data Collector. If you do not specify a Data Collector, output group ownership will switch between the Data Collectors defined to the DOMPLEX, as necessary.

You can also specify up to 32 DB2 subsystems from which to collect data and store it in this output group. The DB2s specified must be defined to this DOMPLEX.

### **Data Classes\***

You can select one or more data classes to specify the IFCIDs that will be captured and stored by this output group. You can choose from the data classes listed in the following table.

<b>Data Class</b>	<b>IFCIDs</b>
DB2ACCT	DB2 accounting records. DB2 IFCIDs: <ul style="list-style-type: none"> <li>• 3—Accounting</li> <li>• 239—Accounting DBRM/Package Overflow</li> </ul>
DB2SYS	DB2 system records. DB2 IFCIDs: <ul style="list-style-type: none"> <li>• 1—System Statistics</li> <li>• 2—Database Statistics</li> <li>• 31—EDM Pool Full Condition</li> <li>• 54—Lock Contention</li> <li>• 102—Start Short on Storage</li> <li>• 103—End Short on Storage</li> <li>• 104—Log Data Set Names</li> <li>• 105—DBID/OBID Translate to Names</li> <li>• 106—System Parameters (DSNZPARM)</li> <li>• 107—Page Set OPEN/CLOSE</li> <li>• 172—Deadlock Detail</li> <li>• 196—Timeout Detail</li> <li>• 199—Data Set I/O Statistics</li> <li>• 202—Statistics Dynamic DSNZPARMS</li> <li>• 203—Heuristic Decision (DDF COMMIT/ABORT)</li> <li>• 204—Partner COLD START Detected</li> <li>• 205—WARM START logname or syncpoint error</li> <li>• 206—SNA Compare States (CS) Protocol Error</li> <li>• 207—Heuristic Damage During CS Exchange</li> <li>• 208—SNA Syncpoint Protocol Error</li> <li>• 209—Syncpoint Communication Failure</li> <li>• 210—LOGNAME Changed on WARM START</li> <li>• 230—Global Statistics</li> <li>• 232—Thread Entry or Exit from DB2</li> <li>• 233—Start/End Call Stored Procedure Server</li> </ul>
DB2AUDIT	DB2 audit records. DB2 IFCIDs: <ul style="list-style-type: none"> <li>• 140—Audit Authorization Failures</li> <li>• 141—Audit GRANTs and REVOKEs</li> <li>• 142—Audited Object DDL</li> <li>• 143—Audited Object First Write Attempt</li> <li>• 144—Audited Object First Read Attempt</li> <li>• 145—Audited Object DML at BIND</li> <li>• 146—User-Defined Audit Trace</li> <li>• 312—Audit Trail for DCE Security Processing</li> </ul>
DB2PERF	DB2 Performance Records (all other DB2 IFCIDs)
AMSYSTEM	BMC system records. BMC IFCIDs: <ul style="list-style-type: none"> <li>• 241—Command Response</li> <li>• 242—System Details Samples</li> <li>• 245—DB2 WTO Messages</li> <li>• 246—Exception Events</li> <li>• 251—DSNZPARM Samples</li> <li>• 252—Statistics Dynamic DSNZPARMS</li> <li>• 254—DBAS Statistics Samples</li> <li>• 255—SSAS Statistics Samples</li> <li>• 256—Global Statistics Samples</li> </ul>
OPERTUNE**	OPERTUNE records (BMC IFCID 17)
XBMCACHE**	XBM Cache Statistics records (BMC IFCID 33)
XBMDs**	XBM Data Set Statistics records (BMC IFCID 35)

<b>Data Class</b>	<b>IFCIDs</b>
APSTACC	APPTUNE/Application Performance BMC IFCIDs: <ul style="list-style-type: none"> <li>• 6—Interval Statistics</li> <li>• 307—SQL Statement Summary</li> <li>• 318—Filter Data</li> </ul>
APSTACCS	APPTUNE/Application Performance Accounting Statement Summary records: (BMC IFCIDs 308–310)
APSTMT	APPTUNE/Application Performance BMC IFCIDs: <ul style="list-style-type: none"> <li>• 4—SQL Exceptions</li> <li>• 5—SQL Statement Text</li> <li>• 10—Host Variables</li> <li>• 11—Object Statistics per SQL Exception</li> </ul>
APEROR	APPTUNE/Application Performance BMC IFCID: <ul style="list-style-type: none"> <li>• 7—SQL Errors</li> </ul>
APOBJECT	APPTUNE/Application Performance Object Statistics. BMC IFCIDs: <ul style="list-style-type: none"> <li>• 8—SQL Statement/Object Cross-Reference</li> <li>• 9—Access Object Statistics</li> </ul>
PAHIST	Pool Advisor History. BMC IFCIDs: <ul style="list-style-type: none"> <li>• 72—DB2 Storage Usage Status</li> <li>• 82—DB2 Page Set Access Statistics</li> <li>• 86—DB2 Object Getpage Statistics</li> <li>• 89—DB2 Object Getpage Event Trace</li> <li>• 95—DB2 Dynamic Statement Cache Plan/DBRM (History)</li> <li>• 96—DB2 Dynamic Statement Cache by Plan (History)</li> <li>• 97—DB2 Dynamic Statement Cache by DBRM (History)</li> <li>• 98—DB2 Dynamic Statement Cache by Corr ID (History)</li> <li>• 99—DB2 Dynamic Statement Cache by Conn ID (History)</li> </ul>
APINDEX	Application Performance Index Events. BMC IFCIDs: <ul style="list-style-type: none"> <li>• 316—Index Statement Summary (Weighted Column Use)</li> <li>• 317—Objects Accessed</li> </ul>
APBIND	Application Performance Bind Events (BMC IFCID 315)
MVDBACC	MAINVIEW for DB2 – Data Collector Accounting Summary Records. (BMC IFCIDs 350–352)
DCSYSTEM	Data Collector events. BMC IFCIDs: <ul style="list-style-type: none"> <li>• 241—Command Response</li> <li>• 245—DB2 WTO Messages</li> </ul>
** These data classes apply only if you are using the associated product with one of the System and SQL Performance products.	

\*Any combination of DB2 and data class must be unique among the output groups for a DOMPLEX. For example, if both DB2A and data class DB2ACCT are defined to one output group, that same combination should not be specified in any other output group that is defined to the same DOMPLEX.

## Data Space

You can specify the size of a data space that will be allocated to capture and process the data for this output group. The recommended size depends on the types of data assigned to the group and the load expected for all types combined.

## Trace Data Sets

You can allocate up to 16 trace data sets that will be used to save the data that is collected and processed by this output group.

Use the DOMPLEX Output Groups panel (Figure 3-20) to review the output groups that are defined to the DOMPLEX or to add or delete output groups.

**Figure 3-20 DOMPLEX Output Groups Panel (DOMESPR3)**

```

DOMESPR3/P                                DOMPLEX Output Groups                                LINE 1 OF 2
Command =====> _____ Scroll =====> CSR_

DOMPLEX name : AMLG
Select one of the following codes.  A base 01 group is automatically defined.
Action codes:  S -View/Modify      I -Insert      C -Copy      D -Delete

Copy JCL data set _____
                Include the member name for a PDS.
Submit on shutdown?  N (Y/N)      Data DB2      DSpC      -Trc Data Sets-
Act Grp  Data Classes      Coll Subsystems      MBs      Cnt Cyls Status
-----
_  01  *      --      --      20      0      0

F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down      F9=Swap      F10=Left      F11=Right      F12=Cancel

```

When this panel is displayed, the output groups that have been previously defined are listed. Details of the group definition are also displayed.

The first time that you display this panel, the output groups and trace data sets that are created for you by the Installation Assistant are displayed. At a minimum, one output group (01) is defined to include all DB2 subsystems, collect all data, and use a data space of 20 MB. You can modify any existing output groups to meet your needs and you can create a maximum of 16 groups.

**Note:** If you are using only SQL Explorer, the Installation Assistant will create one output group for you. Although you are not prevented from creating additional output groups, SQL Explorer will use *only* the output group created by the Installation Assistant.

Output groups are numbered sequentially from 01 to 16 (the maximum allowed). If you delete an output group, the number for that group is reused when you create another group.

You can issue the CHECK command from this panel to check for overlapping definitions among output groups. Message BMC24389 is issued for each detected overlap. An overlap occurs when the same IFCIDs from the same DB2 subsystems are defined to multiple output groups, which can result in confusion about where that data will be stored.

This panel is also used to specify the name of the data set that contains the JCL for automatic submission of the copy job and to indicate whether the copy job should be submitted every time this Data Collector is shut down. The copy job copies the records in a full trace data set to a sequential file in SMF format. The DOMBCOPY utility is provided for this purpose. For more information, see the “DOMBCOPY Utility” in the reference manual or user guide for the product.

When you use the **S** action code (View/Modify) or the **I** action code (Insert), the Output Group Definition menu is displayed. You can make selections from that menu to define the output group.

## Output Group Definition Menu

Use the Output Group Definition menu (Figure 3-21) to access the components of the output group definition. If you are modifying an existing output group, the following details of the current definition are displayed:

- DB2 subsystems
- data classes
- number of trace data sets
- total size (in cylinders) of the trace data sets
- trace data set status

**Figure 3-21 Output Group Definition Menu (DOMESP30)**

```

DOMESP30/P                               Output Group Definition                               14:20:02
Command =====> _____

Output group : 01                          DOMPLEX name : DXJ2

Data Collector : DXJA      DB2s : DB2A      DB2B      DB2C      DB2D      +
Data classes   : *
Data space size : 20 MB
Trace data sets : 1      Total size: 10 (cyls)      Status: OK

Select one of the following options. Then press Enter.

_ 1. Subsystems      - Specify the subsystems supported by this output group
  2. Data classes   - Specify the IFCIDs supported by this output group
  3. Data space     - Specify the size of the data space used to buffer data
  4. Trace data sets - Specify the trace data sets used by this output group

F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left      F11=Right     F12=Cancel

```

Use the following options to define output groups:

1. Use **Subsystems** to define a Data Collector (optional) and the DB2 subsystems from which data will be captured and stored by this output group.
2. Use **Data classes** to select the groups of DB2 records (IFCIDs) that will be collected and stored by this output group.
3. Use **Data space** to specify the size of the data space that will be used to capture and process data for this output group.
4. Use **Trace data sets** to allocate the data sets that will be used to save the data collected by this output group.

# Subsystems

Use the Output Group Subsystems panel (Figure 3-22) to specify the following values:

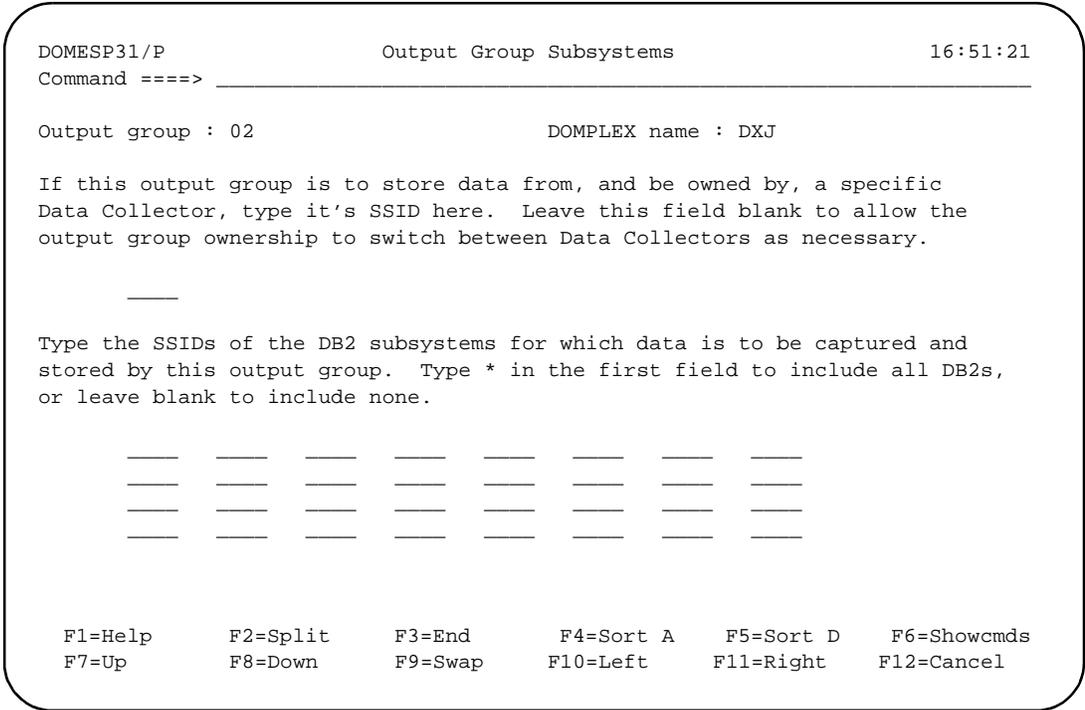
- a Data Collector as the owner of the output group (optional)

If you do not specify a Data Collector, the output group will be owned by the Data Collector that is currently monitoring the specified DB2s.

- the DB2 subsystems from which data is to be captured and stored by this output group

You can specify up to 32 DB2 subsystems or use an asterisk (\*) in the first field to capture and store data from all active DB2s that are connected to the owner Data Collector.

**Figure 3-22 Output Group Subsystems Panel (DOMESP31)**



If you specify a Data Collector, only the data from DB2s running on the same system as that Data Collector is captured and stored by this output group. If you specify DB2s running on a different system, they are ignored.

If you do not specify a Data Collector, ensure that the DB2s you specify are running on the same system. The output group can be owned by only one Data Collector at a time, and that Data Collector can capture data only from DB2s that are running on the same system.

### Example

The DOMPLEX is configured as follows:

<b>MVS Image</b>	<b>Data Collector</b>
SYS1	DOM1
SYS2	DOM2

#### Example 1

DOM1 is specified as the owner of output group 01 (OG-01).

An asterisk is specified in the first DB2 field.

DOM1 is started and it finds DB2A and DB2B running on SYS1. DOM1 begins monitoring DB2A and DB2B and captures and stores the data in OG-01.

DB2A is brought down and restarted on SYS2. DOM1 stops collecting data from DB2A for OG-01.

DB2C is started on SYS1. DOM1 begins monitoring DB2C and collects and stores the data in OG-01.

#### Example 2

No Data Collector is specified as the owner of OG-01. DB2A and DB2B are specified in the DB2 fields.

DOM1 and DOM2 are started. DOM1 finds DB2A and DB2B running on SYS1. DOM1 begins monitoring DB2A and DB2B, assumes ownership of OG-01, and stores the data collected from DB2A and DB2B there.

DB2A and DB2B are brought down and restarted on SYS2. DOM1 can no longer monitor them. Ownership of OG-01 is released. DOM2 finds and begins monitoring DB2A and DB2B, assumes ownership of OG-01, and stores the captured data there.

**Warning!** Be careful when no Data Collector is specified. If, in example 2, DB2A was brought down and restarted on SYS2, but DB2B remained active on SYS1, DOM1 would retain ownership of OG-01 and the data from DB2A would no longer be collected by OG-01.

## Data Classes

Use the Output Group Data Classes panel (Figure 3-23) to specify the IFCIDs that will be collected and stored by this output group. The IFCIDs are grouped by class. See page 3-25 for a list of valid data classes that outlines the IFCIDs in detail.

**Figure 3-23 Output Group Data Classes Panel (DOMESP32)**

```

DOMESP32/P                               Output Group Data Classes                               LINE 1 OF 18
Command =====> _____ Scroll ==> CSR_

Output group : 01                               DOMPLEX name : DOMDXJ

Select one or more of the following classes to specify the IFCIDs that
will be captured and stored by this output group.

  Sel Class   IFCIDs
-----
___ * DB2ACCT  DB2 ACCOUNTING (3, 239 )
___ * DB2SYS   DB2 STATISTIC EVENTS (1,2,31,54,102-107,172,196,199,202-210,23
___ * DB2AUDIT DB2 AUDIT (140-146, 312)
___ * DB2PERF  DB2 PERFORMANCE (ALL OTHER DB2 IFCIDs)
___ * DCSYSTEM DATA COLLECTOR EVENTS (241,245)
___ * XBMCACHE XBM CACHE RECORDS (33)
___ * XBMDS    XBM DATASET RECORDS (35)
___ * OPERTUNE OPERTUNE EVENTS (17)
___ * AMSYSTEM ACTIVITY MONITOR DB2 STATS, EVENTS (241-2,245-6,251-2,254-6)
___ * APSTACC  APPTUNE STMT ACCOUNTING, INTERVAL (6, 307, 318)
___ * APSTACCS APPTUNE STMT ACCOUNTING SUMMARIES (308-310)
___ * APSTMT   APPTUNE STMT TEXT,HOST VARS,EXCEPTIONS (4,5,10,11)
___ * APERROR  APPTUNE ERRORS (7)
___ * APOBJECT APPTUNE OBJECT SUMMARY (8, 9)
___ * PAHIST   POOL ADVISOR HISTORY (072,082,086,089,095,096,097,098,099)
___ * APINDEX  APPLICATION PERFORMANCE INDEX EVENTS (316,317)
___ * APBIND   APPLICATION PERFORMANCE BIND EVENTS (315)
___ * MVDBACC  MVDB2/DC ACCOUNTING SUMMARY RECORDS (350,351,352)

```

You can specify as many classes as you want. Type **S** or **/** in the selection field beside all classes to be included. An asterisk in the **Sel** field indicates a selected data class.

**Note:** If SQL Explorer is the only System and SQL Performance product installed, the output group collects only DCSYSTEM data.

## Data Space

Use the Output Group Data Space panel (Figure 3-24) to specify the size of the data space where the records captured for this output group will be stored and processed before being written to the trace data sets.

**Figure 3-24 Output Group Data Space Panel (DOMESP33)**

```

DOMESP33/P                               Output Group Data Space                               11:34:35
Command =====> _____

Output group : 01                               DOMPLEX name : DXJ2

Specify the size of the data space that will be allocated to capture and
process instrumentation data for this output group.  The recommended size
depends on the types of data assigned to this group and the load expected
for all types combined.  Refer to online Help for recommendations and
other tips.

The size is specified in megabytes in the range 0 to 2000.  A value of zero
causes all IFCIDs assigned to this group to be immediately discarded.

                                Data space size: __20 Mb    (0-2000)

F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap    F10=Left   F11=Right   F12=Cancel

```

The size is specified in megabytes. Valid values are any number in the range **0–2000**. If **0** is specified, all records that are assigned to this output group are discarded. The default is **20**.

## Trace Data Sets

Use the Output Group Data Sets panel (Figure 3-25) to allocate and manage the trace data sets that will be used by this output group.

**Note:** If SQL Explorer is the only product installed, there will be one trace data set created by the Installation Assistant to store DCSYSTEM records. If you create other data sets, SQL Explorer will ignore them.

**Figure 3-25** Output Group Data Sets Panel (DOMESP34)

```

DOMESP34/P                               Output Group Data Sets                               LINE 1 OF 1
Command =====> _____ Scroll ==> CSR_

Output group : 01                          DOMPLEX name : DXJ2
To add a trace data set, type the name in the "New trace data set" field.
Action codes:  A -Allocate    D -Delete    R -Remove

New trace data set _____

Act  Data set name                               Size
---  -----                               ----  ---
_   RDHDXJ.DXJ2.DXJA.TRACE001                    10    DATA

F1=Help    F2=Split    F3=End    F4=Sort A    F5=Sort D    F6=Showcmds
F7=Up      F8=Down     F9=Swap   F10=Left    F11=Right   F12=Cancel

```

Each time you specify a new data set, two data sets are actually allocated:

- One data set contains the trace records. The suffix *.DATA* is added to the data set name that you specify.
- The other data set contains the index entries that are used to keep track of the trace data. The suffix *.RBAT* (relative byte address table) is added to the data set name that you specify.

The size that you specify for the data set is automatically divided between the two data sets, with one cylinder of space allocated to the RBAT data set for every 704 cylinders that are allocated to the DATA data set.

You can allocate a maximum of 16 pairs of data sets (one DATA and one RBAT in each pair) for each output group that is defined. These data sets should not be shared between DOMPLEXes. The number and size of data sets that you need depends on the volume and the type of DB2 activity being collected.

To prevent data loss, you need at least two data sets for each output group. When one data set is full, data can be written to the second data set while the system submits a copy job for the first data set.

**Note:** Trace data sets are VSAM data sets that use the control interval access method. The IDCAMS REPRO utility cannot be used to copy trace data sets.

The Output Group Data Sets panel lists all trace data sets that are assigned to this output group in alphabetical order. The name of the DOMPLEX is displayed at the top of the panel.

To add a new data set to the list, type a unique data set name that uses the standard MVS naming conventions, and press **Enter**. You can use a maximum of 39 characters. The remaining five characters are reserved for the suffix that is added by the product.

If the data set exists, it is located and added to the list. If it does not exist, the Data Set Allocate panel (Figure 3-26) is displayed.

The following information is reported for each listed data set:

- name of the data set

If the data set name is longer than 39 characters, the name is truncated.

- size of the data set in cylinders
- status of the data set:

<b>UNDEFINED</b>	The data set does not exist.
<b>EMPTY</b>	The data set exists, but contains no data.
<b>DATA</b>	The data set exists and contains data.
<b>ERROR/DATA</b>	An error was encountered trying to allocate the DATA component.
<b>ERROR/RBA</b>	An error was encountered trying to allocate the RBAT component.

The Trace Data Sets panel provides access to the Data Set Allocate panel (Figure 3-26).

## Data Set Allocate Panel

Use the Output Group Data Set Allocate panel (Figure 3-26) to allocate the data sets and add them to the output group. The names of the DATA and RBAT components are displayed. You can change these names on this panel (for example, to conform with naming conventions at your site).

**Warning!** If you change these data set names, ensure that there are no data sets with duplicate names. When you return to the Output Group Data Sets panel (Figure 3-25 on page 3-35), only the first 39 characters of the name of the DATA component are displayed. If you allocate multiple data sets that begin with the same 39 characters, the correct full data set names are used, but you will not be able to tell the difference between them by viewing that panel.

After the data sets are allocated, the names cannot be changed.

**Figure 3-26 Output Group Data Set Allocate Panel (DOMESPTA)**

```

DOMESPTA/P                               Output Group Data Set Allocate                               11:26:24
Command ====> _____

Output Group : 01                          DOMPLEX name : DXJ2

Specify the appropriate information to complete the allocation request.

Trace data set name . . . RDHDXJ3.OG01.TRACE.DATA_____
Trace data set index name. RDHDXJ3.OG01.TRACE.RBAT_____
Space (total) . . . . . _100      (Cylinders, minimum=100, maximum=2000)
Volume serial . . . . . VOL090    (For SMS, "*" or blanks are allowed)
Storage class . . . . . _____ (SMS-managed allocation,blanks permitted)

Select one of the following options. Then press Enter.

_ 1. Allocate the data sets
  2. Cancel the request

F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left      F11=Right     F12=Cancel

```

Type the specifications for the data sets, and select option **1 (Allocate the data sets)**. If you decide to cancel your request (option 2), the data set is added to the list of trace data sets for this DOMPLEX with a status of **UNDEFINED**.

When you allocate the data sets, the messages resulting from the IDCAMS DEFINE command are displayed (see Figure 3-27). You can use the scrolling keys (**F7** and **F8**) to browse through these messages.

**Figure 3-27 Output from IDCAMS Panel (DOMEBRSN)**

```

DOMEBRSN/P                                     LINE 1 OF 34
Command ====>  DOMEPTA/P                       Output Group Data Set _ Scroll ====> Allo

IDCAMS  SYSTEM SERVICES                        TIME: 11:28:0

DEFINE CLUSTER( -
NAME(RDHDXJ3.OG01.TRACE.DATA                   ) -
VOL( VOL000) /* STORCLAS(                       ) */ -
CYL( 100) -
FSPC(0 0) -
SHR(3 3) -
CISZ(4096) RECSZ(4089 4089) -
BUFSP(98304) -
NIXD SPEED NWCK NERAS RUS ) -
DATA( -
NAME(RDHDXJ3.OG01.TRACE.DATAD                   ) )
IDC0508I DATA ALLOCATION STATUS FOR VOLUME DEV090 IS 0
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0

IDC0002I IDCAMS PROCESSING COMPLETE. MAXIMUM CONDITION CODE WAS 0
IDCAMS  SYSTEM SERVICES                        TIME: 11:28:0
F1=Help      F2=Split      F3=End        F4=Sort A    F5=Sort D    F6=Showcmds
F7=Up        F8=Down       F9=Swap      F10=Left    F11=Right    F12=Cancel

```

---

---

# Chapter 4 VTAM Router Profiles

This chapter applies only to ACTIVITY MONITOR. If ACTIVITY MONITOR is not installed at your site, you can ignore this chapter.

This chapter describes the VTAM Router Profiles that are used to define the VTAM Routers that are used to access ACTIVITY MONITOR through VTAM without the use of TSO and ISPF. The following topics are included:

Introduction . . . . .	4-2
Navigation . . . . .	4-2
VTAM Router Profile Administration Panel . . . . .	4-3

# Introduction

VTAM Routers apply only to ACTIVITY MONITOR. If ACTIVITY MONITOR is not installed at your site, you can ignore this chapter.

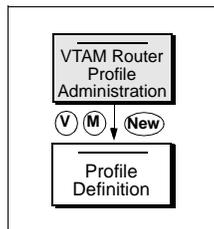
VTAM Router Profiles are used to define the VTAM Routers that are used to access AM through VTAM without the use of TSO and ISPF. This profile limits the number of concurrent users of a VTAM Router and defines the procedure name used to start the router.

The VTAM Router operates as a separate address space and specifications in the VTAM Router Profile affect the address space.

## Navigation

Figure 4-1 illustrates the flow of VTAM Router Profile panels.

**Figure 4-1** VTAM Router Administration Navigation



# VTAM Router Profile Administration Panel

The VTAM Router Profile Administration panel (Figure 4-2) provides access to existing VTAM Router Profiles and is the starting point for creating new VTAM Router Profiles.

**Figure 4-2 VTAM Router Profile Administration Panel (DOMEPRFV)**

```

DOMEPRFV/P                VTAM Router Profile Administration                LINE 1 OF 2
Command =====> _____ Scroll =====> CSR_

To add a profile, type the name in the "New profile" field, and/or type one
or more action codes.  Then press Enter.
  V -View      M -Modify      D -Delete      C -Copy

New profile _____

Act Name      Description                               Last change date      Changed by
-----
_  AMAPPL     SAMPLE AM VTAM ROUTER APPLID      1998-08-18 11:13     BMCSftwr
_  DXJ       DIANNE'S VTAM ROUTER              1998-08-24 15:17     RDHDXJ3

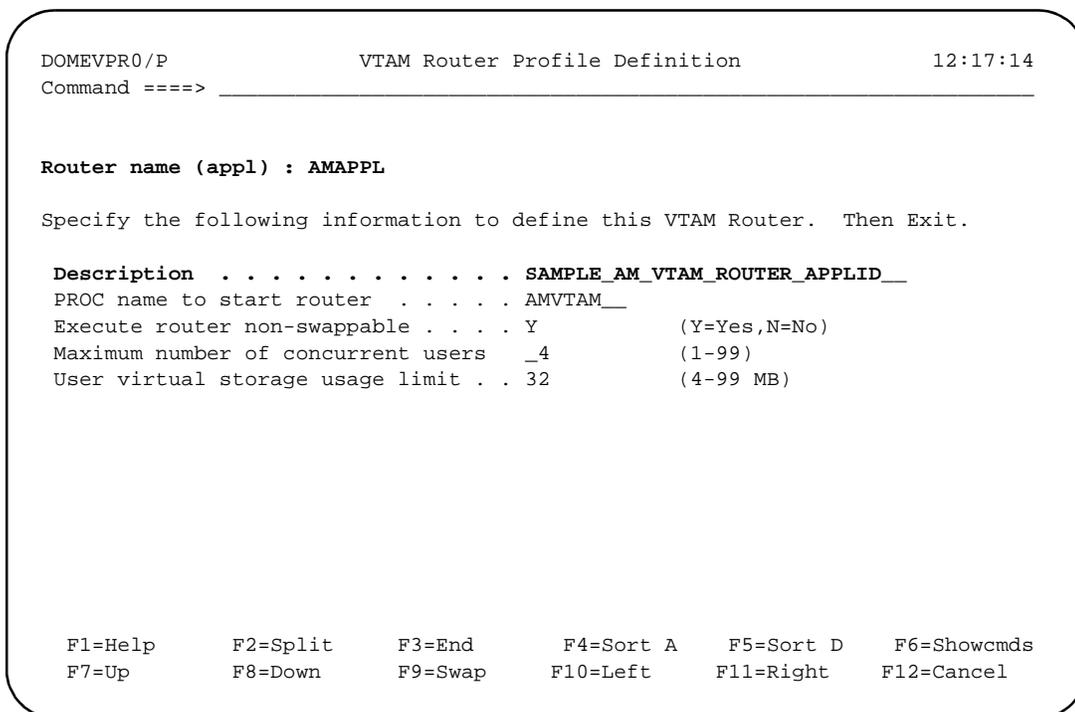
F1=Help      F2=Split      F3=End        F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap       F10=Left       F11=Right      F12=Cancel

```

The VTAM Router Profile Administration panel displays a list of all VTAM Router Profiles in alphabetical order. If there are more profiles 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 VTAM Router Profile Definition panel is displayed (Figure 4-3 on page 4-4).

**Figure 4-3 VTAM Router Profile Definition Panel (DOMEVPR0)**



The name of the VTAM Router Profile and its description are displayed at the top of the panel (highlighted in Figure 4-3). If it is a new profile, the description is blank until you specify a new description.

---

---

# Chapter 5      **Global Options and Installation Data Sets**

This chapter describes the System and SQL Performance products global options and the data sets that are created at installation. The following topics are included:

Viewing and Changing Global Options .....	5-2
Viewing Installation Data Sets .....	5-3
Changing Installation Data Sets .....	5-4

The System and SQL Performance products global options are a set of values that determine how the products are configured. You can tailor these values to suit your site. The installation data sets are created when the product is installed.

## Viewing and Changing Global Options

Use the Global Options panel (Figure 5-1) to display or change the global parameters that affect all users and procedures that use the same STATUS VSAM data set.

The Global Options panel is accessed by selecting option 4 on the Administration menu.

**Figure 5-1 Global Options Panel (DOMESIP1)**

```

DOMESIP1/P                               Global Options                               12:38:53
Command =====> _____

The following are global parameters that affect all users and procedures
using the same STATUS VSAM data set.
  Would you like to change these values now? . . . N      (Y=Yes, N=No)

Enforce security via DB2 authorization table . . : N      (Y=Yes, N=No)
Authorized for DB2 commands. . . . . : Y      (Y=Yes, N=No)
Authorized for MVS commands. . . . . : Y      (Y=Yes, N=No)
Set Data Collector userid from procedure name : N      (Y=Yes, N=No)
Automatically convert trace data sets . . . . : N      (Y=Yes, N=No)
Use hiperspaces for report record staging . . . : Y      (Y=Yes, N=No)
Translate all panels to upper case . . . . . : N      (Y=Yes, N=No)
Site panel language identifier . . . . . : E      (E=English, J=Japanese)
Site date formatting style option . . . . . : U      (U=USA, E=Europe, I=ISO)
Site decimal formatting style option . . . . . : U      (U=USA, E=Europe)
Site IDCAMS module name . . . . . : IDCAMS
Site work file DASD unit name . . . . . : SYSDA
Last changed on 2003-11-10 14:55:13 by user BMCSftwr .

F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left      F11=Right     F12=Cancel

```

**Note:** The following fields apply only to ACTIVITY MONITOR, APPTUNE, and Application Performance:

- Enforce security via DB2 authorization table
- Authorized for DB2 commands
- Authorized for MVS commands

The field **Translate all panels to upper case** does not apply to SQL Explorer-specific reports and panels or Explain reports. It does apply to panels shared by SQL Explorer with other System and SQL Performance products.

To change these parameters, type **Y** next to the question **Would you like to change these values now?** and press **Enter**. When you are finished changing the values, press **F3** (End). The changes that you make will take effect on the next recycle of the Data Collector.

If the Global Options were locked during installation, you are not allowed to change any values on this panel. In that case, only the user ID specified by the installer is allowed to change the Global Options. See the **Last changed** message at the bottom of the panel for the user ID that last modified these values.

## Viewing Installation Data Sets

You can access the Installation Data Sets panel by selecting option **5** on the Administration menu.

Use the Installation Data Sets panel (Figure 5-2) to view the names of the data sets that are created at installation. You cannot make any changes from this panel.

**Figure 5-2 Installation Data Sets Panel (DOMESIP2)**

```

DOMESIP2/P                               Installation Data Sets                               10:53:15
Command =====> _____

Help data set name . . . . . : DOM.V4R1.HELP
Status data set name . . . . . : DOM.V4R1.STATUS
Security data set name . . . . . : DOM.V4R1.SECURITY
User profile data set name . . . : DOM.V4R1.PROFILE
Customization data set name . . : DOM.V4R1.CUSTOM
Dialog load library . . . . . : DOM.V4R1.LOAD
Data Collector load library . . : DOM.V4R1.LOAD
Archive directory data set . . . : DOM.V4R1.COPYDIR

F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap     F10=Left   F11=Right   F12=Cancel

```

This panel displays the data set names that are specified in the options module. If JCL DD statements are used to override these data set names, this panel does not reflect the names of the data sets that are actually being used.

## Changing Installation Data Sets

You can change the installation data sets by editing member DOM\$OPTS in the CNTL data set. DOM\$OPTS is composed of the following parameters:

- CUSTOM= *data set name*
- DATACOL= *data set name*
- DIALOG= *data set name*
- HELP= *data set name*
- PROFILE= *data set name*
- SECURITY= *data set name*
- STATUS= *data set name*
- COPYDIR= *data set name*

To change these data sets, you must have the proper RACF authority to update the load module library. Each time you change one or more of these options, you must reassemble and relink the options module by running the JCL in the DOM\$OPTS member of the CNTL data set.

The changes that you make do not take effect until the Data Collector and Report Manager are recycled.

---

---

# Chapter 6 Diagnostic and Maintenance Procedures

This chapter contains instructions to assist you to apply 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:

Zap Maintenance . . . . .	6-2
Applying a SUPERZAP . . . . .	6-2
Removing a SUPERZAP . . . . .	6-3
Viewing Zap Maintenance . . . . .	6-4
Diagnostic Procedures . . . . .	6-5
Producing a Dump . . . . .	6-5
VTAM Buffer Trace . . . . .	6-8
Reporting Problems . . . . .	6-9

## Zap Maintenance

Occasionally you might be asked by BMC Software Customer Support to apply corrective maintenance to a product in the form of a zap (also known as a SUPERZAP). Zaps are intended to temporarily resolve problems until the next maintenance tape is available. Zaps that are issued between maintenance tapes are incorporated into the next maintenance tape as permanent source code changes.

### Applying a SUPERZAP

Member #DOMZAP in the CNTL data set contains sample JCL (see Figure 6-1) that invokes the IBM utility AMASPZAP to apply a SUPERZAP.

**Figure 6-1**      **DOMZAP JCL**

```
//DOMZAP JOB (ACCT), 'APPLY AM ZAP',           <== MODIFY
//          MSGCLASS=X,                       <== CHECK
//          CLASS=A                           <== CHECK
//*
//*          #DOMZAP -- APPLY ZAPS
//*
//*-----> CHANGE:  ?BMC-HLQ?      = DATA COLLECTOR HIGH-LEVEL QUALIFER
//*
//*-----> ADD ZAP CONTROL STATEMENTS FOLLOWING THE ZAP1.SYSUT1 DD STATEMENT
//*
//ZAP      PROC
//*-----
//*      STEP # 1 :  GENERATE TEMPORARY DATA SET FROM ZAP INPUT
//*-----
//*
//ZAP1     EXEC PGM=IEBGENER
//SYSUT2   DD DISP=(NEW,PASS), DSN=&&ZAP, UNIT=SYSDA, SPACE=(TRK,(1,1))
//SYSIN    DD DUMMY
//SYSPRINT DD SYSOUT=*
//*
//*-----
//*      STEP # 2 :  USE AMASPZAP SERVICE AID TO APPLY SUPERZAP
//*-----
//*
//*      APPLY ZAP
//*
//ZAP2     EXEC PGM=IMASPZAP
//SYSPRINT DD SYSOUT=*
//SYSLIB   DD DISP=SHR, DSN=?BMC-HLQ?.LOAD
//SYSIN    DD DISP=(OLD,PASS), DSN=&&ZAP
//*
//          PEND
//*
//*      INVOKE ZAP PROCEDURE
//*
//          EXEC ZAP
//ZAP1.SYSUT1 DD *
.....ZAP COMMANDS GO HERE.....
//*
```

When you apply a SUPERZAP, an entry is added to the Maintenance Table Zap Display (see Figure 6-2 on page 6-4).

## Removing a SUPERZAP

To remove a SUPERZAP, modify the original zap SYSIN statements as follows.

1. Manually change each VER to REP and each REP to VER. Ensure that all VERs precede all REPs.
2. Remove the CHECKSUM statement.
3. Run the #DOMZAP job.

This procedure removes the zap and the entry on the Maintenance Table Zap Display.

## Viewing Zap Maintenance

You can view a list of all zaps that are currently applied to the products by viewing the Maintenance Table Zap Display.

The Maintenance Table Zap Display is accessed by selecting option **6** from the Administration menu.

### Maintenance Table Zap Display

The Maintenance Table Zap Display (Figure 6-2) shows the level and release date of the product on your system. In addition, the following information about each zap that has been applied is displayed:

<b>Zap Number</b>	APAR number of the zap
<b>Module</b>	name of the module affected by the zap
<b>Csect</b>	name of the CSECT in the affected module
<b>Version</b>	version number of the zap

**Figure 6-2 Maintenance Table Zap Display (DOMEZAPT)**

```

DOMEZAPT/P           Maintenance Table Zap Display           LINE 0 OF 0
Command =====> _____ Scroll =====> CSR_

Maintenance level : 4.1.00 11/03
 Zap Number      Module      Csect      Version
-----
  PP7156         DOMMAINT   DOMMAINT   01

F1=Help      F2=Split    F3=End     F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap    F10=Left    F11=Right   F12=Cancel

```

ACTIVITY MONITOR, APPTUNE, and Application Performance users can use the LOG command to print the panel.

# Diagnostic Procedures

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 or to trace VTAM Router activity (ACTIVITY MONITOR only).

## Producing 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
- VTAM Router (ACTIVITY MONITOR only)
- Exception Facility ACTIVITY MONITOR only)
- 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:

```
*nn,IEE094D SPECIFY OPERAND(S) FOR DUMP COMMAND
```

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

### To Dump the Data Collector Writer Data Space

---

```
R nn, JOBNAME=(region-job-name),
   DSPNAME=('region-job-name'.WDSPssid),
   SDATA=(RGN, SUM, CSA, SQA, LSQA),
   END
```

---

- *nn* is the WTOR number.
- *region-job-name* is the name of the MVS region that you want to dump (for example, DC01PROC).
- '*region-job-name*' [single quotes (') required] is the name of the data space owner that you want to dump.
- *ssid* is the Data Collector subsystem ID.

### To Dump the APPTUNE Data Space

---

```
R nn, JOBNAME=(db2-ssidDBM1),
   DSPNAME=('db2-ssidDBM1'.IOD@db2-ssid),
   SDATA=(RGN, SUM, CSA, SQA, LSQA),
   END
```

---

- *nn* is the WTOR number.
- *region-job-name* is the name of the MVS region that you want to dump (for example, DB2PDBM1).
- '*db2-ssidDBM1*' [single quotes (') required] is the name of the owner of the data space you want to dump.
- *IOD@db2-ssid* is the name of the APPTUNE data space.

Example: DSPNAME=('DB2PDBM1' IOD@DB2P),

### To Dump a Pool Advisor Data Space

```
R nn, JOBNAME=( region-job-name ),
   DSPNAME=( 'db2-ssidDBM1'.PMD@db2-ssid ),
   DSPNAME=( 'region-job-name'.PMDBdb2-ssid ),
   DSPNAME=( 'region-job-name'.db2-ssid@PMD ),
   SDATA=( RGN, SUM, CSA, SQA, LSQA ),
   END
```

- *nn* is the WTOR number.
- *region-job-name* is the name of the MVS region that you want to dump (for example, DB2PDBM1).
- *'db2-ssidDBM1'* [single quotes (') required] is the name of the owner of the data space that you want to dump.
- *'region-job-name'* [single quotes (') required] is the name of the data space region that you want to dump.
- *PMD@db2-ssid* is the name of the DB2 data collection data space.
- *PMDBdb2-ssid* is the name of the getpage data space.
- *db2-ssid@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)`

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 web site at <http://www.bmc.com/support.html> and click on **FTP Reference Manual for Customers**. The site contains complete instructions for compressing and sending the dump.

## VTAM Buffer Trace

**Note:** The VTAM Buffer Trace applies only to ACTIVITY MONITOR

Before starting a VTAM trace, ensure that the Generalized Trace Facility (GTF) is started on your system. If you need to start GTF, sample JCL is provided in SYS1.PROCLIB(GTF), or you can check the procedures for starting GTF traces at your site. GTF parameters for a VTAM trace are specified by the SYSLIB DD statement. The data set that is referenced by this statement should contain the following GTF parameters:  
TRACE=USR,RNIO.

Use the following MVS command to start tracing buffer flows for the ACTIVITY MONITOR VTAM Router application:

```
F NET,TRACE,TYPE=BUF,ID=appl-id
```

where *appl-id* is the VTAM APPLID that is used to log on to AM.

Use the following MVS command to stop a VTAM trace:

```
F NET,NOTRACE,TYPE=BUF,ID=appl-id
```

Stop the GTF procedure, and use IEBGENER to copy the GTF data set to tape or cartridge. The SYSUT2 data set should be specified with the following DCB attributes:

```
DCB=(RECFM=VBA,LRECL=264,BLKSIZE=4096)
```

---

## 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.

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, etc. at the time of the problem.
5. What version and maintenance levels are you using of the following:
  - Application Performance for DB2
  - SmartDBA System Performance for DB2
  - ACTIVITY MONITOR for DB2
  - APPTUNE for DB2
  - Pool Advisor for DB2
  - SQL Explorer for DB2
  - MAINVIEW for DB2
  - DB2
  - MVS/OS/390
  - 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 SUPERZAPs 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](http://www.bmc.com)
- E-mail address: [support@bmc.com](mailto:support@bmc.com)

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---

# Chapter 7 Collecting and Filtering SQL Data for Reporting

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

This chapter describes the options for the collection of data in APPTUNE and Application 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 . . . . .	7-2
Navigation . . . . .	7-3
Collection Options . . . . .	7-4
Types of Data Collected . . . . .	7-4
Sampling. . . . .	7-5
Summarization Options . . . . .	7-6
Filter Profiles . . . . .	7-8
Creating a Filter Profile . . . . .	7-8
Using Filter Profiles . . . . .	7-14
Changing Collection Options Dynamically . . . . .	7-15
Select Analysis Interval Report . . . . .	7-17
APPTUNE/Application Performance Records . . . . .	7-19
Filtering Examples . . . . .	7-19
Starting and Stopping Data Collection for a Specific Identifier . . . . .	7-20
Collecting Exception Data . . . . .	7-22

# Overview

In APPTUNE and Application Performance, the collection of data, the summarization of data, and the filtering of data are specific to DB2. Each DB2 that can be monitored is defined in the DOMPLEX Profile. To set collection, summarization, and filtering options for a DB2, go to the DB2 definition in the DOMPLEX Profile (see Figure 7-1 on page 7-3).

## Collection Options

You can choose the types of data that will be collected by each DB2. Accounting data is always collected, by default. You can also choose to collect any or all of the following types of data:

- buffer pool
- lock
- I/O optimization
- SQL error
- SQL text
- object
- fetch

You can also choose to collect only a sample of data to reduce the volume of data collected if overhead is an issue.

## Summarization Options

By default, data is summarized and recorded for each unique DB2 subsystem, plan, program (and version), section, and statement number. You can also choose to summarize by the following values:

- user ID
- connection ID
- correlation ID
- dynamic SQL text
- workstation user ID

## Filter Profiles

The collection options set in the DOMPLEX Profile apply to all programs and plans that are run on the DB2. You can use filter profiles to set collection and summarization options that apply to specific combinations of programs, plans, users, DB2s, and correlation IDs.

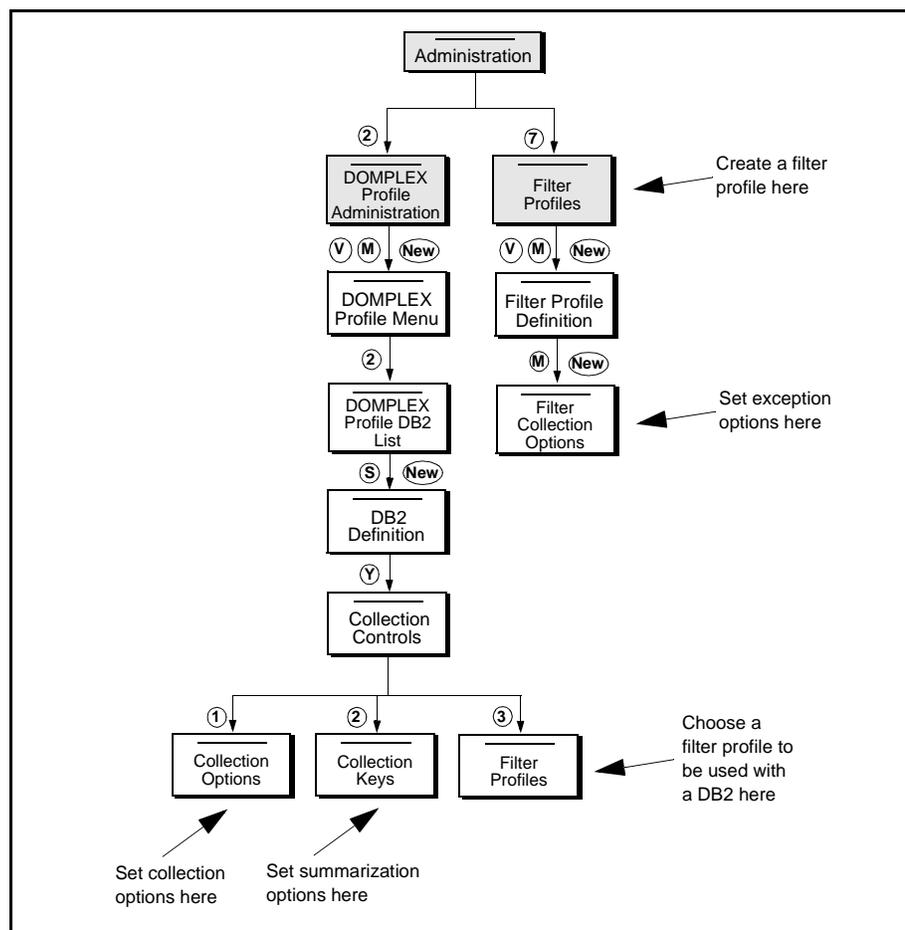
You can also choose to collect SQL text only for SQL calls that exceed thresholds you set for elapsed and/or CPU times (exception processing) and you can choose whether to collect host variable values for the exception records.

You can specify only one filter profile to be used with each DB2 at a time.

## Navigation

Figure 7-1 illustrates the navigation to the administrative functions that are used to set the collection and summarization options and to create and use filter profiles.

**Figure 7-1 Data Collection and Filtering Navigation**



## Collection Options

Collection options for a DB2 are set on the Data Collection Options panel in the DB2 definition (Figure 7-2). These options are global; they apply to the collection of data for all programs and plans run on that DB2 subsystem (unless they are overridden with a filter profile).

**Figure 7-2 Data Collection Options Panel (DOMESPQ1)**

```

DOMESPQ1/I                               Data Collection Options                               08:33:04
Command =====>

DB2 subsystem name : DEAL                  DOMPLEX name : DOCUMENT

The following values control the types of data collected for this DB2.

Accounting data . . . . . : Y      (Always on )
Buffer pool data . . . . . : Y      (Y=Yes,N=No)
Lock data . . . . . : Y      (Y=Yes,N=No)
SQL text data . . . . . : Y      (Y=Yes,N=No,S=Static,D=Dynamic)
I/O optimization data . . . . . : Y      (Y=Yes,N=No)
SQL error data . . . . . : Y      (Y=Yes,N=No)
Object data . . . . . : Y      (Y=Yes,N=No,S=Static,D=Dynamic)
Fetch data . . . . . : Y      (Y=Yes,N=No)

The following value controls whether data is to be sampled.

Sample data . . . . . : N      (Y=Yes,X=Extrapolate,N=No)

Caution: See HELP for comments and recommendations.
F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left     F11=Right     F12=Cancel

```

## Types of Data Collected

Accounting data is always collected. You can choose to collect any or all of the following types of data:

- buffer pool
- lock
- I/O optimization
- SQL error
- SQL text
- object

**Note:** Collecting object data can add 1 to 5% additional overhead to using the product. Additional internal and external storage will be required to keep the data.

- fetch

## Sampling

If overhead is an issue, you can also choose to collect only a sample of data to reduce the volume of data collected. When sampling is active, data is collected intermittently for a total of one quarter of elapsed time. This reduces the amount of data that is collected (and the overhead associated with data collection) by approximately 75%, while still providing a representative sample of data for evaluation.

Another option is to sample with extrapolation. When you sample with extrapolation, 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.

## Summarization Options

Summarization options for a DB2 are set on the Collection Key Options panel in the DB2 definition (Figure 7-3). By default, the product takes the raw data from DB2 and reduces the volume by summarizing the data for each unique instance of the following identifiers:

- DB2 subsystem
- plan name
- program (and version)
- section
- statement number

**Figure 7-3 Collection Key Options Panel (DOMESPQ2)**

```

DOMESPQ2/I                               Collection Key Options                               09:42:42
Command =====> _____

DB2 subsystem name : DBD3                      DOMPLEX name : ASQA320

By default, data is summarized and recorded for each unique DB2
subsystem, plan, program (and version), section, and statement number.
Specify the following additional summarization keys to be used.  Then Exit.

Collect data for each unique user ID . . . . Y (Y=Yes,N=No,S=Static,D=Dynamic)
Collect data for each unique connection . . Y (Y=Yes,N=No)
Collect data for each unique correlation ID Y (Y=Yes,N=No)
Collect data for each unique workstation ID N (Y=Yes,N=No)

Collect data for each unique dynamic stmt. . Y (Y=Yes,N=No,H=Host Var Only)
Granular dynamic stmt detail . N (Y=Yes,N=No)

Caution: See HELP for comments and recommendations.

F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap     F10=Left    F11=Right   F12=Cancel

```

Data is not automatically collected and summarized by user, connection ID, correlation ID, dynamic SQL text, or workstation user ID: when there are many unique values for these reduction keys, the volume of summarized data can increase significantly.

When user, connection, correlation, and workstation user ID data are not summarized, all values for these identifiers are reported together in one entry on reports with **N/P** (not present) displayed instead of the individual values.

As it can be useful at times to collect this information, options on this panel can be used to cause collection and summarization of user, connection, correlation, dynamic text, and workstation user ID data. Summarizing by these values increases the number of summary records (BMC IFCIDs 307 and 310). If you are collecting object data, summarizing by these values also increases the number of object records (BMC IFCID 008). Think carefully about the impact this could have on the volume of data at your site before you decide to collect this data.

If you are interested in the activity for specific users, consider using the summarization option for user ID in a filter profile instead of incurring the overhead of collecting data for all users.

**Note:** In the SAP environment, the options for collecting connection and correlation ID data will actually cause collection of work process number and work process ID. If you want to collect work process numbers, specify **Y** for **Collect data for each unique connection**. If you want to collect work process IDs, specify **Y** for **Collect data for each unique correlation ID**.

See “Dynamic SQL Statement Analysis” on page A-5 for summarization guidelines in environments using applications that result in large volumes of dynamic SQL.

## Filter Profiles

By default, data is collected for *all* programs and plans that execute on a DB2 subsystem. You can use filter profiles to set tailored collection options for specific identifiers or to stop data collection.

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

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

## Creating a Filter Profile

Filter profiles can be created and used only by users with administration authority. You access the filter profiles function by selecting option 7 on the Administration Menu. The Filter Profiles panel (Figure 7-4) is displayed.

**Figure 7-4 Filter Profiles Panel (ASQEFILP)**

```

ASQEFILP/P                               Filter Profiles                               LINE 1 OF 16
Command =====> _____ Scroll ==> CSR_

Select a filter profile with an action code from the list below.
To add a profile, complete the "New profile" fields, then press Enter.

Actions:  V -View      M -Modify      D -Delete      C -Copy

New profile name  PROFILE1  Description  EXAMPLE_PROFILE_____

Act  Name          Description                                     +----- Last changed -----+
-----+-----+-----+-----+-----+-----+-----+
-    BOB3          _____                                     User   Date       Time
-    DIANNE        SAMPLES                                     RDARNO2 2001-12-05 11:57
-    TESTFILT     TEST USERID FILTER                         RDHDXJ3 2001-03-07 15:23
-    F200195      USERID ONLY                                RDHCJM3 1998-12-21 15:14
-    F230860      _____                                     RDHHMP4 2001-09-12 14:46
-    F264539      UPPER CASE ONLY CORRID                     RDHRXD 2001-05-01 17:00
-    GEORGE        SAMPLES                                     RDHHMP4 2001-09-07 14:43
-    HANKP002     JUST A TEST                                 ROHGXS 2001-01-26 12:20
-    JHWDB2A      TEST DB2A 93098                             RDHHMP2 1999-02-11 17:54
-    JHWT1        JOHN W - TEST PROFILE 1                     RDHJHW 1998-09-30 10:19
-    _____                                     JHW     2000-09-05 15:35

```

Use the Filter Profiles panel to create a new profile or to select an existing profile for modification. Type a name and description for the new filter profile, and press **Enter**. The Filter Profile Definition panel (Figure 7-5) is displayed.

**Figure 7-5 Filter Profile Definition Panel (ASQEFIL0)**

```

ASQEFIL0/I                               Filter Profile Definition                               LINE 1 OF 1
Command =====> _____ Scroll =====> CSR_

Filter profile name : NEWFILT      Description : _____

By default, data is collected for all programs and plans that execute on a
DB2 subsystem. Filters can be used to either stop data collection or to
set tailored collection options for specific identifiers.

To add a new entry to the filter complete the appropriate fields and press
Enter. See HELP for more information and wildcard rules.

Program  PROGA_____  PLAN  _____  User ID  ACCT*____  DB2  _____
Corr ID  _____

Action: D -Delete entry from the list      M -Modify collection parameters

                                     Collect Keys  +  Exceptions  +
Act Program  Plan      User ID  Corr ID  DB2  A T O S U D G  Elapsed CPU  H
-----

```

### Collection Identifiers

Use the Filter Profile Definition panel to specify collection options that will apply to a specific combination of the following identifiers:

- program
- plan
- user ID
- correlation ID
- DB2

**Note:** To create a filter profile for use in the SAP environment, type *server* values in the **Program** field and type *work process ID* values in the **Corr ID** field.

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

In the example in Figure 7-5, an entry is being created that will apply only to a program called PROGA and to all users with IDs starting with ACCT running on a DB2 called DB2A.

When you are finished with the specification, press **Enter** to display the Filter Collection Options panel (Figure 7-6).

**Figure 7-6 APPTUNE Filter Collection Options Panel (ASQEFIL1)**

```

ASQEFIL1/I                               Filter Collection Options                               14:52:32
Command ====> _____

Filter profile name : NEWFILT      Description : _____

Program : PROGA      Plan : 3*      User ID : ACCT*      DB2 : DEAL
Corr ID : *

Specify the desired collection, summarization, and exception options to be
applied to the filter criteria above. Then Exit. See HELP for more information.

Collect accounting data . . . . . Y (Y-Yes,N-No)
Collect SQL text . . . . . Y (Y-Yes,N-No,S-Static,D-Dynamic)
Collect object data . . . . . N (Y-Yes,N-No,S-Static,D-Dynamic)
Sample data . . . . . N (Y-yes,N-No,X-Extrapolate)

Summarize by user ID . . . . . Y (Y-Yes,N-No)
Summarize by DYNAMIC SQL text . . . . . H (Y-Yes,N-No,H=Host Var Only)
  Granular dynamic stmt detail. . . . . N (Y-Yes,N-no)

Exception - elapsed time threshold . . . . . __0 (0 - 9999 seconds)
Exception - CPU time threshold . . . . . __1 (0 - 9999 milliseconds)
Collect HVAR values for Exceptions . . . . . N (Y-Yes,N-No)

```

Use the Filter Collection Options panel to define the collection options for the specific combination of program, plan, user, correlation ID, and DB2 that you specified previously.

### Collection Options

If you specify **Y** for **Collect accounting data**, data is collected for each of the following types of data for which **Y** is specified on the Data Collection Options panel in the DB2 definition in the DOMPLEX Profile (Figure 7-2 on page 7-4):

- accounting
- buffer pool
- lock
- I/O optimization
- SQL error

- fetch

If you specify **N** for **Collect accounting data**, none of this data is collected. This is the only way to turn off collection of accounting data.

You must specify **Y** for **Collect accounting data** if you want to specify **Y** for any other option on this panel.

The setting for **Collect SQL text** on this panel overrides the setting on the Data Collection Options panel.

You can include object data *only* if object data is already being collected (**Y**, **S**, or **D** was specified for **Object data** on the Data Collection Options panel (Figure 7-2 on page 7-4) when the Data Collector was started). If you specify **Y** for **Collect object data** and object data is not already being collected, this setting is ignored.

If you specify **Y** for **Sample data**, the volume of data collected is reduced. When sampling is active, data is collected intermittently for a total of one quarter of elapsed time. This reduces the amount of data that is collected (and the overhead associated with data collection) by approximately 75%, while still providing a representative sample of data for evaluation.

If you specify **X** for **Sample data**, 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.

### Summarization Options

Summarization values that are specified on this panel override the settings on the Data Collection Options panel.

You can specify **Y** for **Summarize by DYNAMIC SQL text** *only* if **Y**, **S**, or **D** is specified for **Collect SQL text**.

Specify **H** for **Summarize by DYNAMIC SQL text** if you want to summarize by dynamic SQL text *only* if the SQL text includes host variable values.

If you specify **Y** for **Granular dynamic stmt detail**, data will be collected in detail for each unique dynamic SQL statement and separated into its call type components (for example, PREPARE, OPEN, FETCH, and CLOSE).

If you specify **N** for **Granular dynamic stmt detail**, data will be collected and summarized by each unique dynamic SQL statement. The SQL CURSOR call type represents an aggregation of OPEN activity, all FETCH activity, and CLOSE activity for a unique dynamic SQL statement.

## Exceptions

Exception processing allows you to identify, collect, categorize, and analyze only your poorest-performing SQL statements. You can choose to collect SQL text only for SQL calls that exceed thresholds you set for elapsed and/or CPU times. An exception record will be created for each call that exceeds these thresholds (BMC IFCID 004) and you can use the exception reports to examine the data. Exception processing is governed by the following rules:

- You must be collecting SQL text to specify any value other than **0** in the exception time fields (**Y**, **S**, or **D** in the **Collect SQL text** field).
- If you specify **0** for both the elapsed and CPU thresholds, no exception processing takes place and no exception records are created.
- If you specify **0** for one threshold and a non-zero value for the other threshold, exception records will be created only for the threshold with a non-zero value. For example, if the **Exception - elapsed time threshold** is set to **10** seconds and the **Exception - CPU time threshold** is set to **0**, SQL text records (BMC IFCID 005) and exception records (BMC IFCID 004) are created *only* when an SQL call exceeds 10 seconds of *elapsed* time.
- You must be collecting SQL text and set at least one of the **Exception - elapsed time threshold** or the **Exception - CPU time threshold** to a value greater than **0** to specify **Y** for **Collect HVAR values for Exceptions**.

**Note:** If host variable values are not displayed, verify that the collection options are set properly. Host variable values are not available for PREPARE and FETCH statements.

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 value records (BMC IFCID 010), if specified. The number of SQL text records (BMC IFCID 005) that are produced will depend on the values that you specify for the elapsed and CPU time thresholds. The lower these values are, the more text records will be produced.

Figure 7-7 is an example of a filter profile with three sets of filtering criteria.

**Figure 7-7 Example Filter Profile Definition (ASQEFIL0)**

```

ASQEFIL0/I           Filter Profile Definition           LINE 1 OF 1
Command =====> _____ Scroll ==> CSR_

Filter profile name : NEWFILT      Description : _____

By default, data is collected for all programs and plans that execute on a
DB2 subsystem.  Filters can be used to either stop data collection or to
set tailored collection options for specific identifiers.

To add a new entry to the filter complete the appropriate fields and press
Enter.  See HELP for more information and wildcard rules.

Program: _____      PLAN: _____      User ID: _____      DB2: _____
Corr ID: _____

Action: D -Delete entry from the list      M -Modify collection parameters

Act Program  Plan      User ID  Corr ID  DB2  Collect Keys  + Exceptions  +
-----
_  PROGA     *        ACCT*   *       DB2A Y Y N N Y N N      0      0  N
_  PROGB     *        ACCT*   *       DB2A Y Y N N Y N N      0      0  N
_  PROGC     *        *       *       DB2A Y Y N N Y Y Y      30     0  Y

```

## Using Filter Profiles

Product administrators can create any number of filter profiles to use under different conditions. To use a filter profile, you need to associate the filter profile with a DB2 in the DB2 definition in the DOMPLEX Profile. This association is made on the Filter Profiles panel (Figure 7-8).

**Figure 7-8 Filter Profiles Panel (ASQEFILS)**

```

ASQEFILS/P                               Filter Profiles                               LINE 1 OF 16
Command =====> _____ Scroll ==> CSR_

DB2 subsystem name   : DEAL                               DOMPLEX name : DOCUMENT
Current profile name :
Filter at startup? . . Y (Y-Yes,N-No)

To activate filter processing, specify "Y" to "Filter at startup" and select
the filter profile to be used for this combination of DB2 and its associated
Data Collector. Then Exit.

Actions:  S -Select a profile V -View profile definition

----- Last changed -----
Act  Name      Description                               User      Date      Time
-----
_    BOB3
S    DIANNE     SAMPLES                               RDHDXJ3   2001-03-07 15:23
_    TESTFILT   TEST USERID FILTER                       RDHCJM3   1998-12-21 15:14
_    F200195    USERID ONLY                               RDHHMP4   2001-09-12 14:46
_    F230860
_    F264539    UPPER CASE ONLY CORRID                     RDHHMP4   2001-09-07 14:43
_    GEORGE     SAMPLES                               ROHGXS    2001-01-26 12:20

```

Type **Y** in the **Filter at startup?** field, and select the filter profile that you want to use from the list. This filter profile will take effect the next time that the Data Collector is cycled.

**Note:** When you select a filter profile, ensure that it is compatible with the DB2 to which it is being defined. If a different DB2 is specified in the filter profile, no data will be collected.

---

# Changing Collection Options Dynamically

Whenever you change the collection, summarization, and filtering options that are described in this chapter, the changes that you make do not take effect until the Data Collector is recycled.

APPTUNE and Application Performance provide a number of commands that you can use to modify these options dynamically. The following commands affect data collection:

- **APPON**  
to start data collection when data collection is not started automatically or after data collection has been stopped by an APPOFF command
- **APPOFF**  
to stop data collection
- **APPCOLL**  
to dynamically change the collection options for a DB2 without stopping the Data Collector
- **APPFILT**  
to dynamically change the filter profile for a DB2 without stopping the Data Collector
- **APPKEYS**  
to dynamically change the summarization options for a DB2 without stopping the Data Collector
- **APPRESET**  
to write the data in the reduction table to the trace data set, and to start a new interval
- **APPSTAT**  
to view the status of data collection
- **APPSAMP**  
to dynamically start or stop data collection sampling, reducing the volume of data collected while maintaining a representative sample of data

See the *APPTUNE User Guide* for a complete explanation of the APPTUNE commands, or use online Help (type `HELP command-name` on the **Command** line and press **Enter**).

The following examples illustrate some of the ways you can use these commands to modify data collection. 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.

**Example**

To disable an active filter profile (that is, revert to the collection and summarization options in the DB2 definition):

```
/dc-ssid APPFILT db2-ssid DISABLE
```

**Example**

To disable an active filter profile, then re-enable the same filter profile, while causing the APPRESET command to be issued, flushing out the reduction table and creating a new reporting interval:

```
/dc-ssid APPFILT db2-ssid DISABLE  
/dc-ssid APPFILT db2-ssid ENABLE
```

**Example**

To disable an active filter profile and enable another filter profile after flushing out the reduction table and creating a new reporting interval:

```
/dc-ssid APPFILT db2-ssid DISABLE  
/dc-ssid APPFILT db2-ssid new-filter
```

**Example**

To modify an active filter profile and re-enable it after flushing out the reduction table and creating a new reporting interval:

```
/dc-ssid APPFILT db2-ssid DISABLE
```

Modify the filter profile definition, then issue the following command:

```
/dc-ssid APPFILT db2-ssid filter-name
```

**Caution**

Be very careful when using filter profiles. When previously collected data is reported, you need to know which filter profile (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 profile and DOMPLEX Profile panels.

See Appendix A, “Using APPTUNE with ERP Applications.” for filtering guidelines in environments using applications that result in large volumes of dynamic SQL.

## Select Analysis Interval Report

Use the Select Analysis Interval report (Figure 7-9) to select the interval or intervals for your reporting session. This report also indicates whether a filter profile was in effect when the data was collected.

**Figure 7-9 Select Analysis Interval Report (SQMINTVD)**

```

ASQEQRPN/P                               View a Report                               LINE 1 OF 54
Command =====> _____ Scroll ==> CSR_

BMCSftwr.SQMINTVD  --  SELECT ANALYSIS INTERVAL  --  10/22 16:39:16
Source : IODM-ACTIVE  Intvl : 12/24 05:05 - UNLIMITED  More:  +
-----
Select a single interval or a range of intervals. Type "S" beside a single
interval or beside the first and last intervals in the range, and press
Enter.  Exit when finished.

Actions: F-Filtering Criteria

+-----+-----+-----+-----+-----+-----+-----+-----+
| Begin | Interval | Duration | DB2 | Number | Active |
|-----+-----+-----+-----+-----+-----+-----+
| 10/22/02 | 16:12:41 | 10/22/02 | 16:39:16 | 00:26:35 | DFG1 | 4 | Y | Y | N |
| 10/22/02 | 13:15:01 | 10/22/02 | 16:39:16 | 03:24:15 | DBD2 | 1 | N | Y | N |
| 10/22/02 | 12:51:07 | 10/22/02 | 13:15:00 | 00:23:53 | DBD2 | 3 | N | Y | N |
| 10/22/02 | 00:00:01 | 10/22/02 | 12:41:50 | 12:41:49 | DBD2 | 3 | Y | Y | N |
| 10/21/02 | 23:23:41 | 10/22/02 | 00:00:00 | 00:36:19 | DBD2 | 0 | Y | Y | N |
| 10/21/02 | 23:21:45 | 10/21/02 | 23:23:40 | 00:01:55 | DBD2 | 3 | Y | Y | N |
| 10/21/02 | 23:00:01 | 10/21/02 | 23:20:30 | 00:20:29 | DBD2 | 0 | Y | Y | N |
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 **Filter Active** field indicates whether a filter profile 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 profiles, the data might not be meaningful.

If no filter profile is active when the data is collected, the collection and summarization options from the DOMPLEX Profile are used. If you are reporting on intervals for multiple DB2 subsystems, remember that the collection options can differ from one DB2 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 7-10) is displayed.

Use the Associated Filter Criteria report to see the filters that were in effect when the data in the interval was collected.

**Figure 7-10 Associated Filter Criteria Report (SQMINTVF)**

```

ASQEQRPW/I                               View a Report                               LINE 1 OF 6
Command =====> _____ Scroll =====> CSR_

BMCSftwr.SQMINTVF  -- ASSOCIATED FILTER CRITERIA  --      10/08 13:20:34
Source : P410-ACTIVE  Intvl : 12/24 05:05 - UNLIMITED
-----
DEA1 - Start:  10/08/03 13:13:39 End:  10/08/03 13:20:34 Entries:      0

Program  Plan      UserID  CorrId  DB2      + Collect Keys + + Exceptions +
-----+-----+-----+-----+-----+ A T O S U D G Elapsed CPU H
*        *        *        *        *        N N N N N N N .000000 .0000 N
    
```

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).

# APPTUNE/Application Performance Records

When you view APPTUNE and Application Performance reports, you are looking at the records that are created as a result of the collection options that are specified while APPTUNE/Application Performance is monitoring DB2.

The following records are created when the corresponding collection option is active:

- summary data—accounting, buffer pool, locking, and I/O optimization data (BMC 307, BMC 308, BMC 309, BMC 310)
- statement data—SQL text and SQL errors (BMC 005 and BMC 007)
- object data (BMC 008 and BMC 009)
- exceptions (BMC 004, BMC 010, and BMC 011)
- filters (BMC 318)

## Filtering Examples

The examples in this section should help you to understand the overall effect of filtering in APPTUNE and should provide a starting point for you to set collection, summarization, and filtering options that will achieve the results you intend.

Following is a summary of all settings that affect the records that are displayed in reports:

- Data Collection Options (set in the DB2 definition in the DOMPLEX Profile):

---

Accounting data . . . . .	: Y	(Always on )
Buffer pool data . . . . .	Y	(Y=Yes,N=No)
Lock data . . . . .	Y	(Y=Yes,N=No)
SQL text data . . . . .	Y	(Y=Yes,N=No,S=Static,D=Dynamic)
I/O optimization data . . . . .	Y	(Y=Yes,N=No)
SQL error data . . . . .	Y	(Y=Yes,N=No)
Object data . . . . .	N	(Y=Yes,N=No,S=Static,D=Dynamic)
Fetch data . . . . .	Y	(Y=Yes,N=No)

---

- Collection Key Options (set in the DB2 definition in the DOMPLEX Profile):

---

```

Collect data for each unique user ID . . . . N (Y=Yes,N=No,S=Static,D=Dynamic)
Collect data for each unique connection . . N (Y=Yes,N=No)
Collect data for each unique correlation ID N (Y=Yes,N=No)
Collect data for each unique workstation ID N (Y=Yes,N=No)
Collect data for each unique dynamic stmt. . N (Y=Yes,N=No,H=Host Var Only)
Granular dynamic stmt detail . . . . . N (Y=Yes,N=No)
    
```

---

- Filter Profiles (set in Administration):

---

```

Collect accounting data . . . . . Y (Y=Yes,N=No)
Collect SQL text . . . . . Y (Y=Yes,N=No,S=Static,D=Dynamic)
Collect object data . . . . . Y (Y=Yes,N=No,S=Static,D=Dynamic)
Sample data . . . . . N (Y=Yes,N=No,X=Extrapolate)

Summarize by user ID . . . . . Y (Y=Yes,N=No)
Summarize by DYNAMIC SQL text . . . . . Y (Y=Yes,N=No,H=Host Var Only)
Granular dynamic stmt detail . . . . . N (Y=Yes,N=No)

Exception - Elapsed time threshold . . . . . ___0 (0 - 9999 seconds)
Exception - CPU time threshold . . . . . ___0 (0 - 9999 milliseconds)
Collect HVAR values for Exceptions. . . . . N (Y=Yes,N=No)
    
```

---

## Starting and Stopping Data Collection for a Specific Identifier

By default, data is collected for all programs and plans that execute on a DB2 subsystem. You can use filter profiles to change those defaults.

### Collecting Data for a Specific Plan

To collect data for a specific plan, excluding all other data, set the following options:

- Set the Data Collection Options to collect all data:

---

```

Accounting data . . . . . : Y (Always on )
Buffer pool data . . . . . Y (Y=Yes,N=No)
Lock data . . . . . Y (Y=Yes,N=No)
SQL text data . . . . . Y (Y=Yes,N=No,S=Static,D=Dynamic)
I/O optimization data . . . . . Y (Y=Yes,N=No)
SQL error data . . . . . Y (Y=Yes,N=No)
Object data . . . . . Y (Y=Yes,N=No,S=Static,D=Dynamic)
Fetch data . . . . . Y (Y=Yes,N=No)
    
```

---

- Leave all Collection Key Options set to N (the default).

- Create the following filter profile:

Act	Program	Plan	User ID	Corr ID	DB2	Collect	Keys	+	Exceptions	+					
---	---	---	---	---	---	A	T	O	S	U	D	G	Elapsed	CPU	H
—	*	PLANX	*	*	*	Y	Y	Y	N	Y	Y	N	0	0	N
—	*	*	*	*	*	N	N	N	N	N	N	N	0	0	N

The first entry in the filter profile specifies that, whenever PLANX is run (regardless of program, user, DB2, or correlation ID), the following data will be collected:

- (A) accounting data—BMC IFCIDs 007, 307, 308, 309, and 310
- (T) SQL text data—BMC IFCID 005
- (O) object data—BMC IFCIDs 008 and 009

Only data that is collected for PLANX will be summarized by dynamic SQL text (D) and user ID (U). These two options increase the number of BMC IFCID 307 records that are collected.

The second entry specifies that no data will be collected for any other data that is run (except for PLANX):

- (A) no accounting data—BMC IFCIDs 007, 307, 308, 309, and 310
- (T) no statement data—BMC IFCID 005
- (O) no object data—BMC IFCIDs 008 and 009

**Note:** Remember that setting **Collect accounting data** to N in a filter profile is the only way to turn off collection of accounting data, which is always set to Y in the Data Collection Options.

No exception records will be created (because both thresholds are set to 0), and no host variable records will be created (BMC IFCIDs 004, 010, and 011).

## Stopping Collection for a Specific Plan

To stop collecting data for a specific plan, ignoring all other data, set the following options:

- Set the Data Collection Options to collect all data:

Accounting data . . . . .	: Y	(Always on )
Buffer pool data . . . . .	Y	(Y=Yes,N=No)
Lock data . . . . .	Y	(Y=Yes,N=No)
SQL text data . . . . .	Y	(Y=Yes,N=No,S=Static,D=Dynamic)
I/O optimization data . . . . .	Y	(Y=Yes,N=No)
SQL error data . . . . .	Y	(Y=Yes,N=No)
Object data . . . . .	Y	(Y=Yes,N=No,S=Static,D=Dynamic)
Fetch data . . . . .	Y	(Y=Yes,N=No)

- Leave all Collection Key Options set to N (the default).
- Create the following filter profile:

Act	Program	Plan	User ID	Corr ID	DB2	Collect Keys +					Exceptions +			
						A	T	O	S	U	D	G	Elapsed	CPU
_	*	PLANX	*	*	*	N	N	N	N	N	N	0	0	N

The only entry in this filter profile specifies that whenever PLANX is run, regardless of the circumstances, no data will be collected (even accounting data).

No exception records will be created (because both thresholds are set to 0) and no host variable records will be created (BMC IFCIDs 004, 010, and 011).

The same technique can be used to start and stop collection for any other single identifier (program, user ID, DB2, correlation ID) or combination of identifiers.

## Collecting Exception Data

Exception processing allows you to identify, collect, categorize, and analyze only your poorest-performing SQL statements. You can choose to collect SQL text only for SQL calls that exceed thresholds that you set for elapsed time, CPU time, or both.

One exception record (BMC IFCID 004) is created for each SQL call (PREPARE, OPEN, FETCH, and CLOSE, for example) that exceeds one or both of these thresholds.

An SQL text record (BMC IFCID 005) is created for each exception record. If host variable values are requested, a host variable record (BMC IFCID 010) is created for each host variable that is defined in the corresponding exceptional SQL statement.

## Collecting Data when Both Thresholds Are Set to Non-Zero Values

The following example creates a filter profile that collects SQL text and host variable data whenever an SQL call exceeds a threshold set for either elapsed time or CPU time:

- Set the Data Collection Options to collect all data:

```
Accounting data . . . . . : Y (Always on )
```

```

Buffer pool data . . . . . Y (Y=Yes,N=No)
Lock data . . . . . Y (Y=Yes,N=No)
SQL text data . . . . . Y (Y=Yes,N=No,S=Static,D=Dynamic)
I/O optimization data . . . . . Y (Y=Yes,N=No)
SQL error data . . . . . Y (Y=Yes,N=No)
Object data . . . . . Y (Y=Yes,N=No,S=Static,D=Dynamic)
Fetch data . . . . . Y (Y=Yes,N=No)
    
```

- Leave all Collection Key Options set to N (the default).
- Create the following filter profile:

Act	Program	Plan	User ID	Corr ID	DB2	Collect Keys	Exceptions
						A T O S U D G	Elapsed CPU
—	*	*	*	*	*	Y Y Y N Y Y N	10 50

The only entry in this filter profile specifies that whenever any SQL call that is executed on any monitored DB2 exceeds *either* 10 seconds of elapsed time *or* 50 milliseconds of CPU time, the following data will be collected:

- (A) accounting data—BMC IFCIDs 007, 307, 308, 309, and 310
- (T) SQL text data—BMC IFCID 005
- (O) object data—BMC IFCIDs 008 and 009
- exception data—BMC IFCIDs 004 and 011
- (H) host variable data—BMC IFCID 010

The following data is collected for all SQL calls that *do not* exceed either threshold:

- (A) accounting data—BMC IFCIDs 007, 307, 308, 309, and 310
- (O) object data—BMC IFCIDs 008 and 009

### Collecting Exception Data for a Specific Plan

The following example creates a filter profile that collects SQL text and host variable data for a specific plan whenever an SQL call in that plan exceeds a threshold set for elapsed time:

- Set the Data Collection Options to collect all data:

```

Accounting data . . . . . : Y (Always on )
Buffer pool data . . . . . Y (Y=Yes,N=No)
Lock data . . . . . Y (Y=Yes,N=No)
SQL text data . . . . . Y (Y=Yes,N=No,S=Static,D=Dynamic)
I/O optimization data . . . . . Y (Y=Yes,N=No)
SQL error data . . . . . Y (Y=Yes,N=No)
Object data . . . . . Y (Y=Yes,N=No,S=Static,D=Dynamic)
Fetch data . . . . . Y (Y=Yes,N=No)
    
```

- Leave all Collection Key Options set to N (the default).

- Create the following filter profile:

Act	Program	Plan	User ID	Corr ID	DB2	Collect Keys	Exceptions	
						A T O S U D G	Elapsed CPU	H
—	*	PLANX	*	*	*	Y Y Y N Y Y N	10	0 Y
—	*	*	*	*	*	N N N N N N N	0	0 N

The first entry in this filter profile specifies that whenever any SQL call in PLANX (executed on any monitored DB2) exceeds 10 seconds of elapsed time, the following data will be collected:

- (A) accounting data—BMC IFCIDs 007, 307, 308, 309, and 310
- (T) SQL text data—BMC IFCID 005
- (O) object data—BMC IFCIDs 008 and 009
- exception data—BMC IFCIDs 004 and 011
- (H) host variable data—BMC IFCID 004

Only data that is collected for PLANX will be summarized by dynamic SQL text (D) and user ID (U). These two options increase the number of BMC IFCID 307 records that are collected.

If the threshold is not exceeded, only accounting data (A) and object data (O) will be collected for PLANX (that is, no SQL text data (BMC IFCID 005) and no exception data (BMC IFCIDs 004 and 011)).

The second entry in this filter profile excludes all other data.

---

---

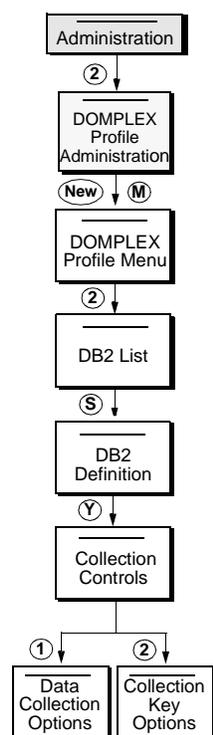
# Appendix A Using APPTUNE with ERP Applications

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

This appendix provides some guidelines for filtering data and reducing data by the SQL text for dynamic SQL. It is designed for sites that are using ERP applications (PeopleSoft, for example) that result in large volumes of dynamic SQL. This appendix contains the following sections:

Data Collection . . . . .	A-2
Dynamic SQL Statement Analysis . . . . .	A-5
Low-Level Dynamic SQL Statement Analysis . . . . .	A-6
Medium-Level Dynamic SQL Statement Analysis . . . . .	A-9
High-Level Dynamic SQL Statement Analysis . . . . .	A-12
Processing with Low-Level Dynamic SQL Statement Analysis . . . . .	A-14
Processing with Medium-Level Dynamic SQL Statement Analysis . . . . .	A-15
Processing with High-Level Dynamic SQL Statement Analysis . . . . .	A-16
Setting the Options . . . . .	A-18
Filter Profiles for ERP Applications . . . . .	A-24
Filtering Recommendations . . . . .	A-26

# Data Collection



By default, data is collected for all programs and plans that execute on a DB2 subsystem. The following types of data are collected:

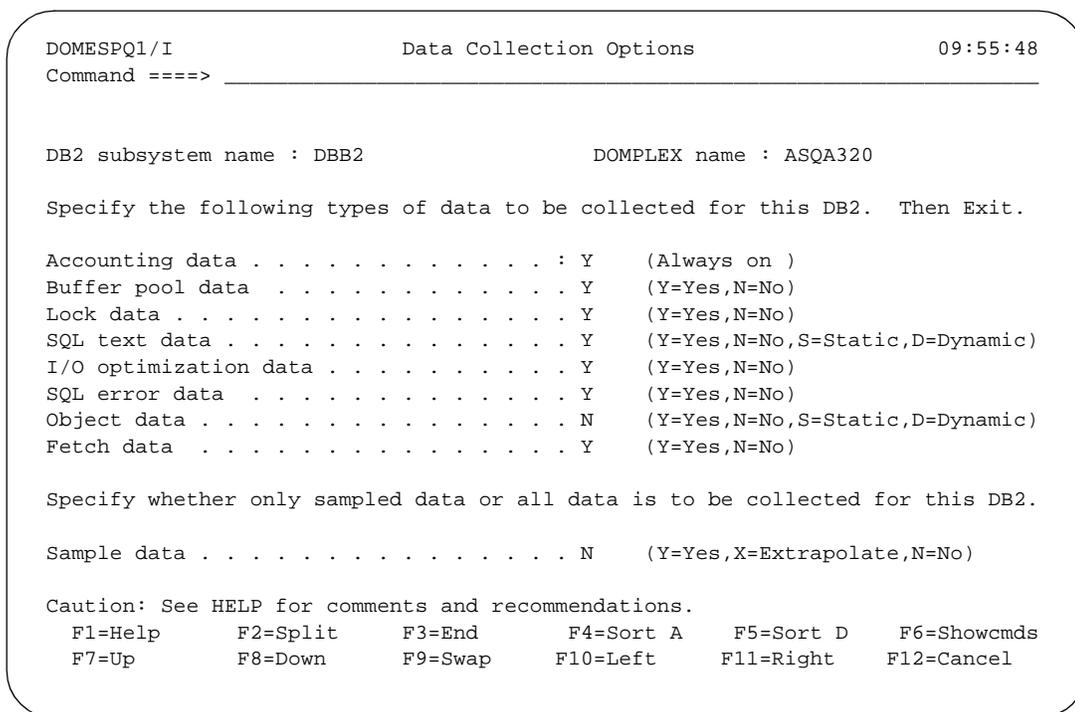
- accounting
- buffer pool
- lock
- SQL text
- I/O optimization
- SQL error

Object data is not collected by default because collecting object data can add additional overhead to using the products and can require additional internal and external storage to keep the data.

You can change the default collection options for a specific DB2 by modifying the values on the Data Collection Options panel (Figure A-1) in the DOMPLEX Profile.

The values that you set will take effect the next time that the Data Collector monitoring the DB2 is cycled and will remain in effect each subsequent time the Data Collector is started, until the values on this panel are changed.

**Figure A-1 Data Collection Options Panel (DOMESPQ1)**



By default, the raw data is taken from DB2 and the volume is reduced by summarizing the data for each unique instance of

- DB2 subsystem
- plan name
- program (and version)
- section
- statement number

Data is not automatically summarized by user, connection ID, correlation ID, dynamic SQL text, or workstation user ID. When there are many unique values for these reduction keys, the volume of summarized data can increase significantly. The increase in volume can

- affect the time that it takes to generate reports
- increase the data that is being written to the trace data sets
- affect storage use

You can change the default summarization options for a specific DB2 by modifying the values on the Collection Key Options panel (Figure A-2 on page A-4) in the DOMPLEX Profile.

The values that you set will take effect the next time that the Data Collector monitoring the DB2 is cycled and will remain in effect each subsequent time the Data Collector is started until the values on this panel are changed.

**Note:** In the SAP environment, the options for collecting *connection* and *correlation ID* data will actually cause collection of *work process number* and *work process ID*. If you want to collect work process numbers, specify **Y** for **Collect data for each unique connection**. If you want to collect work process IDs, specify **Y** for **Collect data for each unique correlation ID**.

**Figure A-2 Collection Key Options Panel (DOMESPQ2)**

```
DOMESPQ2/P                               Collection Key Options                               11:00:59
Command =====> _____

DB2 subsystem name : DEAL                   DOMPLEX name : DOCUMENT

By default, data is summarized and recorded for each unique DB2
subsystem, plan, program (and version), section, and statement number.
Specify the following additional summarization keys to be used.  Then Exit.

Collect data for each unique user ID . . . Y (Y=Yes,N=No,S=Static,D=Dynamic)
Collect data for each unique connection . . Y (Y=Yes,N=No)
Collect data for each unique correlation ID Y (Y=Yes,N=No)
Collect data for each unique workstation ID Y (Y=Yes,N=No)

Collect data for each unique dynamic stmt. . Y (Y=Yes,N=No,H=Host Var Only)
Granular dynamic stmt detail . N (Y=Yes,N=No)

Caution: See HELP for comments and recommendations.
```

# Dynamic SQL Statement Analysis

When your application software issues numerous dynamic SQL requests that reuse the same SQL text, APPTUNE allows you to explore the performance of each unique piece of SQL text (instead of aggregating measurements without regard to the SQL text). This process, known as SQL text summarization, aggregates the cost of identical dynamic SQL statements. SQL text summarization enables you to determine the total and average cost of repetitive dynamic SQL statements. This makes the dynamic SQL measurement function similar to the static SQL measurement function allowing for an easier comparison.

There are three levels of dynamic SQL statement analysis:

## **Low-Level Dynamic SQL Statement Analysis**

aggregates performance data for each call type (PREPARE, OPEN, FETCH, and CLOSE) for each unique occurrence of the reduction keys for that call (for example, plan, program, section, pre-compiler statement number) during an interval. This provides accurate identification of badly performing programs but not the specific dynamic SQL statement (although a list of the dynamic SQL statements executed by that program is provided).

This option typically increases the number of SQL text records written to the APSTMT trace data sets and decreases the number of accounting records written to the APSTACC trace data sets.

## **Medium-Level Dynamic SQL Statement Analysis**

aggregates performance data for the OPEN, FETCH(ES), and CLOSE into a call type referred to as CURSOR. This provides accurate identification of badly performing dynamic SQL statements.

This option typically reduces the number of SQL text records written to the APSTMT trace data sets and increases the number of accounting records written to the APSTACC trace data sets.

## **High-Level Dynamic SQL Statement Analysis**

aggregates performance data for the DESCRIBE, PREPARE, OPEN, FETCH(ES), and CLOSE into their own call type. This provides accurate identification of the badly performing call type of the badly performing dynamic SQL statements (which is the most straightforward comparison between dynamic SQL call types and static SQL call types).

This option will increase the number of SQL text records written to the APSTMT trace data sets and the number of accounting records written to the APSTACC trace data sets.

The options pertaining to dynamic SQL statement analysis are contained on two panels:

- Collection Key Options panel (DOMESPQ2)
- Filter Collection Options (ASQEFIL1)

## Low-Level Dynamic SQL Statement Analysis

Enabled by setting the summarization options as follows:

```
Collect data for each unique dynamic stmt = N
Granular dynamic stmt detail = N
```

This option provides a low level of detail as it aggregates performance data for each call type (PREPARE, OPEN, FETCH, and CLOSE) for each unique occurrence of the reduction keys for that call (plan, program, section, pre-compiler statement number) during an interval.

Compared to medium-level dynamic SQL statement analysis, this option:

- **Increases** the number of SQL text records written to the APSTMT trace data set because each execution of a dynamic SQL statement results in an SQL text record being written to the APSTMT trace data sets.
- **Decreases** the number of accounting records written to the APSTACC trace data set because an accounting record is created for every call type (PREPARE, OPEN, FETCH, and CLOSE) for each unique occurrence of the reduction keys for that call (plan, program, section, pre-compiler statement number) during an interval.

SQL statement text is available only for the OPEN call type. The SQL STATEMENT ANALYSIS report (SQMCACTX) will list one line for each of the call types and the SQL STATEMENT TEXT report (SQMCACTT) will display the associated SQL text for the OPEN.

Figure A-3 is an example of low-level dynamic SQL statement analysis where the report displays one line for each call type.

**Figure A-3 SQL STATEMENT ANALYSIS Report—One Line for each Call Type**

```

ASQEQRPW/I                               View a Report                               LINE 1 OF 4
Command ====> _____ Scroll ==> CSR_

BMCSftwr.SQMCACTX  -- SQL STATEMENT ANALYSIS (DATA) --      10/15 22:56:01
Source : P410-ACTIVE  Intvl : 10/15 22:54 - UNLIMITED      More: >
-----
  Actions: D-DB2   P-Plan C-ConnID S-SQL Text  H-Header L-CorrID R-Recommend
           G-AppGrp U-User  T-Detail E-SQL Error Q-CatSQL O-Object X-Exception
           A-Average

  Subsys: DFG1  AppGrp:                User:                ConnID:
           Plan:                CorrID:

  Program      Stmt   Call   Sect Stmt  SQL  +----- Total IN-SQL Time -----
              Type   Type   No.  No.  Calls Elapsed      % CPU      %
  -----
+ DSNESM68 DYNAMIC  FETCH      1   183  2140 00:00.04111 69.5% 00:00.03793 69.
+ DSNESM68 DYNAMIC  PREPARE     1   116   10 00:00.01786 30.2% 00:00.01635 30.
+ DSNESM68 DYNAMIC  CLOSE      1   197   10 00:00.00009  0.1% 00:00.00007  0.
+ DSNESM68 DYNAMIC  OPEN      1   190   10 00:00.00007  0.1% 00:00.00007  0.
  
```

Figure A-4 is an example of low-level dynamic SQL statement analysis where the report displays one line for the FETCH, but no SQL text.

**Figure A-4 SQL STATEMENT TEXT Report—One Line for the FETCH—No SQL Text**

```

ASQEQRPN/I                               View a Report                               LINE 1 OF 8
Command ====> _____ Scroll ==> CSR_

BMCSftwr.SQMCACTT  --          SQL STATEMENT TEXT          --      10/15 22:57:53
Source : P410-ACTIVE  Intvl : 10/15 22:54 - UNLIMITED
-----
  Actions for +: T-Detail E-Errors H-Header Q-CatSQL O-Objects
                for *: X-Explain SQL text S-Show full SQL text

  Subsys: DFG1  AppGrp:                User:                ConnID:
           Plan:                CorrID:

  Program      Call   Sect  Stmt  +--- SQL ---+ +- Total IN-SQL Time +-
              Type   No.   No.  Calls Errors Elapsed      CPU      Getpage
  -----
+ DSNESM68  FETCH      1   183   2140     0 00:00.04111 00:00.03793      2175
           Averages: 00:00.00002 00:00.00002      1
  Statement Type: DYNAMIC
  SQL Text not available
  
```

Figure A-5 is an example of low-level dynamic SQL statement analysis where the report displays multiple SQL text lines for the OPEN.

**Figure A-5 SQL STATEMENT TEXT Report—Multiple SQL Text Lines for the OPEN**

```

ASQEQRTN/I                               View a Report                               LINE 1 OF 21
Command ====> _____ Scroll ====> CSR_
BMCSftwr.SQMCACTT  --      SQL STATEMENT TEXT      --      10/15 22:58:54
  Actions for +: T-Detail E-Errors H-Header Q-CatSQL O-Objects
                for *: X-Explain SQL text S-Show full SQL text

Subsys: DFG1   AppGrp:                               User:           ConnID:
                Plan:                               CorrID:

      Call      Sect  Stmt  +--- SQL  ---+ +- Total IN-SQL Time +-
Program Type      No.  No.  Calls Errors Elapsed   CPU           Getpage
-----
+ DSNESM68 OPEN          1   190    10     0 00:00.00007 00:00.00007         0
                        Averages:    00:00.00001 00:00.00001         0
Statement Type: DYNAMIC  +-----

SQL Statement text:   DFG1

Execution Date and Time  User           Sample of Dynamic SQL Text
-----
* 10/15/03 22:54:44.562904 RDHHMP2  SELECT * FROM SYSIBM.SYSPLAN
* 10/15/03 22:54:44.616909 RDHHMP2  SELECT * FROM SYSIBM.SYSPLAN
* 10/15/03 22:54:44.661047 RDHHMP2  SELECT * FROM SYSIBM.SYSPLAN
* 10/15/03 22:54:44.702171 RDHHMP2  SELECT * FROM SYSIBM.SYSTABLESPACE
    
```

## Medium-Level Dynamic SQL Statement Analysis

Enabled by setting the summarization options as follows:

```
Collect data for each unique dynamic stmt = Y (or H)
Granular dynamic stmt detail = N
```

When SQL text summarization is enabled, the product detects when a dynamic SQL statement has been previously executed and does not attempt to rewrite the SQL text statement to the APSTMT trace data sets.

**Note:** If you enable text summarization with option **H**, data will be collected and summarized by each unique dynamic SQL statement only if the SQL text includes host variable values.

When SQL text summarization is enabled, the CURSOR call type represents an aggregation of all OPEN, FETCH, and CLOSE activity for a unique dynamic SQL statement. When CURSOR is reported, OPEN, FETCH, and CLOSE are not reported separately.

Figure A-5 is an example of medium-level dynamic SQL statement analysis where the report displays one PREPARE and two CURSORS.

**Figure A-6 SQL STATEMENT ANALYSIS Report—One PREPARE and Two CURSORS**

```
ASQEQRPW/I                               View a Report                               LINE 1 OF 3
Command =====> _____ Scroll ==> CSR_

BMCSftwr.SQMCCTX  -- SQL STATEMENT ANALYSIS (DATA) --          10/15 23:17:20
Source : P410-ACTIVE  Intvl : 10/15 23:13 - UNLIMITED          More: >
-----
```

Actions: D-DB2 P-Plan C-ConnID S-SQL Text H-Header L-CorrID R-Recommend  
G-AppGrp U-User T-Detail E-SQL Error Q-CatsSQL O-Object X-Exception  
A-Average

```
Subsys: DFG1 AppGrp: User: ConnID:
Plan: CorRID:
```

Program	Stmt Type	Call Type	Sect No.	Stmt No.	SQL Calls	+----- Elapsed	Total %	IN-SQL CPU	Time	----- %
+ DSNESM68	DYNAMIC	CURSOR	1	190	1260	00:00.02121	36.0%	00:00.02024	36.	
+ DSNESM68	DYNAMIC	CURSOR	1	190	900	00:00.01952	33.1%	00:00.01823	32.	
+ DSNESM68	DYNAMIC	PREPARE	1	116	10	00:00.01816	30.8%	00:00.01712	30.	

Figure A-7 is an example of medium-level dynamic SQL statement analysis where the report displays a CURSOR and the SQL text.

**Figure A-7 SQL STATEMENT TEXT Report—a CURSOR and the SQL Text**

```

ASQEQRPN/I                               View a Report                               LINE 1 OF 9
Command =====> _____ Scroll ==> CSR_

BMCSftwr.SQMCACTY  --      SQL STATEMENT TEXT      --      10/15 23:19:53
Source : P410-ACTIVE  Intvl : 10/15 23:13 - UNLIMITED
-----
  Actions for +: T-Detail  E-Errors  H-Header  O-Objects
                for *: X-Explain SQL text

  Subsys: DFG1   AppGrp:                User:                ConnID:
                Plan:                  CorrID:                190

      Sect Stmt +----- SQL -----+ +- Total IN-SQL Time +-
Program  No.  No.  Calls  Open  Fetch  Error  Elapsed   CPU           Getpage
-----
+ DSNESM68   1   190  1260    5  1250    0 00:00.02121 00:00.02024   1270
Call Type: CURSOR                Averages:   00:00.00002 00:00.00002    1
Stmt Type: DYNAMIC                +-----

Dynamic SQL Statement text:
*  SELECT * FROM SYSIBM.SYSPLAN
    
```

Figure A-8 is an example of medium-level dynamic SQL statement analysis where the report displays the PREPARE, but no SQL text.

**Figure A-8 SQL STATEMENT TEXT Report—the PREPARE—No SQL text**

```

ASQEQRPN/I                               View a Report                               LINE 1 OF 8
Command =====> _____ Scroll ==> CSR_

BMCSftwr.SQMCACTT  --      SQL STATEMENT TEXT      --      10/15 23:22:10
Source : P410-ACTIVE  Intvl : 10/15 23:13 - UNLIMITED
-----
  Actions for +: T-Detail  E-Errors  H-Header  Q-CatSQL  O-Objects
                for *: X-Explain SQL text  S-Show full SQL text

  Subsys: DFG1   AppGrp:                User:                ConnID:
                Plan:                  CorrID:

      Call      Sect Stmt +--- SQL ---+ +- Total IN-SQL Time +-
Program  Type   No.  No.  Calls  Errors  Elapsed   CPU           Getpage
-----
+ DSNESM68 PREPARE    1   116    10    0 00:00.01816 00:00.01712   320
                Averages:   00:00.00182 00:00.00171    32
Statement Type: DYNAMIC                +-----

SQL Text not available
    
```

This option typically decreases the number of records written to the APSTMT trace data sets and increases the number of records written to the APSTACC trace data sets.

SQL statement text is available only for the CURSOR call type (which is the reason for the decrease in the number of records written to the APSTMT trace data sets). SQL statement text is available for viewing on the SQL STATEMENT TEXT (SQMCACTY) report.

Compared to low-level dynamic SQL statement analysis, this option:

- **Decreases** the number of SQL text records written to the APSTMT trace data set because only one is created for every unique dynamic statement.
- **Increases** the number of accounting records written to the APSTACC trace data set because an additional accounting record (CURSOR) is created for every unique dynamic SQL statement.

## High-Level Dynamic SQL Statement Analysis

Enabled by setting the summarization options as follows:

```
Collect data for each unique dynamic stmt = Y (or H)
Granular dynamic stmt detail = Y
```

When this option is used, each unique dynamic SQL statement is separated into its call type components (PREPARE, OPEN, FETCH, and CLOSE).

**Note:** If you enable text summarization with option **H**, data will be collected and summarized by each unique dynamic SQL statement only if the SQL text includes host variable values.

Figure A-9 is an example of high-level dynamic SQL statement analysis where the report displays each call type.

**Figure A-9 SQL STATEMENT ANALYSIS Report—Each Call Type**

```
ASQEQRPW/I                               View a Report                               LINE 1 OF 8
Command =====> _____ Scroll ==> CSR_

BMCSftwr.SQMCACTX  -- SQL STATEMENT ANALYSIS (DATA)  --      10/15 23:31:00
Source : P410-ACTIVE  Intvl : 10/15 23:29 - UNLIMITED  More:      >
-----
```

Actions: D-DB2 P-Plan C-ConnID S-SQL Text H-Header L-CorrID R-Recommend  
G-AppGrp U-User T-Detail E-SQL Error Q-CatSQL O-Object X-Exception  
A-Average

Subsys: DFG1 AppGrp: User: ConnID:  
Plan: CorrID:

Program	Stmt Type	Call Type	Sect No.	Stmt No.	SQL Calls	+----- Elapsed	Total %	IN-SQL CPU	Time	----- %
+ DSNESM68	DYNAMIC	FETCH	1	183	1250	00:00.02112	35.6%	00:00.01983	35.	
+ DSNESM68	DYNAMIC	FETCH	1	183	890	00:00.01928	32.5%	00:00.01801	32.	
+ DSNESM68	DYNAMIC	PREPARE	1	116	5	00:00.00946	15.9%	00:00.00888	16.	
+ DSNESM68	DYNAMIC	PREPARE	1	116	5	00:00.00936	15.8%	00:00.00844	15.	
+ DSNESM68	DYNAMIC	CLOSE	1	197	5	00:00.00005	0.1%	00:00.00005	0.	
+ DSNESM68	DYNAMIC	OPEN	1	190	5	00:00.00004	0.1%	00:00.00004	0.	
+ DSNESM68	DYNAMIC	OPEN	1	190	5	00:00.00004	0.1%	00:00.00004	0.	
+ DSNESM68	DYNAMIC	CLOSE	1	197	5	00:00.00003	0.1%	00:00.00003	0.	

Figure A-10 is an example of high-level dynamic SQL statement analysis where the report displays the FETCH and SQL text.

**Figure A-10 SQL STATEMENT TEXT Report—the FETCH and SQL Text**

```

ASQEQRPN/I                               View a Report                               LINE 1 OF 9
Command =====> _____ Scroll ==> CSR_

BMCSftwr.SQMCACTY  --          SQL STATEMENT TEXT          --          10/15 23:37:51
Source : P410-ACTIVE  Intvl : 10/15 23:29 - UNLIMITED
-----
Actions for +: T-Detail  E-Errors  H-Header  O-Objects
              for *: X-Explain SQL text

Subsys: DFG1  AppGrp:                User:                ConnID:
              Plan:                  CorrID:                183

          Sect Stmt +----- SQL -----+ +- Total IN-SQL Time +-
Program  No.  No.  Calls  Open  Fetch  Error  Elapsed  CPU  Getpage
-----
+ DSNESM68  1  183  1250    0  1250    0  00:00.02112  00:00.01983  1270
Call Type: FETCH                      Averages:  00:00.00002  00:00.00002  1
Stmt Type: DYNAMIC                    +-----
Dynamic SQL Statement text:
*  SELECT * FROM SYSIBM.SYSPLAN

```

This option provides the highest level of detail.

This option typically increases the number of records written to both the APSTMT trace data sets and the APSTACC trace data sets.

SQL statement text is available for each call type (which is the reason for the increase in the number of records written to the APSTMT trace data sets). SQL statement text is available for viewing on the SQL STATEMENT TEXT (SQMCACTY) report.

Compared to low- or medium-level dynamic SQL statement analysis, this option:

- **Increases** the number of SQL text records written to the APSTMT trace data set because one is created for every call type (PREPARE, OPEN, FETCH, and CLOSE) for every unique dynamic statement.
- **Increases** the number of accounting records written to the APSTACC trace data set because an accounting record is created for every call type (PREPARE, OPEN, FETCH, and CLOSE) for every unique dynamic SQL statement.

## Processing with Low-Level Dynamic SQL Statement Analysis

Enabled by setting the summarization options as follows:

```
Collect data for each unique dynamic stmt = N
      Granular dynamic stmt detail = N
```

For each dynamic SQL statement that is executed, the following records are created:

- one SQL text record (IFCID BMC005) for each dynamic SQL statement that is executed during an interval
- one accounting record (IFCID BMC307) for each call type (PREPARE, OPEN, FETCH, CLOSE) for each unique occurrence of the reduction keys for that call (plan, program, section, pre-compiler statement number) during an interval.

### Example

Using SPUFI on the same DB2 subsystem, with all collection key options set to **NO**, as the following output from the APPSTAT command indicates:

```
SUMMARY OPTS:  USERID=N,          CONNECTION=N,    CORRELATION=N,
                DYNAMIC STMT=N,   WORKSTATION=N,  DETAIL=N
```

Using SPUFI on the same DB2 subsystem, with *no* APPTUNE dynamic SQL collection key specified:

1. User 1 executes 'SELECT \* FROM SYSIBM.SYSPLAN' twice.
2. User 2 executes 'SELECT \* FROM SYSIBM.SYSPLAN' three times.
3. User 1 executes 'SELECT \* FROM SYSIBM.SYSTABLESPACE' once.
4. User 2 executes 'SELECT \* FROM SYSIBM.SYSTABLESPACE' four times.

As a result, the trace data set contains the following 14 records:

Four accounting records (BMC307):

- PREPARE
- OPEN
- FETCH
- CLOSE

Ten SQL text records (BMC005)

- SELECT \* FROM SYSIBM.SYSPLAN
- SELECT \* FROM SYSIBM.SYSTABLESPACE

## Processing with Medium-Level Dynamic SQL Statement Analysis

Enabled by setting the summarization options as follows:

```
Collect data for each unique dynamic stmt = Y
Granular dynamic stmt detail = N
```

For each *unique* dynamic SQL statement that is executed, the following records are created:

- one SQL text record (IFCID BMC005)
- one CURSOR accounting record (IFCID BMC307)

For each unique occurrence of the PREPARE, as defined by the reduction keys (plan, program, section, pre-compiler statement number) during an interval, the following record is created:

- one PREPARE accounting record (IFCID BMC307)

### Example

Using SPUFI on the same DB2 subsystem, with all collection key options set as shown in the following output from the APPSTAT command:

```
SUMMARY OPTS:  USERID=N,          CONNECTION=N,    CORRELATION=N,
                DYNAMIC STMT=Y,   WORKSTATION=N,  DETAIL=N
```

Using SPUFI on the same DB2 subsystem, with the APPTUNE dynamic SQL collection key specified:

1. User 1 executes 'SELECT \* FROM SYSIBM.SYSPLAN' twice.
2. User 2 executes 'SELECT \* FROM SYSIBM.SYSPLAN' three times.

3. User 1 executes 'SELECT \* FROM SYSIBM.SYSTABLESPACE' once.
4. User 2 executes 'SELECT \* FROM SYSIBM.SYSTABLESPACE' four times.

As a result, the trace data set contains the following six records:

Three accounting records (BMC307):

- PREPARE – one for each unique occurrence of SPUFI (there is only one)
- CURSOR – one for each unique dynamic SQL statement

Two SQL text records (BMC005)

- SELECT \* FROM SYSIBM.SYSPLAN
- SELECT \* FROM SYSIBM.SYSTABLESPACE

## Processing with High-Level Dynamic SQL Statement Analysis

Enabled by setting the summarization options as follows:

```
Collect data for each unique dynamic stmt = Y
      Granular dynamic stmt detail = Y
```

For each *unique* dynamic SQL statement that is executed, the following records are created:

- Four SQL text records (IFCID BMC005)
  - one for each call type
  - five SQL text records if there are five call types (DESCRIBE, PREPARE, OPEN, FETCH, CLOSE)
- one PREPARE accounting record (IFCID BMC307)
- one OPEN accounting record (IFCID BMC307)
- one FETCH accounting record (IFCID BMC307)
- one CLOSE accounting record (IFCID BMC307)

## Example

Using SPUFI on the same DB2 subsystem, with all collection key options set as shown in the following output from the APPTSAT command:

```
SUMMARY OPTS:  USERID=N,          CONNECTION=N,    CORRELATION=N,  
                DYNAMIC STMT=Y,    WORKSTATION=N,  DETAIL=Y
```

Using SPUFI on the same DB2 subsystem, with the APPTUNE dynamic SQL collection key specified:

1. User 1 executes 'SELECT \* FROM SYSIBM.SYSPLAN' twice.
2. User 2 executes 'SELECT \* FROM SYSIBM.SYSPLAN' three times.
3. User 1 executes 'SELECT \* FROM SYSIBM.SYSTABLESPACE' once.
4. User 2 executes 'SELECT \* FROM SYSIBM.SYSTABLESPACE' four times.

As a result, the trace data set contains the following 16 records:

Eight accounting records (BMC307):

- PREPARE – one for each unique dynamic SQL statement
- OPEN – one for each unique dynamic SQL statement
- FETCH – one for each unique dynamic SQL statement
- CLOSE – one for each unique dynamic SQL statement

Eight SQL text records (BMC005)

- SELECT \* FROM SYSIBM.SYSPLAN – one for each accounting record
- SELECT \* FROM SYSIBM.SYSTABLESPACE – one for each accounting record

## Setting the Options

To enable (or disable) dynamic SQL text summarization, follow these instructions:

- Step 1** Select option **2** (DOMPLEX Profiles) from the Administration menu (DOMEADM1).

The DOMPLEX Profile Administration panel (Figure A-11) is displayed.

**Figure A-11 DOMPLEX Profile Administration Panel (DOMEPRFS)**

```

DOMEPRFS/P                DOMPLEX Profile Administration                LINE 1 OF 21
Command =====> _____ Scroll ==> CSR_

To add a profile, type the name in the "New profile" field, and/or type one
or more action codes. Then press Enter.
  V -View      M -Modify      D -Delete      C -Copy

New profile _____ (1-8 characters)

Act Name      Description                Last change date      Changed by
-----
- BOB281      TEST QA                    2000-02-15 13:23      USER1
- DOMALSM     CHRIS'S TEST SYSTEM        2002-09-30 17:09      USER3
- DOMGROUP    DEFAULT DOMPLEX            2001-10-23 16:23      USER345
- DOMPXX      PRADEEP XCF GROUP          2003-05-14 14:21      USERPXX
- DOMPXX2     TEST SYSTEM 2              2003-04-30 15:20      USERPXX
- DOMPXX3     TEST SYSTEM 3              2001-09-17 08:11      USERPXX2
- DOMPXX4     TEST SYSTEM 4              1999-05-14 14:17      USERPXX3
- DOMPXX5     TEST PRADEEP               2002-10-04 14:57      USER400
M DMPROD     PRODUCTION SYSTEM          2003-07-12 11:45      USERPXX
- DOMV410     V4R1M00 DEVELOPMENT SYSTEM  2003-02-08 16:37      USER3
F1=Help      F2=Split      F3=End        F4=Sort A     F5=Sort D     F6=Showcmds
F7=Up        F8=Down       F9=Swap       F10=Left     F11=Right    F12=Cancel

```

- Step 2** Select the appropriate DOMPLEX Profile with the **M** (Modify) action code, and press **Enter**.

The DOMPLEX Profile Menu (Figure A-12) is displayed.

**Figure A-12 DOMPLEX Profile Menu (DOMESPR0)**

```
DOMESPR0/P                                DOMPLEX Profile Menu                                12:55:18
Command =====> _____

DOMPLEX name : DOMPROD

Type an optional description for this DOPLEX in the field below.

Description . . . . . PRODUCTION_SYSTEM_____

Select one of the following options.  Then press Enter.

2 0. DOPLEX Parameters      - Parameters that apply to the entire DOPLEX
  1. Data Collector List    - Data Collector subsystems in DOPLEX
  2. DB2 Monitor List      - DB2 subsystems to be monitored
  3. Output Group List     - Historical data output group definitions

F1=Help      F2=Split      F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left    F11=Right   F12=Cancel
```

**Step 3** Select option 2 (DB2 Monitor List), and press **Enter**.

The DOPLEX DB2 List (Figure A-13) is displayed.

**Figure A-13 DOMPLEX DB2 List (DOMESPR2)**

```

DOMESPR2/I                               DOMPLEX DB2 List                               LINE 1 OF 5
Command ====> _____ Scroll ====> CSR_

DOMPLEX name: ASQA320

To add a DB2, type the DB2 subsystem ID in the "New DB2" field, and/or type
one or more action codes. Then press Enter.
  S -Select      D -Delete      C -Copy

New DB2 _____ (DB2 subsystem ID)
      Enable      Activate      Collection      Enable      SQL
      with AM     Exceptions   Start          Options     Keys         Pool         Explorer
Act Name or MVDB2 with AM  APPTUNE  ABLTIEOFS  UCRWTG  Advisor  Available
-----
-  *      N          N          N          YYYYYYNYN  NNNNNN      N          N
-  DBAA   N          N          N          YYYYYYNYN  NNNNNN      N          N
S DBE1 N          N          Y          YYYYYYNYN NNNNNN    N          N
-  DB2A   N          N          Y          YYYYYYNYN  NNNNNN      N          N
-  DFE1   N          N          Y          YYYYYYNYN  NNNNNN      N          N
-  DFE2   N          N          Y          YYYYYYNYN  NNNNNN      N          N

F1=Help      F2=Split     F3=End       F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down      F9=Swap      F10=Left    F11=Right   F12=Cancel
    
```

**Step 4** Select the appropriate DB2 subsystem with the **S** (Select) action code, and press **Enter**.

The DB2 Definition panel (Figure A-14) is displayed.

**Figure A-14 DB2 Definition Panel (DOMESP20)**

```

DOMESP20/P                               DB2 Definition                               13:03:04
Command =====> _____

DB2 subsystem name : DEAL                   DOMPLEX name : DOCUMENT

Specify the values that will apply to this DB2 below.  Then EXIT.

Monitor this DB2 with ACTIVITY MONITOR . . . . . Y          (Y=Yes, N=No)
Monitor this DB2 with Pool Advisor . . . . . Y             (Y=Yes, N=No)
Auto start APPTUNE/App Perf data collection . . . . Y      (Y=Yes, N=No)
SQL Explorer available for use with this DB2 . . . : Y      (Y=Yes, N=No)

Dynamic Explain plan name . . . . . DOMV4000
Database name of dynamically created PLAN_TABLE . . BMCPERF_
Table space name of dynamically created PLAN_TABLE PLANTAB_
Auto start exceptions . . . . . N          (Y=Yes, N=No)
DB2 statistics collection interval . . . . . __30      (0-9999 minutes)
XBM data set statistics collection interval . . . . __0  (0-1440 minutes)

Set/View ACTIVITY MONITOR IFCID trace controls? . . N      (Y=Yes, N=No)
Change/View APPTUNE/App Perf collection options? . . N      (Y=Yes, N=No)
F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left     F11=Right     F12=Cancel

```

**Step 5** Type **Y** in the **Set/View APPTUNE/App Perf collection options?** field, and press **Enter**.

The Collection Controls panel (Figure A-15) is displayed.

**Figure A-15 Collection Controls Panel (DOMESPQ0)**

```
DOMESPQ0/P                               Collection Controls                               13:04:20
Command ====> _____

DB2 subsystem name : DEAL                   DCOMPLEX name : DOCUMENT

Select one of the following options.  Then press Enter.

_ 1. Data to be collected
   2. Optional collection keys
   3. Filter profile
   4. SQL statistics collection interval

F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap     F10=Left   F11=Right   F12=Cancel
```

**Step 6** Select option 2 (Optional collection keys), and press **Enter**.

The Collection Key Options panel (Figure A-16) is displayed.

**Figure A-16 Collection Key Options Panel (DOMESPQ2)**

```

DOMESPQ2/I                               Collection Key Options                               09:42:42
Command =====> _____

DB2 subsystem name : DBB2                   DOMPLEX name : ASQA320

By default, data is summarized and recorded for each unique DB2
subsystem, plan, program (and version), section, and statement number.
Specify the following additional summarization keys to be used.  Then Exit.

Collect data for each unique user ID . . . . Y (Y=Yes,N=No,S=Static,D=Dynamic)
Collect data for each unique connection . . Y (Y=Yes,N=No)
Collect data for each unique correlation ID Y (Y=Yes,N=No)
Collect data for each unique workstation ID N (Y=Yes,N=No)

Collect data for each unique dynamic stmt. . Y (Y=Yes,N=No,H=Host Var Only)
          Granular dynamic stmt detail . N (Y=Yes,N=No)

Caution: See HELP for comments and recommendations.

F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left     F11=Right     F12=Cancel

```

**Step 7** The value that is specified for the **Collect data for each unique dynamic stmt** field determines whether data will be collected and summarized by each unique dynamic SQL statement:

- Type **Y** and press **Enter** to enable dynamic statement collection and summarization by each unique SQL statement.
- Type **H** and press **Enter** to enable dynamic statement collection and summarization by each unique SQL statement only if the SQL text includes host variable values.

#### Example

The following statement would not be summarized by text:

```
SELECT * FROM SYSIBM.SYSTABLES WHERE TNAME='FRED'
```

The following statement would be summarized by text:

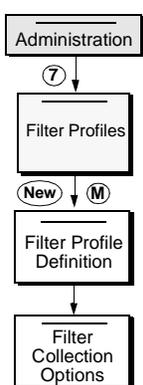
```
SELECT * FROM SYSIBM.SYSTABLES WHERE TNAME=:hvar1
```

Consider this option if a large number of your dynamic SQL statements contain host variable values.

This change takes effect the next time that you cycle the Data Collector.

**Note:** You can use the APPKEYS T command to enable or disable dynamic SQL statement reduction without stopping the Data Collector. For a complete explanation of the APKEYS command, see the *APPTUNE User Guide* or use online Help (type HELP APPKEYS on the **Command** line and press **Enter**).

## Filter Profiles for ERP Applications



Filter profiles are used to tailor data collection to specific needs. When you use a filter profile, you override the default filtering values that are specified in the DOMPLEX Profile and you bypass the need to recycle the Data Collector.

**Note:** If you want to collect *object* data, the value in the DOMPLEX Profile for object collection must be set to Y (Yes) when the relevant Data Collector is started. Object collection can subsequently be toggled off and on by using the APPCOLL command or can be limited by using filter profiles.

In an environment with large volumes of dynamic SQL, BMC Software recommends that filter profiles be used to reduce the volume of data to be collected. Using filter profiles allows you to collect the data that you need to analyze the performance of your SQL statements without the overhead of collecting large volumes of irrelevant data.

A filter profile lets you tailor the collection options that will be used with specific combinations of the following DB2 identifiers:

- program
- plan
- user ID
- correlation ID
- DB2

After you specify the identifiers, you select the collection options that will apply to those identifiers:

### Collect accounting data

If yes, the types of data that are specified in the DOMPLEX Profile for the specified DB2 will be collected.

**Collect SQL text**

You can select all SQL statement text or no SQL statement text, or you can collect statement text for only static SQL or only dynamic SQL.

**Collect object data**

You can select all object data or no object data, or you can collect object data for only static SQL or only dynamic SQL.

**Summarize by user ID**

If yes, data for only the users that are specified in this profile will be summarized.

**Summarize by DYNAMIC SQL text**

You can summarize by all dynamic SQL text or none at all, or you can summarize by only the SQL text that includes host variable values. If you choose to collect only the text that contains host variable values, you can significantly reduce the volume of data that is collected by allowing the product to summarize the SQL statements that are otherwise identical.

You can also choose to collect SQL text only for SQL calls that exceed thresholds that you set for elapsed and/or CPU times. An exception record is created for each call that exceeds these thresholds, and you can use the exception reports to examine the data.

You can also choose whether to collect host variable values for the exception records.

You can create any number of filter profiles to be used in different circumstances or at different times of day. You can assign a filter profile to a specific combination of DB2 and Data Collector (in the DOMPLEX Profile), and you can cause the filtering options to be applied automatically when the Data Collector is started.

**Note:** The filter profiles that you create apply *only* to the specific combinations of identifiers that are specified in the filter profiles. Collection of all other data is governed by the specifications in the DOMPLEX Profile.

## Filtering Recommendations

Begin by using a filter profile that is conservative, collecting minimal data. Then gradually change individual settings in the profile one at a time. Use the APPFILT command to disable the profile and to restart it after changing the configuration. When you restart the profile, it will use the new configuration. The APPCOLL command lets you change collection options dynamically, without stopping the Data Collector. This way you can monitor the effect of each change and ensure that there is no negative effect on system performance. You can use the APPSTAT command to monitor the status of the product.

Select option 7 from the Administration menu to display the Filter Profiles panel (Figure A-17).

**Figure A-17 Filter Profiles Panel (ASQEFILP)**

```
ASQEFILP/P                               Filter Profiles                               LINE 1 OF 16
Command =====> _____ Scroll =====> CSR_

Select a filter profile with an action code from the list below.
To add a profile, complete the "New profile" fields, then press Enter.

Actions:  V -View      M -Modify      D -Delete      C -Copy

New profile name  XYZFILT      Description  FILTER FOR XYZ APPLICATION_____

Act  Name      Description                                     +----- Last changed -----+
-----
_   ABCFILT    FILTER FOR ABC APPLICATION                      RDHDXJ4  1998-12-15  14:12
_   ACCTS     FILTER FOR ACCOUNTING APP.                    RDHCJM3  1998-12-21  14:14
_   JOHN1     JOHN W - TEST PROFILE 1                      RDHJHW   1999-01-07  12:25
_   JOHN2     JOHN W - TEST PROFILE 2                      RDHJHW   1998-12-13  23:50
_   PAYROLL   FILTER FOR PAYROLL APPLICATION                RDHHMP2  1999-02-11  16:54
_   RECEIVE   FILTER FOR RECEIVING APP                     RDHJMB3  1998-05-11  12:30
_   USERIDS   FILTER FOR USER IDS                          RDHPXK3  1998-12-30  15:40

F1=Help      F2=Split      F3=End      F4=Sort A    F5=Sort D    F6>Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left    F11=Right    F12=Cancel
```

Use the Filter Profiles panel to give a name and a description to the new filter profile (highlighted in Figure A-17). This panel is also the starting point for modifying existing profiles.

Press **Enter** to display the Filter Profile Definition panel.

Use the Filter Profile Definition panel (Figure A-18) to specify a combination of identifiers to which the profile will apply. You can define multiple sets of identifiers in a profile with different collection options for each set. However, it is best to begin with a profile containing two entries—one for the set of identifiers that you want to examine and one for preventing collection of any other data.

**Figure A-18 Filter Profile Definition Panel (ASQEFIL0)**

```

ASQEFIL0/I                               Filter Profile Definition                               LINE 1 OF 1
Command =====> _____ Scroll =====> CSR_

Filter profile name : XYZFILTR   Description : FILTER_FOR_XYZAPPLICATION_____

By default, data is collected for all programs and plans that execute on a
DB2 subsystem. Filters can be used to either stop data collection or to
set tailored collection options for specific identifiers.

To add a new entry to the filter complete the appropriate fields and press
Enter. See HELP for more information and wildcard rules.

Program: P8*_____   PLAN: _____   User ID: _____   DB2: DB2A
Corr ID: _____

Action: D -Delete entry from the list   M -Modify collection parameters

                                Collect Keys   +   Exceptions   +
Act Program Plan   User ID  Corr ID  DB2  A T O S U D G  Elapsed CPU   H
-----
                                -----

F1=Help      F2=Split    F3=End      F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up        F8=Down     F9=Swap     F10=Left    F11=Right   F12=Cancel

```

Figure A-18 shows the identifier specifications for a filter profile entry for the hypothetical XYZ application. The filter will apply to all data that is associated with programs that have names beginning with **P8** running on **DB2A**, regardless of plan, user ID, or correlation ID.

To set the collection options for this combination, press **Enter**. The Filter Collection Options panel is displayed.

Use the Filter Collection Options panel (Figure A-19) to define the collection options for the new entry.

**Figure A-19 Filter Collection Options Panel (ASQEFIL1)**

```

ASQEFIL1/I                               Filter Collection Options                               14:52:32
Command =====> _____

Filter profile name : XYZFILTR      Description : FILTER_FOR_XYZAPPLICATION_____

Program : P8*           Plan : *           User ID : *           DB2 : DB2A
Corr ID : *

Specify the desired collection, summarization, and exception options to be
applied to the filter criteria above. Then Exit. See HELP for more information.

Collect accounting data . . . . . Y (Y-Yes,N-No)
Collect SQL text . . . . . D (Y-Yes,N-No,S-Static,D-Dynamic)
Collect object data . . . . . D (Y-Yes,N-No,S-Static,D-Dynamic)
Sample data . . . . . N (Y-yes,N-No,X-Extrapolate)

Summarize by user ID . . . . . N (Y-Yes,N-No)
Summarize by DYNAMIC SQL text . . . . . H (Y-Yes,N-No,H=Host Var Only)
    Granular dynamic stmt detail. . . . . N (Y-Yes,N-no)

Exception - elapsed time threshold . . . . . __0 (0 - 9999 seconds)
Exception - CPU time threshold . . . . . __1 (0 - 9999 milliseconds)
Collect HVAR values for Exceptions . . . . . N (Y-Yes,N-No)

```

Figure A-19 shows the recommended initial settings:

#### **Collect accounting data**

The types of data that are specified in the DOMPLEX Profile will be collected (see Figure A-1 on page A-2).

#### **Collect SQL text**

SQL text will be collected only for dynamic SQL.

#### **Collect object data**

Object data will be collected only for dynamic SQL.

**Note:** Object data collection must have been active when the current Data Collector was initialized. If object collection was not active at startup, you must change the value in the DOMPLEX Profile and recycle the Data Collector (see Figure A-1 on page A-2).

#### **Sample data**

There will be no data sampling.

#### **Summarize by user ID**

There will be no summarization by user.

**Summarize by DYNAMIC SQL text**

SQL text will be summarized only if the text contains host variable values.

**Granular dynamic stmt detail**

Granular DYNAMIC SQL data will not be collected.

**Exception - elapsed time threshold**

SQL text will not be collected based on an elapsed time threshold.

**Exception - CPU time threshold**

SQL text will be collected only if the CPU time for the SQL call exceeds one millisecond.

**Collect HVAR values for Exceptions**

Host variable values will not be included.

Press **F3** (End) to return to the Filter Profile Definition panel (Figure A-20).

**Figure A-20 Filter Profile Definition Panel (ASQEFIL0)**

```

ASQEFIL0/I                               Filter Profile Definition                               LINE 1 OF 1
Command ====> _____ Scroll ====> CSR_

Filter profile name : XYZFILTR      Description : FILTER_FOR_XYZAPPLICATION_____

By default, data is collected for all programs and plans that execute on a
DB2 subsystem.  Filters can be used to either stop data collection or to
set tailored collection options for specific identifiers.

To add a new entry to the filter complete the appropriate fields and press
Enter.  See HELP for more information and wildcard rules.

Program: * _____      PLAN: * _____      User ID: * _____      DB2: * _____
Corr ID: * _____

Action: D -Delete entry from the list      M -Modify collection parameters

          Collect Keys  +  Exceptions  +
Act Program Plan      User ID  Corr ID  DB2  A T O S U D G  Elapsed CPU  H
-----
_  P8*      *      *      *      DB2A Y D D N H N N      0      1  N

F1=Help      F2=Split      F3=End      F4=Sort A      F5=Sort D      F6=Showcmds
F7=Up        F8=Down       F9=Swap     F10=Left      F11=Right     F12=Cancel
    
```

The just-defined entry is displayed in the table at the bottom of the panel (highlighted in Figure A-20).

Create a second entry by typing asterisks (\*) in all the identifier fields (as in Figure A-20). The collection options that you define for this entry will apply to all other data. Press **Enter** to define the collection options.

Figure A-21 shows the recommended settings for the entry. All data collection is turned off. Press **F3** (End) to return to the Filter Profile Definition panel. The new entry is added to the table. Press **F3** (End) again to save the profile.

**Figure A-21 Filter Collection Options Panel (ASQEFIL1)**

```

ASQEFIL1/I                               Filter Collection Options                               14:52:32
Command ====> _____

Filter profile name : XYZFILT      Description : FILTER_FOR_XYZAPPLICATION_____

Program : *           Plan : *           User ID : *           DB2 : DB2A
Corr ID : *

Specify the desired collection, summarization, and exception options to be
applied to the filter criteria above. Then Exit. See HELP for more information.

Collect accounting data . . . . . N (Y-Yes,N-No)
Collect SQL text . . . . . N (Y-Yes,N-No,S-Static,D-Dynamic)
Collect object data . . . . . N (Y-Yes,N-No,S-Static,D-Dynamic)
Sample data . . . . . N (Y-yes,N-No,X-Extrapolate)

Summarize by user ID . . . . . N (Y-Yes,N-No)
Summarize by DYNAMIC SQL text . . . . . H (Y-Yes,N-No,H=Host Var Only)
    Granular dynamic stmt detail. . . . . N (Y-Yes,N-no)

Exception - elapsed time threshold . . . . . ___0 (0 - 9999 seconds)
Exception - CPU time threshold . . . . . ___0 (0 - 9999 milliseconds)
Collect HVAR values for Exceptions . . . . . N (Y-Yes,N-No)
    
```

The result is a profile that will collect data for one specific set of identifiers.

Next, the profile must be linked to a specific combination of DB2 and Data Collector in the DOMPLEX Profile.

Use the Filter Profiles panel (Figure A-22) to link the filter profile to the DB2/Data Collector combination in the DB2 definition.

Figure A-22 Filter Profiles Panel (ASQEFILS)

```

ASQEFILS/P                               Filter Profiles                               LINE 6 OF 9
Command =====> _____ Scroll =====> CSR_

DB2 subsystem name   : DBE1                               DOMPLEX name : AMLG
Current profile name : DIANNE
Filter at startup? . . Y (Y-Yes,N-No)

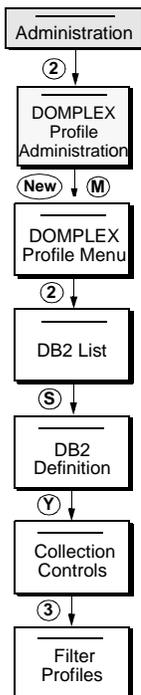
To activate filter processing, specify "Y" to "Filter at startup" and select
the filter profile to be used for this combination of DB2 and its associated
Data Collector. Then Exit.

Actions:  S -Select a profile      V -View profile definition

----- Last changed -----
Act  Name      Description                               User      Date      Time
-----
-   JHWT2      JHW TEST 2                               RDHJHW    1998-12-13 23:50
-   JOHN       TEST FOR DENNIS                          RDHJMB3   1998-05-11 12:30
-   PRADEEP    RDHPXK3   1998-12-30 15:40
S   XYZFILT    RDHDXJ3   1998-12-01 10:48

F1=Help   F2=Split   F3=End     F4=Sort A   F5=Sort D   F6=Showcmds
F7=Up     F8=Down    F9=Swap    F10=Left    F11=Right   F12=Cancel

```



First, specify **Y** (Yes) in the field labelled **Filter at startup?**, then select the filter profile to be used with the selected combination. The filter profile will be activated the next time the Data Collector is cycled and each subsequent time the Data Collector is started until the value on this panel is changed.

To start collecting and analyzing data using the recommended initial settings, follow these steps:

1. After the Data Collector is started, allow the product to run long enough to collect a representative sample of data.
2. Issue the APPRESET command to externalize the data that is collected to the trace data sets. A new interval will begin.
3. Use the reports to analyze the data. The information in the reports should help you decide what changes can be made to the filter profile.

You might find that plan name or correlation ID (or some other DB2 identifier) can be used to filter out unnecessary data. The average elapsed and CPU times can help you decide on appropriate exception levels.

4. Make changes to the filter profile, and use the APPFILT command to disable the profile and restart it. The new configuration will be used. Make one change at a time, and monitor the effect of each change before making another.

Use the APPSTAT command at any time to review the collection options in effect. Continue using the reports to monitor the effects of the changes that you make.

If you decide to set values for exception processing, you must be collecting SQL text (**Y**, **S**, or **D** specified in the **Collect SQL text** field of the Filter Collection Options panel) and you must have a non-zero value in at least one of the time fields (elapsed or CPU).

**Note:** Initially, you should use an elapsed or CPU time in the exception fields that is twice the average elapsed or CPU time observed in the reports. You can adjust these times as needed by changing the filter profile and by using the APPFILT command to disable and restart the profile.

To collect host variable values for exception records, you must be collecting SQL text (**Y**, **S**, or **D** specified in the **Collect SQL text** field of the Filter Collection Options panel) and you must have a non-zero value in at least one time field (elapsed or CPU).

You can see the host variable values that have been collected by viewing the Exceptions -- SQL Text report (SQMCACTE) in Workload Analysis. Zoom from the Exception Analysis report (SQMCACEX).

**Note:** If host variable values are not displayed, verify that the collection options are set properly. Host variable values are not available for PREPARE and FETCH statements.

The procedures that are outlined in this appendix provide a method for using filter profiles. The appropriate settings will vary by DB2, the time of day, and other factors. Closely monitor the changes that you make to prevent a negative effect on system performance.

### Online Help

Extensive online Help is available for all panels and reports.

While you are creating your filter profile, you can use the online Help to get detailed information about each panel and report and their fields. To get high-level help for a panel or report, move the cursor to a text area of the panel or report and press **F1**. To get help for a specific field, move the cursor to the value for the field, and press **F1**.

There is also detailed online Help for all commands. Type `HELP command-name` on the **Command** line of any panel or report, and press **Enter**.

---

---

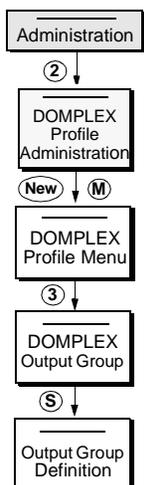
# Appendix B Output Group Considerations

This appendix applies only to APPTUNE and the APPTUNE component of Application Performance. If neither APPTUNE nor Application Performance is installed at your site, you can ignore this appendix.

This appendix provides guidelines for the appropriate sizing of output group data spaces and the appropriate data classes to combine in your trace data sets. This appendix contains the following sections:

Introduction . . . . .	B-2
Data Classes . . . . .	B-4
Trace Data Sets . . . . .	B-6
Installation Assistant . . . . .	B-7
If You Need Help . . . . .	B-7

# Introduction



An output group is a collection of criteria in the DOMPLEX Profile that are used to collect and process data for writing to the trace data sets.

Each output group consists of the following criteria:

## Subsystems\*

You can specify a Data Collector to own the output group if you want to collect and store data associated with a specific Data Collector. If you do not specify a Data Collector, output group ownership will switch between the Data Collectors defined to the DOMPLEX, as necessary.

You can also specify up to 32 DB2 subsystems from which to collect data and store it in each output group. The DB2s specified must be defined to this DOMPLEX.

## Data Classes\*

You can select one or more data classes to specify the BMC IFCIDs (BMC records) that will be captured and stored by each output group. You can choose from the following data classes:

Data Class	IFCIDs
APSTACC	APPTUNE/Application Performance BMC IFCIDs: <ul style="list-style-type: none"> <li>• 6—Interval Statistics</li> <li>• 307—SQL Statement Summary</li> <li>• 318—Filter data</li> </ul>
APSTACCS	APPTUNE/Application Performance Statement Summary records (BMC IFCIDs 308—310)
APSTMT	APPTUNE/Application Performance BMC IFCIDs: <ul style="list-style-type: none"> <li>• 4—SQL Exceptions</li> <li>• 5—SQL Statement Text</li> <li>• 10—Host Variables</li> <li>• 11—Object statistics per SQL Exception</li> </ul>
APERROR	APPTUNE/Application Performance BMC IFCID: <ul style="list-style-type: none"> <li>• 7—SQL Errors</li> </ul>
APOBJECT	APPTUNE/Application Performance Object Statistics. BMC IFCIDs: <ul style="list-style-type: none"> <li>• 8—SQL Statement/Object Cross-Reference</li> <li>• 9—Access Object Statistics</li> </ul>

Data Class	IFCIDs
APINDEX	Application Performance Index Events <ul style="list-style-type: none"> <li>• 316—Index Statement Summary (Weighted Column Use)</li> <li>• 317—Objects Accessed</li> </ul>
APBIND	Application Performance BIND events (BMC IFCID 315)
DCSYSTEM	Data Collector events. BMC IFCIDs: <ul style="list-style-type: none"> <li>• 241—Command Response</li> <li>• 245—DB2 WTO Messages</li> </ul>

\*Any combination of DB2 and data class must be unique among the output groups for a DOMPLEX. For example, if both DB2A and data class APSTACC are defined to one output group, that same combination should not be specified in any other output group that is defined to the same DOMPLEX.

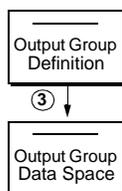
### Data Space

You can specify the size of a data space segment that will be allocated to capture and process the data for each output group. The size that is recommended depends on the types of data that are assigned to each group and the load expected for all types combined.

### Trace Data Sets

You can allocate up to 16 trace data sets that will be used to save the data collected and processed by each output group.

### Data Space Size



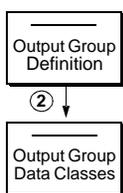
Data spaces are used to buffer data that is being written to the trace data sets. You specify the size of the data spaces in the DOMPLEX Profile definition. Because the data space serves as a buffer for all the trace data sets for the output group, the sizes should be proportional. You will obtain optimal read performance by having a one-to-one ratio of track buffers to tracks on the trace data sets, in which case all the data that is written to history which has not yet been overwritten on DASD can be retrieved without any read I/O.

You can achieve the correct ratio by allocating 1 MB of data space for every

- 1.4 cylinders of 3390 trace data sets, or
- 1.7 cylinders of 3380 trace data sets

This is the *maximum* size of data space that can be used. You can allocate much smaller data spaces if the goal is merely to prevent data loss. Three to five megabytes should be sufficient to stage several cylinders of trace data, even during periods of heavy data output. You can fine-tune the balance between maximum caching performance and economy of expanded storage use by adjusting data space size.

## Data Classes



Not all data is written at the same rate. Some data is summarized in an internal reduction table in a common data space. The following types of data fall into this category:

- interval data (BMC IFCID 6)
- filter data (BMC IFCID 318)
- statement object data (BMC IFCID 8)
- accessed objects data (BMC IFCID 9)
- statement summaries (BMC IFCIDs 307-310)

At the end of an interval the contents of the reduction table (the summarized data) is written to trace data sets. Depending on the size of the reduction table and the number of DB2 objects, this can be a large amount of data.

Other data is written immediately to the trace data sets. The following types of data fall into this category:

- statement text data (BMC IFCID 5)
- SQL error data (BMC IFCID 7)
- exception data (BMC IFCID 4)
- host variable data (BMC IFCID 10)
- exception object data (BMC IFCID 11)

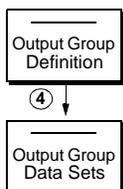
In most environments, this data will flow in a more constant stream than the reduction table data. If the environment is busy, these two types of data should not compete for the same data space.

Data classes are used to separate data for storage in different data sets. The data that is written to the reduction table is stored by different data classes than the records that are written directly to the trace data sets. If you put data classes APSTACC and APSTACCS in the same output group and data class APSTMT in a different output group, they will be stored in separate sections of the data space and will not compete for space.

Object data (data class APOBJECT) can be combined with APSTMT or assigned to its own output group. Data class DCSYSTEM can be combined with either APSTMT or APOBJECT. In an environment where there are a large number of DB2 objects and/or a short interval, APSTMT and APOBJECT should not be combined. In an environment where there are large numbers of either unique SQL statements or errors, APSTMT and APERROR should not be combined.

If trace data sets are relatively small and optional collection keys are used, it might even be useful to assign APSTACC and APSTACCS to different output groups.

## Trace Data Sets

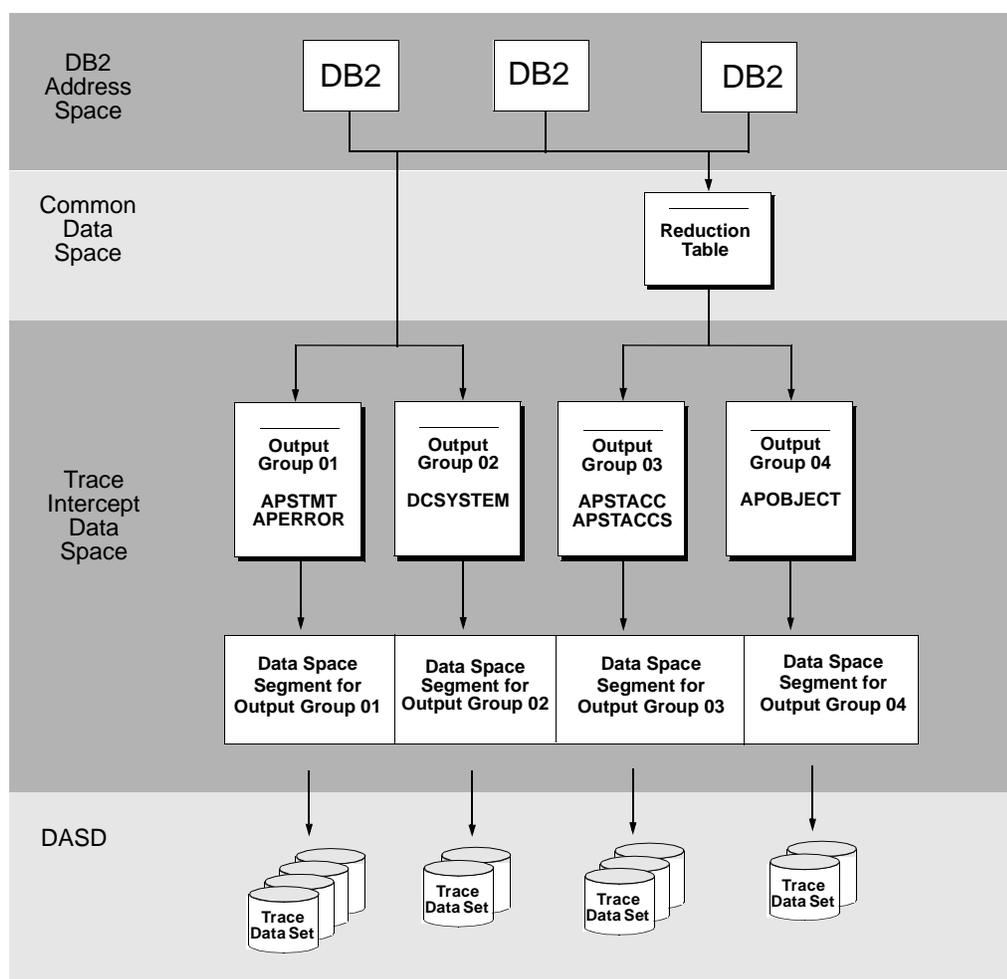


The final destination of the records that are collected by the output groups is the trace data sets. You must decide how much data to have available online versus how many DASD resources to commit to APPTUNE/Application Performance.

You can allocate multiple trace data sets for the storage of records from each output group. To prevent data loss, you need at least two data sets for each output group. When one data set is full, data can be written to the second data set while the system submits a copy job for the first.

Figure B-1 shows the flow of data from DB2 to the trace data sets and shows a sample of how the output groups for a DOMPLEX Profile could be configured.

**Figure B-1 Sample Output Group Configuration**



## Installation Assistant

A great deal of flexibility has been built into the products, which allows you to tailor them to each environment, but results in some complexity. To help you deal with this complexity, the installation process includes the Installation Assistant (IA). The IA helps you configure the product, based on the answers that you give to questions about the transaction volumes at your site and about the amount of separation of data that you desire (by DB2 or by type of data, for example). The IA will not arrive at the ideal configuration for your environment, but it should be adequate to get you started and provide a basis for further tuning.

## If You Need Help

Environments vary a great deal in type and volume of data, even within the same shop. Obtaining an ideal configuration that provides the data and performance that you need with the most economical use of resources will require adjustment of some parameters based on experience and the needs at your site. Customer Support can provide assistance with your tuning efforts.

The support team will need the following information to help you tune your configuration:

- output from the Data Collector STATUS command (issued from the Data Collector Command Interface panel)
- output from the Data Collector IFCIDS command (issued from the Data Collector Command Interface panel) and/or SYSPRINT from DOMBCOPY jobs for each output group
- current output group definition
- your goal for performance—amount of data online, resources available, report response time

You can send a copy of this data electronically or by fax.

For information about contacting BMC Software Customer Support, see “Reporting Problems” on page 6-9.



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# Appendix C Batch Utilities

The batch utilities are used by ACTIVITY MONITOR, APPTUNE, the Application Performance solution, and MAINVIEW for DB2 – Data Collector. They are not used by Pool Advisor, System Performance, or SQL Explorer (when it is run as a standalone product).

This appendix describes the batch utilities that can be used by ACTIVITY MONITOR. This appendix contains the following sections:

Overview . . . . .	C-2
The DOMBCOPY Utility . . . . .	C-3
The DOMBSWIT Utility . . . . .	C-7
The DOMBARCH Utility . . . . .	C-9

# Overview

The following batch utilities are provided with the System and SQL Performance products

**Table C-1 System and SQL Performance Products Batch Utilities**

Utility Name	Description	Where Documented
DOMBCOPY	The DOMBCOPY batch job is submitted automatically whenever a SWITCH command is issued or when a trace data set is full. The DOMBCOPY job copies the contents of the trace data set to a sequential file in SMF format.	See "The DOMBCOPY Utility" on page C-3
DOMBRPT1	The DOMBRPT1 utility is used to produce printed reports from a batch job using external data sets as input. DOMBRPT1 can also produce data in a format suitable for use by the DB2 Load utility.	See the appropriate book for the product you are using: ACTIVITY MONITOR Reference Manual APPTUNE User Guide MAINVIEW for DB2 Performance Reporter 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 appropriate book for the product you are using: ACTIVITY MONITOR Reference Manual APPTUNE User Guide
DOMBPLOG	The DOMBPLOG utility prints all entries from the specified report log	See the appropriate book for the product you are using: ACTIVITY MONITOR Reference Manual APPTUNE User Guide
DOMBSWIT	The DOMBSWIT utility invokes the Data Collector SWITCH command from a batch job	See "The DOMBSWIT Utility" on page C-7
DOMBARCH	The DOMBARCH utility invokes the Data Collector ARCHLOG command from a batch job	See "The DOMBARCH Utility" on page C-9
DMDBLIST	The DMDBLIST utility is used to print one or more customized report definitions	ACTIVITY MONITOR Reference Manual

## The DOMBCOPY Utility

Whenever a Data Collector SWITCH command is issued, a trace data set is full, or the Data Collector is shut down, the Data Collector can automatically submit the DOMBCOPY batch job to copy the data to a sequential file. All records in the data set (both DB2 and BMC) are converted to an SMF format.

When a SWITCH command is issued, a switch point is established at the place in the data set where the last record was written. DOMBCOPY stops copying records from a trace data set when it encounters a switch point. Records are copied from the beginning of the data set to the point at which the SWITCH command was issued. This prevents older records, physically located past the switch point, from being copied. To override this, specify PARM=ALL on your EXEC statement, and the entire data set will be copied.

**Note:** When DOMBCOPY is submitted manually, no switch point is established.

Member #DOMCOPY in the System and SQL Performance products CNTL data set contains sample JCL to run the copy utility (see Figure C-1).

**Figure C-1**      **DOMBCOPY JCL**

---

```
//COPY      EXEC  PGM=DOMBCOPY , PARM= ' DC=$DOMSSN , DP=$DOMPLX '
// *
//STEPLIB   DD  DISP=SHR , DSN=DOM.V4R1M00.LOAD
//SYSPRINT  DD  SYSOUT=*
//DOMBARC   DD  DISP=SHR , DSN=$DOMARC
//COPYOUT   DD  DISP=(NEW , CATLG) , UNIT=SYSDA ,
//           SPACE=(CYL , (10 , 10)) ,
//           DCB=(RECFM=VBS , LRECL=32756 , BLKSIZE=4096) ,
//           DSN=$DOMSSN . COPY . $DOMDATE . $DOMTIME . W$DOMWOG
```

---

Make a copy of the #DOMCOPY member and edit it using the JCL requirements at your site. The user ID assigned to the job depends on your security system. The JCL may need modification if this user ID is not appropriate.

To submit the copy job automatically, specify the name of the data set containing the copy job JCL on the DOMPLEX Output Group panel.

**Recommendation:**

Do not use the same COPYOUT data set name for both automatic submission of the copy job and for manual submission without the SWITCH command.

The following substitution symbols are provided for use in the copy job JCL. The symbols are replaced with the appropriate values when the job is submitted for execution.

**Table C-2 Substitution Symbols for DOMCOPY JCL**

Symbol	Substituted Value
\$DOMDSN	current trace data set name (required)
\$DOMSSN	current Data Collector subsystem ID (optional)
\$DOMDATE	current date in the format <i>Dyyddd</i> where <i>yy</i> is the year (00–99) and <i>ddd</i> is the day of the year (001–365) (optional)
\$DOMTIME	current time in the format <i>TMhhmmss</i> where <i>hh</i> is hours (00–23), <i>mm</i> is minutes (00–59), and <i>ss</i> is seconds (00–59) (optional)
\$DOMWOG	current output group defined to the trace data set (optional)**
\$DOMPLX	current DOMPLEX name (required for archive)*
\$DOMARC	archive directory for the current DOMPLEX (required for archive)*
<p>* These values must be specified if you want the archived data set to be listed in the archive directory.</p> <p>** This symbol must be prefixed with a letter because the substituted value is a number (W\$DOMWOG, for example).</p>	

You can specify substrings for the substitution symbols to tailor the values to the standards at your site. The substring syntax is as follows:

```
$SUBSTR ( SS , LL , VVVVVVVV )
```

where:

- SS = starting position (a value between 1 and the length of the substitution symbol)
- LL = length (a value between 1 and (length of symbol plus 1 minus SS))
- VVVVVVVV = substitution symbol

For example, \$SUBSTR(1,10,\$DOMDSN) would represent the first 10 characters of the current trace data set name (\$DOMDSN). The following JCL example illustrates a possible use of this substring:

#### Example

```
//COPYOUT DD DISP=(NEW,CATLG),UNIT=SYSDA,
//        SPACE=(CYL,(10,10)),
//        DCB=(RECFM=VBS,LRECL=32756,BLKSIZE=4096),
//        DSN=$DOMSSN.$SUBSTR(1,10,$DOMDSN).$DOMDATE.$DOMTIME
```

If you submit the copy job manually, you must either remove the substitution symbols or replace them with appropriate values. Make a separate copy of #DOMCOPY to use for manual submissions so the substitution symbols are not lost.

The DOMBCOPY utility requires the following DDNAMEs allocated in its JCL. Failure to properly allocate the required DDNAMEs causes DOMBCOPY to terminate:

DDNAME	Description
STEPLIB	System and SQL Performance products Load library
SYSPRINT	DOMBCOPY messages
COPYOUT	output data set (required only for COPY)
SYSIN	DOMBCOPY control statements

**Note:** The DOMBARC DDNAME is not *required*, but an archive directory cannot be created unless it is specified.

The data set to be copied is specified in the statement following the //SYSIN DD statement. One of the following options can be specified, beginning in column 1:

- COPY TRCDS=<data-set-name> to copy data to a sequential file.

The output records in SMF format are written to the data set specified in the //COPYOUT DD statement. The resulting file can be used as input (along with SMF, GTF, and EXPORT data sets) to the DOMBRPT1 utility. Figure C-2 is an example of the output from the COPY option.

**Figure C-2 Sample Output from COPY**

```

OPTIONS READ FROM SYSIN:
COPY TRCDS=DOM.SXSM.TRACE001
COPY IN PROGRESS.
COPY COMPLETE.
BMC24557 **** DATA FROM 02/24/95 15:30:05 TO 02/24/95 15:46:10
BMC24556 **** AND FROM 02/24/95 15:00:00 TO 02/24/95 15:30:05
IFCID-- ---COUNT  IFCID-- ---COUNT  IFCID-- ---COUNT  IFCID-- ---COUNT  IFCID-- ---COUNT  IFCID-- ---COUNT
DB2  1      10    DB2  2      10    DB2  3      2    DB2  6      7    DB2  7      7    DB2  13     1
DB2 14      1    DB2 15     13    DB2 16     2    DB2 18     15   DB2 20     2    DB2 21     74
DB2 44      2    DB2 45     2    DB2 53     1    DB2 58     1    DB2 61     1    DB2 63     1
DB2 104     2    DB2 105    12    DB2 106    2    DB2 107    2    DB2 202    6    DB2 218    2
BMC  35    1602  BMC 241    2    BMC 242    61   BMC 245    278  BMC 251    14   BMC 252    10
BMC 254     14    BMC 255    14
RECORDS READ.....2173
RECORDS WRITTEN.....2173
SYSIN OPTION SCAN COMPLETE.
    
```

See the *ACTIVITY MONITOR for DB2 Reference Manual* before using GTF data sets as the data source in ACTIVITY MONITOR.

- SHOW TRCDS=<data-set-name> to report on the intervals and IFCIDs in the specified trace data set.

A one-line description of each IFCID is produced, providing the following information:

<b>SEQUENCE</b>	the order of occurrence of the record in the data set
<b>TRACK-RBA</b>	the relative byte address (RBA) of the track containing the record
<b>IFCID</b>	the IFCID number of the record, preceded by DB2 or BMC to identify the source of the data
<b>DATE</b>	the date the record was produced
<b>TIME</b>	the time the record was produced
<b>SSID</b>	the originating subsystem ID (Data Collector or DB2)
<b>CONN-ID</b>	the DB2 connection ID, if present
<b>CORR-ID</b>	the DB2 correlation ID (or the exception measure or formula name for IFCID BMC 246), if present
<b>AUTH-ID</b>	the DB2 authorization ID (or the exception list owner for IFCID BMC 246), if present
<b>PLAN</b>	the DB2 plan name (or the exception list name for IFCID BMC 246), if present

Figure C-3 is an example of the output from the SHOW option.

**Figure C-3 Sample Output from SHOW**

```

OPTIONS READ FROM SYSIN:
SHOW TRCDS=DOM.SXSM.TRACE001
SHOW IN PROGRESS.
SEQUENCE TRACK-RBA IFCID DATE TIME SSID CONN-ID CORR-ID AUTH-ID PLAN
.....1 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.....2 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.....3 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.....4 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.....5 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.....6 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.....7 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.....8 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.....9 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.....10 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.....11 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.....12 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.....13 00000000 BMC 35 02/24/95 15:30:05.180591 DB2T HXBMSD XBMP
.
.
SHOW COMPLETE.
BMC24557 **** DATA FROM 02/24/95 15:30:05 TO 02/24/95 15:46:10
BMC24556 **** AND FROM 02/24/95 15:00:00 TO 02/24/95 15:30:05
IFCID-- ---COUNT IFCID-- ---COUNT IFCID-- ---COUNT IFCID-- ---COUNT IFCID-- ---COUNT
DB2 1 10 DB2 2 10 DB2 3 2 DB2 6 7 DB2 7 7 DB2 13 1
DB2 14 1 DB2 15 13 DB2 16 2 DB2 18 15 DB2 20 2 DB2 21 74
DB2 44 2 DB2 45 2 DB2 53 1 DB2 58 1 DB2 61 1 DB2 63 1
DB2 104 2 DB2 105 12 DB2 106 2 DB2 107 2 DB2 202 6 DB2 218 2
BMC 35 1602 BMC 241 2 BMC 242 61 BMC 245 278 BMC 251 14 BMC 252 10
BMC 254 14 BMC 255 14
RECORDS READ.....2173
RECORDS WRITTEN.....0
SYSIN OPTION SCAN COMPLETE.

```

## The DOMBSWIT Utility

The DOMBSWIT utility is used to invoke the Data Collector SWITCH command from a batch job. This command causes trace recording to switch to the next available VSAM trace data set and submit the optional DOMBCOPY JCL. It can be used to make periodic copies of the trace data sets for long-term storage.

The program DOMBSWIT is shipped with the System and SQL Performance products in the load library. The source code for DOMBSWIT is in the CNTL 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 parameters to this program 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 DC subsystem ID and *yy* is the output group whose trace data sets are to be switched. Valid values are:

<i>nn</i>	the number of the output group (01–16)
ALL	to indicate all output groups

Member #DOMSWIT of the CNTL data set contains sample JCL to invoke DOMBSWIT (see Figure C-4).

**Figure C-4      DOMBSWIT JCL**

---

```
//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 SWITCH TRACE RECORDING IN
/*  THE TARGET OUTPUT GROUP(S) TO ITS NEXT AVAILABLE VSAM TRACE
/*  DATASET(S) AND SUBMIT THE OPTIONAL DOMBCOPY JCL FOR THE OLD
/*  DATASET(S).
/*
/*      MODIFY ==>  ?SHAREDQUAL?
/*                  ?DOM1?      = DATA COLELCTOR SUBSYSTEM NAME
/*                  ?OG?       = DATA COLLECTOR OUTPUT GROUP NUMBER
/*                               EG. '01' FOR OUTPUT GROUP 01
/*
//DOMBSWIT EXEC PGM=DOMBSWIT, PARM='?DOM1??OG?'
//STEPLIB DD   DISP=SHR, DSN=?SHAREDQUAL?.V4R1.LOAD
//SYSPRINT DD   SYSOUT=*
/*
```

---

## The DOMBARCH Utility

The DOMBARCH utility is used to invoke the Data Collector ARCHLOG command from a batch job. This command triggers DB2 to archive the current active log data set and to switch logging activity to the next available log data set.

The program DOMBARCH is shipped with the System and SQL Performance products in the load library. The source code for DOMBARCH is in the CNTL data set. If modifications are made to this source code, DOMBARCH 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 parameters to this program are specified in the PARM portion of the EXEC JCL statement that invokes DOMBARCH as in the following example:

```
PARM=xxxxyyyy
```

where *xxxx* is the DC subsystem ID and *yyyy* is the DB2 subsystem ID.

Member #DOMARCH of the CNTL data set contains sample JCL to invoke DOMBARCH (see Figure C-5).

**Figure C-5      DOMBARCH JCL**

---

```
//DOMARCH JOB (ACCT), 'FORCE LOG',          <== MODIFY
//                MSGCLASS=X,                <== CHECK
//                CLASS=A                    <== CHECK
//*
//*  DOMBARCH  -- FORCE THE CLOSE OF THE ACTIVE DB2 LOG
//*
//*  DOMBARCH FORCES DB2 TO ARCHIVE THE CURRENT ACTIVE DB2 LOG DATA SET
//*  AND SWITCH LOGGING TO THE NEXT AVAILABLE LOG DATA SET.
//*
//*-----> CHANGE:  ?BMC-HLQ?              = DATA COLLECTOR HIGH-LEVEL QUALIFER
//*                XXXX                    = DATA COLLECTOR SUBSYSTEM NAME
//*                YYYY                    = DB2 SUBSYSTEM NAME
//*
//DB2ARCH  EXEC  PGM=DOMBARCH, PARM='XXXXYYYY'
//STEPLIB  DD  DISP=SHR, DSN=?BMC-HLQ?.LOAD
//SYSPRINT DD  SYSOUT=*
//*
```

---



---

---

# Glossary

## **ACTIVITY MONITOR**

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

**ADMIN command** A basic panel command used to display the Administration menu.

## **APPCOLL command**

A Data Collector command used to dynamically change the collection options for a DB2 without stopping the Data Collector.

## **APPFILT command**

A Data Collector command used to dynamically change the collection status for filter profiles without stopping the Data Collector.

## **APPKEYS command**

A Data Collector command used to dynamically change the collection keys for a DB2 without stopping the Data Collector.

## **Application Performance for DB2**

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

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

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

## **APPRESET command**

A Data Collector command used to write the data in the reduction table to the trace data set.

---

<b>APPSAMP command</b>	A Data Collector command used to start or stop data collection sampling.
<b>APPSTAT command</b>	A Data Collector command used to display the current status of the intercept.
<b>APPTUNE</b>	A BMC Software product used to analyze DB2 application performance.
<b>CHECK command</b>	A panel-specific command used to check for overlapping definitions among output groups.
<b>Customization</b>	The ACTIVITY MONITOR tool used to create reports, report menus, and qualifier lists.
<b>data class</b>	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 trace data sets for that output group.
<b>Data Collector</b>	The component that coordinates requests for data from all product users and retrieves data from DB2.
<b>DOMPLEX Profile</b>	A collection of attributes that define one or more Data Collectors (for example, the DB2s that can be monitored and the trace data sets that are used).
<b>exception processing</b>	A feature that allows you to collect SQL text only for SQL calls that exceed thresholds you set for elapsed and/or CPU times.
<b>filter profile</b>	A set of tailored options for the collection of data based on specific programs, plans, user IDs, correlation IDs, and DB2s.
<b>global options</b>	A set of values that determine how the System and SQL Performance products are configured.
<b>IFCID</b>	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.”
<b>Installation Assistant</b>	The System and SQL Performance products component that helps you to create tailored DOMPLEX Profiles at the time of product installation.
<b>MAINVIEW for DB2</b>	A BMC Software product that provides a comprehensive set of monitoring tools for DB2.

---

**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.

**OPERTUNE**

A BMC Software product used to dynamically modify DB2 installation parameters.

**output group**

The product component used to buffer trace records and to define and allocate the trace data sets to which records will be written from the output groups.

**Pool Advisor for DB2**

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

**profile**

*See* User Profile, DOMPLEX Profile, VTAM Router Profile, and filter profile.

**Report Manager**

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

**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.

**SmartDBA 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.

**SQL**

Structured Query Language. A language that can be used within programs and interactively to request information from a DB2 subsystem.

**SQL Explorer**

A BMC Software SQL analysis product used to proactively manage performance problems

**trace data sets**

The data sets allocated in the DOMPLEX Profile for the storage of DB2 trace records. Two data sets are allocated for each specification — one to store the trace records and one to store the index entries used to keep track of trace data.

---

<b>User Profile</b>	A collection of attributes that define a user's access to product functions and reports.
<b>VTAM Router</b>	The component of ACTIVITY MONITOR that enables users to access and perform most AM functions without using TSO and ISPF.
<b>VTAM Router Profile</b>	A collection of attributes that define a VTAM Router.
<b>ZOOM command</b>	A command used to move from summary data on one report to detailed information about the same data on other reports.

---

# Index

The following codes identify the products associated with product-specific index entries:

AFD	Application Performance
ASQ	APPTUNE
DOM	ACTIVITY MONITOR
PMD	Pool Advisor
PSS	SQL Explorer
SPD	System Performance
BDS	MAINVIEW for DB2 – DC

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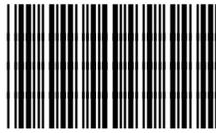
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