User's Guide

!DB®/DASD for DB2

Version 500

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Threaded Environment for AS/400, Patent No. 5,504,898; Data Server with Data Probes Employing Predicate Tests in Rule Statements (Event Driven Sampling), Patent No. 5,615,359; MVS/ESA Message Transport System Using the XCF Coupling Facility, Patent No. 5,754,856; Intelligent Remote Agent for Computer Performance Monitoring, Patent No. 5,781,703; Data Server with Event Driven Sampling, Patent No. 5,809,238; Threaded Environment for Computer Systems Without Native Threading Support, Patent No. 5,835,763; Object Procedure Messaging Facility, Patent No. 5,848,234; Communications on a Network, Patent Pending; End-to-End Response Time Measurement for Computer Programs, Patent No. 5,9991,705; Improved Message Queuing Based Network Computing Architecture, Patent Pending; User Interface for System Management Applications, Patent Pending.

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Contents

Read This First **9**
Preface 9
Summary 9
Audience 9
Contents 10
Adobe Portable Document Format 13
Documentation Conventions 14
Documentation Set 16

What's New **19**
Version 500 Changes 19

Chapter 1. Introducing !DB/DASD **21**
Introduction 21
Chapter contents 21
Overview of the Chapter 22
What Is !DB/DASD? 24
Benefits 26
Advantages of Using !DB/DASD Rather Than Database Compression 28
!DB/DASD Displays and Reports 29
Reading the Financial Analysis Report 30
Types of Data Sets in DB2 32
Batch Extracts and !DB/DASD 33
System PDS and !DB/DASD 34
!DB/DASD and DB2 35
System Considerations 36

Chapter 2. Introducing !DB/DASD Information **37**
Introduction 37
Chapter Contents 37
Structure of this Guide 38
Using !DB/DASD Online Help 40
Elements of a !DB/DASD Help Panel 41
Using Associated Publications 45

Chapter 3. Accessing and Exiting !DB/DASD **47**
Introduction 47
Chapter contents 47
Overview of the Chapter 48
Prerequisites and Guidelines for Accessing !DB/DASD 49
Accessing !DB/DASD Directly 50
Accessing !DB/DASD from OMEGAMON II for DB2 . . . 51

Exiting !DB/DASD 53
Overview of the Primary Menu 54
Using Multiple !DB/DASD Sessions 57

Chapter 4. Using !DB/DASD Facilities, ISPF, and Macros 61
Introduction 61
Chapter contents 61
Overview of the Chapter 62
Overview of Object List Panels 63
Using Selects on Object List Panels 65
!DB/DASD Facilities 67
ISPF Facilities 71
Printing Panel Information 74
Controlling Scrolling 76
Using SORT Commands 78
Using the LOCATE and FIND Commands 81
!DB/DASD Macro Facility 83

Chapter 5. Filtering Object Lists 87
Introduction 87
Chapter contents 87
Overview of the Chapter 88
Overview of Filtering 89
How to Use a Filter 91
Overview of the Filter Menu 94
Specifying Compare Types for Name and Status Filters . . . 96
Specifying a Name Filter for Objects 97
Specifying a Status Filter for Objects 100
Specifying a Value Filter for Objects 101

Chapter 6. !DB/DASD Displays 105
Introduction 105
Chapter contents 105
Overview of the Types of Data Displayed 106
Displaying DB2DASD Summary History 109
History Detail Display and Report 112
Displaying DB2 Volumes 113
Displaying Extents for a Volume 118
Displaying the VTOC 120
Displaying Migrated Data Sets 122
Displaying Volume History 126
Displaying a Multivolume Data Set 129
Displaying All DB2 Databases 134
Displaying Index and Table Spaces 137
Displaying Extents for a Data Space 142
Displaying Storage Groups 144
Displaying All VCATs 147
Displaying SMS Information 150

Chapter 7. Moving Data Sets **155**
Introduction 155
Chapter contents 155
Overview of the Chapter 156
Data Set Types 158
Changing Space Allocations 160
Migrated or Error Display 164
Size Analysis Display 165
Sorting the Data Sets 166
Volumes Options 167
Changing Individual Data Sets 169
Copy Options 172
Tape Copy Options 176
One Job Options 177
Image Copy Options 179
Job Card Options 180
Process Member Menu 181
Alter Options 182
Compressing Spaces 184
Selecting Names 185
Making Data Sets DB2-Managed 187
Making Data Sets User-Managed 189
Renaming Data Sets 192
Moving Data Sets between Storage Groups 196

Chapter 8. Examples Using MOVE **199**
Introduction 199
Chapter contents 199
Overview of the Chapter 200
Example 1–Moving One Volume to Another 201
Example 2–Reclaiming DASD Space 207
Example 3–Setting Up a Batch Job 214

Chapter 9. Dumping Data Sets **217**
Introduction 217
Chapter contents 217
Overview of the Chapter 218
Data Set Types 220
Migrated or Error Display 222
DUMP Options 223
Job Card Options 227
Process Member Menu 228

Chapter 10. Restoring Data Sets **229**
Introduction 229
Chapter contents 229
Overview of the Chapter 230
Data Set Types 232

Migrated or Error Display . . . 234
RESTORE Options . . . 235
Job Card Options . . . 238
Process Member Menu . . . 239

Chapter 11. Exceptions in Your DB2 System . . . 241
Introduction . . . 241
Chapter contents . . . 241
Overview of the Chapter . . . 242
Introduction to Migrated Data Sets . . . 243
Recalling a Migrated Data Set . . . 244
Deleting a Migrated Data Set . . . 245
Introduction to Orphan Data Sets . . . 246
Deleting an Orphan Data Set . . . 248
Introduction to Widow Data Sets . . . 250
Dropping Widow Data Sets . . . 252

Chapter 12. Tailoring the Job Stream . . . 253
Introduction . . . 253
Chapter contents . . . 253
Overview of the Chapter . . . 254
Variables in the Model Jobcard . . . 255
Model Statements . . . 256

Chapter 13. Options for Housekeeping and Administration . . . 259
Introduction . . . 259
Chapter Contents . . . 259
Background about Using the Housekeeping and Administration Options . . . 260
Accessing the Administration Menu . . . 262
Using the Profile Administration Options . . . 264
Specifying !DB/Tools Global Configuration Information . . . 266
Specifying !DB/Tools DB2 Configuration Information . . . 269
Specifying !DB/DASD Configuration Options . . . 272
Using the Activity Log Panel . . . 274
Displaying and Selecting Profiles . . . 277
Updating an Existing Profile . . . 279
Creating a Profile Using an Existing Profile . . . 280
Erasing an Existing Profile . . . 281
Understanding User Exits . . . 282

Chapter 14. Batch Utility . . . 283
Introduction . . . 283
Chapter contents . . . 283
Overview of the Chapter . . . 284
Introduction to the !DB/DASD Batch Utility . . . 285
Build Batch Jobstream Panels . . . 286
Commands Available to Select Objects . . . 288

Introduction to the MOVE Facility . . . 290
Introduction to the PRNT Facility . . . 294
Commands for Batch Operations . . . 295
PDSCOPY Command . . . 296
PDSEDIT Command . . . 298
PDSEXEC Command . . . 299
PDSLIST Command . . . 300
DD Statements for the Batch Utility . . . 301

Chapter 15. Defining Recall Options . . . 305
Introduction . . . 305
Chapter contents . . . 305
Overview of the Chapter . . . 306
The Recall Option Panel . . . 307
Changing the Values on the Recall Options Panel . . . 308

Chapter 16. Defining Clusters . . . 309
Introduction . . . 309
Chapter contents . . . 309
Overview of the Chapter . . . 310
The Define Cluster Panel . . . 311
Changing the Values on the Define Cluster Panel . . . 312

Chapter 17. Problem Resolution . . . 313
Introduction . . . 313
Chapter contents . . . 313
Overview of the Chapter . . . 314
Support for Resolution of Problems . . . 315
Determining the Level of Your !DB/DASD System . . . 316
Providing Information to Aid in Problem Diagnosis . . . 317
Using the Automated Trace Facility . . . 318

Appendix A. Using the Dynamic SQL Facility in !DB/DASD . . . 321
Introduction . . . 321
Chapter contents . . . 321
Overview of the Chapter . . . 322
Overview of the SQL Input Panel . . . 324
Accessing the SQL Input Panel . . . 326
Using Uppercase and Lowercase . . . 327
Guidelines for SQL Statements Entered Directly . . . 328
Executing Statements Entered Directly . . . 329
Executing Retrieved Statements . . . 330
Recovery from Errors . . . 331
Keyboard Mapping and SQL Statements Stored in a PDS Member . . . 332
Guidelines for SQL Statements Stored in a PDS Member . . . 333
Executing Statements Stored in a PDS Member . . . 335
Testing SQL Statements within a Program . . . 338

Interpreting the Report Displayed by !DB/DASD 340

Appendix B. Data Set History **343**

Appendix C. Candle Customer Support **345**
Customer Support Phone Numbers 347

Index **349**

Preface

Summary

!DB®/DASD for DB2 is a space management tool that allows you to recover wasted DASD space. It eliminates the

- Inherent risk and processing cost of a CPU database compression approach
- Time and technical knowledge required for a manual approach.

This User's Guide is designed to assist the database administrator in using !DB/DASD to manage DASD space on your system.

Audience

This document is written for DB2 users, specifically

- Technically sophisticated DBAs
- Applications developers with a working knowledge of DB2, SQL, ISPF, TSO, and JCL

Contents

Chapter 1—Introducing !DB/DASD

This chapter introduces !DB/DASD. It describes its features and benefits and the system environment it requires.

Chapter 2—Introducing !DB/DASD Information

This chapter introduces the information you receive with !DB/DASD—both printed and online.

Chapter 3—Accessing and Exiting !DB/DASD

This chapter contains information on prerequisites and procedures for accessing !DB/DASD either directly or from OMEGAMON II for DB2. In both cases, it contains instructions for access to !DB/DASD. It also includes information on exiting !DB/DASD. A short description of the primary menu for !DB/DASD is given along with instructions to use multiple sessions.

Chapter 4—Using !DB/DASD Facilities, ISPF, and Macros

This chapter provides an introduction to object list panels and how to use them. It also contains information about !DB/DASD facilities, commands, frequently-used ISPF functions, and macros.

Chapter 5—Filtering Object Lists

This chapter provides an overview of filtering from the command line and from the filter menu. It includes examples of how to select and use filters to control the display of data. By using filtering, you can quickly see a report showing only the data you need or isolate the data you want to modify.

Chapter 6—!DB/DASD Displays

This chapter contains information on the !DB/DASD data-reporting displays. It describes the general and specific information they provide for a DB2 system. It also explains the commands, sorts, select options, and filters that you can use on each display.

Chapter 7—Moving Data Sets

This chapter provides information about moving and altering data sets, both individually and in groups. It also tells you how to use the !DB/DASD panels that control the MOVE command and the Alter function.

Chapter 8—Examples Using MOVE

This chapter provides three examples using the MOVE facility: how to move all DB2 data sets from one volume to another; how to reallocate a group of data sets to save DASD space; and, how to set up a batch job to keep your system clean without any manual intervention.

Chapter 9—Dumping Data Sets

This chapter provides information about dumping data sets, both individually and in groups. It also tells you how to use the !DB/DASD panels that control the DUMP command.

Chapter 10—Restoring Data Sets

This chapter provides information about restoring data sets, both individually and in groups. It also tells you how to use the !DB/DASD panels that control the RESTORE command.

Chapter 11—Exceptions in Your DB2 System

This chapter provides instructions for identifying and managing exceptions in your DB2 system. The exceptions include migrated data sets, orphan data sets, and widow data sets.

Chapter 12—Tailoring the Job Stream

This chapter provides an introduction to tailoring the jobstream. The chapter contains information on the variables in the model jobcard. This chapter also contains background about the model JCL statements, the guidelines to follow to edit the statements, and the format of the member that contains the statements.

Chapter 13—Housekeeping

This chapter contains information on accessing the Adminstration Menu. The chapter provides an introduction to the administrative and housekeeping options. The chapter contains background about the options, changing the values for the options, and field definitions. The chapter also contains information on the Activity Log Facility of !DB/DASD.

Chapter 14—Batch Utility

This chapter provides background about the batch utility in !DB/DASD. The chapter contains information on the MOVE and PRNT facilities. The chapter also contains information on the commands available to select objects and the commands for batch operations.

Chapter 15—Defining Recall Options

This chapter tells you how to set !DB/DASD to prompt you before it recalls migrated data sets.

Chapter 16—Defining Clusters

This chapter tells you how to use !DB/DASD to define VSAM data sets.

Chapter 17—Problem Resolution

The chapter provides an overview of how to resolve problems that can occur when using software. It includes the resources available, an explanation of the ABEND diagnostic report, and instructions on how to contact Candle® Support Service if you need assistance in diagnosing the problem.

Appendix A—Using the Dynamic SQL Facility in !DB/DASD

This chapter provides information about accessing data with SQL from !DB/DASD. The chapter contains information on executing statements entered directly on the SQL Input panel, executing retrieved statements, and executing statements stored in a PDS member. It also includes information on testing SQL statements.

Appendix B—Data Set History

!DB/DASD uses a DB2 table to keep a history of all DB2 data spaces. During each extract, !DB/DASD adds to this table. There is one row per data space per extract. All of the data space information from the Data Sets display is kept in this table, along with the date and time of the extract.

Adobe Portable Document Format

Introduction

Candle supplies documentation in the Adobe Portable Document Format (PDF). The Adobe Acrobat Reader prints PDF documents with the fonts, formatting, and graphics in the original document. To print a Candle document, do the following:

1. Specify the print options for your system. From the Acrobat Reader Menu bar, select **File > Print Setup...** and make your selections. A setting of 300 dpi is highly recommended as is duplex printing if your printer supports it.
2. To start printing, select **File > Print** on the Acrobat Reader Menu bar.
3. On the Print popup, select one of the **Print Range** options for
   - a single page
   - a range of pages
   - all of the document
4. (Optional) To fit oversize pages to the paper size currently loaded on your printer, select the **Shrink to Fit** option.

Printing problems?

Your printer ultimately determines the print quality of your output. Sometimes printing problems can occur. If you experience printing problems, potential areas to check are:

- settings for your printer and printer driver. (The dpi settings for both your driver and printer should be the same. A setting of 300 dpi is recommended.)
- the printer driver you are using. (You may need a different printer driver or the Universal Printer driver from Adobe. This free printer driver is available at www.adobe.com.)
- the halftone/graphics color adjustment for printing color on black and white printers. (Check the printer properties under **Start > Settings > Printer**. For more information, see the online help for the Acrobat Reader.)
- the amount of available memory in your printer. (Insufficient memory can cause a document or graphics to fail to print.)

For additional information on printing problems, refer to the documentation for your printer or contact your printer manufacturer.

Documentation Conventions

Introduction

Candle documentation adheres to accepted typographical conventions for command syntax. Conventions specific to Candle documentation are discussed in the following sections.

Panels and figures

The panels and figures in this document are representations. Actual product panels may differ.

Revision bars

Revision bars (|) may appear in the left margin to identify new or updated material.

Variables and literals

In examples of command syntax, uppercase letters are actual values (literals) that the user should type; lowercase letters are used for variables that represent data supplied by the user. Default values are underscored.

```
LOGON APPLID(cccccccc)
```

In the above example, you type **LOGON APPLID** followed by an application identifier (represented by *cccccccc*) within parentheses. The number of characters indicates the maximum allowable length of the variable.

Note: In ordinary text, variable names appear in italics.

Symbols

The following symbols may appear in command syntax.

Symbol	Usage
|	The 'or' symbol is used to denote a choice. Either the argument on the left or the argument on the right may be used. Example: `YES | NO` In this example, YES or NO may be specified.
[ ]	Denotes optional arguments. Those arguments not enclosed in square brackets are required. Example: `APPLDEST DEST [ALTDEST]` In this example, DEST is a required argument and ALTDEST is optional.

{ }	Some documents use braces to denote required arguments, or to group arguments for clarity. Example:
	
	`COMPARE {workload} -`
	`REPORT={SUMMARY | HISTOGRAM}`
	
	The *workload* variable is required. The REPORT keyword must be specified with a value of SUMMARY or HISTOGRAM.

_	Default values are underscored. Example:
	
	`COPY infile outfile -`
	`[COMPRESS={YES | NO}]`
	
	In this example, the COMPRESS keyword is optional. If specified, the only valid values are YES or NO. If omitted, the default is YES.

b	The symbol b indicates a blank space, when needed for clarity.

Documentation Set

Introduction

Candle provides a complete set of documentation for !/DASD for DB2. Each manual in this documentation set contains a specific type of information to help you use the product.

Candle welcomes your comments and suggestions for changes or additions to the documentation set. A user comment form, located at the back of each manual, provides simple instructions for communicating with Candle's Information Development department. You can also send email to **UserDoc@candle.com**. Please include the product name, version, and book title in the subject line. To order additional manuals, contact Candle Customer Support.

The documentation listed in the following table is available for !DB/DASD.

Table 1. !DB/DASD Documentation

Doc Number	Title	Description
TD54-5841	*!DB/DASD for DB2 User's Guide*	This guide tells how to use !DB/DASD and provides a reference of functions and features.
TI51-5840	*!DB/Tools Installation and Customization Guide*	This guide tells how to install !DB/DASD as well as the other !DB/Tools products. It also contains information on security and authorizations.

Online documentation for BookManager

In addition to the printed versions, !DB/DASD documentation is available in BookManager format. Subsequent maintenance releases of the product between major releases will contain updated BookMaster documentation. See the *!DB/Tools Installation and Customization Guide* for information regarding the files.

For more information about using BookManager, see the appropriate IBM documentation as follows:

IF you want to ...	**THEN see ...**
put our book on a bookshelf,	*IBM BookManager BUILD/MVS Preparing Online Books* SC38-2036
display our book,	*IBM BookManager READ/MVS Displaying Online Books* SC38-2034

Version 500 Changes

Overview

This section describes what is different between !/DASD for DB2 and previous versions of !/DASD for DB2.

Differences in this release

Primarily, the Version 500 release of !/DASD for DB2 provides full compatibility for DB2 Version 6. However, some DB2 enhancements are not exploited by !/DASD for DB2 Version 500.

DB2 Version 6 contains enchancements for

- defining and manipulating data objects
- conducting e-business
- improving performance and availablity of database applications
- managing the database environment
- increasing database and query capacity

This release of !/DASD for DB2 also continues to support fully earlier releases of DB2 and is also Y2K compliant.

Chapter 1. Introducing !DB/DASD

Introduction

This chapter provides an introduction to !DB/DASD. It describes the features and benefits and the system environment !DB/DASD requires.

Chapter contents

Overview of the Chapter 22
What Is !DB/DASD? 24
Benefits 26
Advantages of Using !DB/DASD Rather Than Database Compression 28
!DB/DASD Displays and Reports 29
Reading the Financial Analysis Report 30
Types of Data Sets in DB2 32
Batch Extracts and !DB/DASD 33
System PDS and !DB/DASD 34
!DB/DASD and DB2 35
System Considerations 36

Overview of the Chapter

Overview

This chapter contains an overview of !DB/DASD and its benefits, the advantages of using !DB/DASD over manually managing your DASD resources, the panels and reports available in !DB/DASD, the types of data sets supported by DB2, information about the batch extract and the System PDS, and the system requirements for !DB/DASD.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then locate the page number of the units that you need for your task.

	About !DB/DASD	Benefits	Compression	Displays and Reports	Financial Analysis	Data Set Types	Batch Extracts	System PDS	Requirements
	p.24	p.26	p.28	p.29	p.30	p.32	p.33	p.34	p.36
Review overview of !DB/DASD	√	√	√						
Review benefits of using !DB/DASD		√							
Review why using !DB/DASD is preferred over manually managing your DASD resources			√						
Read an overview of the types of panel displays and reports used in !DB/DASD				√					
Review the Financial Analysis Report and the information on the report					√				
Review a high-level definition of the types of data sets supported by DB2						√			
Review the catalog extract that is created to use with !DB/DASD							√		
Review the key members of the System PDS required by !DB/DASD								√	
Review the system requirements for !DB/DASD									√

What Is !DB/DASD?

Overview

!DB/DASD is a DB2 space management tool that enables you to recover wasted DASD space. !DB/DASD eliminates:

- Inherent risks and processing costs of using a CPU database compression approach
- The time and technical knowledge needed to manually manage your direct access storage devices

Basic design

The !DB/DASD approach to simplifying DB2 space management is two-fold:

- **!DB/DASD provides a source of information about your DASD**

  Easy-to-understand panels and !DB/DASD reports supply the information you need to take corrective action.

- **!DB/DASD provides tools to control your DASD**

  !DB/DASD gives you the ability—primarily through powerful move, dump, and restore facilities—to quickly and efficiently recover the wasted DASD space occupied by your DB2 subsystems. In addition, you can *automatically* recover wasted DB2 DASD space at intervals you select based on parametric values you develop.

!DB/DASD information sources

With !DB/DASD panels and reports, you can

- Display information by volume, database, or table space, making it easy to identify exceptions and understand DASD constraints
- Print a report showing table space counts, DB2 storage utilization summary information, and DASD cost information, including a projection of potential savings over the next five years
- Find DB2 widows and orphans, simplifying the clean up of nonexistent and forgotten DB2 objects and VSAM data sets
- Locate over-allocated data sets, data sets in extents, migrated data sets, and multi-volume data sets
- View historical information on the number of data sets, number of extents, and space allocated compared against space used that you can use for DASD trend analysis and capacity planning
- View a log of your DB2 object activity

!DB/DASD control tools

With !DB/DASD, you can generate the necessary JCL to:

- Recover over-allocated space and consolidate extents
- Run !DB/DASD in batch on a predetermined schedule so you have an automatic, hands-free cleanup job
- Move an entire volume, dramatically improving DASD manager productivity
- Move data sets from one device to another, either individually or as a group
- Move data sets between volumes and storage groups.
- Downsize data sets during a move
- Dump and restore DB2 objects using the utility ADRDSSU
- Interact with DFHSM to recall or delete groups of migrated DB2 data sets

Benefits

Overview

!DB/DASD provides DASD management benefits, including:

- Correcting inaccurate DASD allocation
- Simplifying manual procedures
- Logging activity against DB2 objects
- Easy resubmission of already executed functions
- Information about volumes that use the IBM Storage Management Subsystem (SMS)

!DB/DASD fixes allocation inaccuracies

If the original allocation for a table space is too large, it wastes DASD space. Conversely, if the allocation is too small, the table space grows into inefficient secondary extents.

!DB/DASD lets you move DB2 table spaces to optimize DASD use. By using !DB/DASD to reallocate space, you can reclaim wasted space and allocate table space more accurately.

!DB/DASD simplifies manual procedures

!DB/DASD provides all the tools needed to move or reallocate a table space. In seconds, it generates

- All necessary statements
- All required JCL
- Job streams to move *sets* of table spaces at one time For example, the statements required to move table spaces on a volume or an entire database.

With !DB/DASD, it is no longer necessary to be proficient in DB2 to manage a DB2 system.

!DB/DASD logs DB2 object activity

!DB/DASD saves all submitted jobs and functions that affect the DB2 catalog or its objects in the Log PDS. This log enables you to track modifications to your DB2 system.

The log contains the following information for each action:

- Date and time
- Function
- ID of the target DB2 system
- USERID of the responsible TSO user
- Re-execution status
- Member name in the Log PDS

!DB/DASD provides easy resubmission capability

Although generating a function or job statement requires little time using !DB/DASD filtered displays, it is even simpler to re-execute using the Log PDS.

All Candle !DB/Tools provide this resubmission capability. You can re-execute any logged member directly from the Log PDS just by selecting the member with an **X**.

!DB/DASD provides hands-free cleanup

You can generate a batch job stream from the online panels to run !DB/DASD in batch. Then, you can run this job on a regular basis to clean up exceptions to your DB2 DASD standards.

Example: controlling extents

To reduce the number of extents, prepare a job to move any data set that is on more than 10 extents. Once !DB/DASD generates the job stream, you can submit the job on a regular basis by using a job-scheduling system. This provides a hands-free, cleanup facility.

Advantages of Using !DB/DASD Rather Than Database Compression

Compression vs. !DB/DASD

One solution to the problem of wasted DASD space is a database compression routine. However, there are problems associated with this method of recovering space.

This unit contrasts using a compression routine with !DB/DASD advantages.

Comparison of compression and !DB/DASD

The following chart shows the advantages of using !DB/DASD over a compression routine.

Compression Routine	!DB/DASD
Incurs high processing costs as it requires large amounts of CPU time	Eliminates high CPU costs
Brings DB2 down if the routine abends	Cannot bring DB2 down
Does not actually solve the problem because the size of the table space remains the same **Example:** If a table space is allocated to 100 tracks and only 25 are used, a compression routine would compress the data in the 25 used tracks to perhaps 15 tracks and leave 85 unused tracks in the table space. **Result:** Even though the data occupies less space, more space is being wasted.	Solves the problem by reallocating the table space more accurately **Example:** Rather than compressing the 25 used tracks, !DB/DASD reallocates the table space from 100 to perhaps only 30 tracks. **Result:** !DB/DASD recovers 70 wasted tracks.

!DB/DASD Displays and Reports

Overview

!DB/DASD displays and reports provide the information you need for DB2 space management.

Panel displays

!DB/DASD runs under TSO using the ISPF Dialog Manager, so data is presented in readily understandable object lists on ISPF scrollable panels.

Filtering features

!DB/DASD provides filtering commands for its object lists. Using these commands on object lists lets you

- Control the information in objects lists.
- Make the object lists easier to manage.
- Perform tasks on many table spaces in a single execution.

Reports

!DB/DASD allows you to print two types of reports:

- A report of any of the online object lists in batch.
- A financial analysis report each time a catalog extract is run. This report is a key DASD management and planning tool providing:
  - Data set counts
  - DB2 storage information
  - Estimated monthly cost of reclaimable DASD
  - Cost projections for the next five years based on current use

  A sample financial analysis report is shown in the next section of this unit.

Reading the Financial Analysis Report

Sample report

The Financial Analysis Report is created at catalog extract time as explained in the *!DB/Tools Installation and Customization Guide*. This is a sample report.

```
*************************************************************************
*                                                                       *
*            !DB/DASD FINANCIAL ANALYSIS FOR YOUR COMPANY NAME          *
*               FOR DB2 SYSTEM DB2X ON SEP 15, 1999                     *
*************************************************************************
                                    EXTENTS
               COUNT    # ACTIVE    /DATASET     # ERROR    MIGRATED
            ---------  ----------  ----------  ----------  ----------
CATALOG            38
TABLESPACES     7,431       4,350        2.14         699       2,382
INDEXES         7,591       4,907        1.46         355       2,329
=========================================================================
TOTAL          15,060       9,257        1.78       1,054       4,711
                                                      PCT
               COUNT      ALLOCATED           USED       USED    RECLAIMABLE
            ---------   ------------   ------------   --------   ------------
TABLESPACES     4,350       20,785MB        8,620MB     41.47%       12,165MB
INDEXES         4,907        4,651MB        2,034MB     43.72%        2,617MB
ORPHANS           110      102,610B                                 102,610B
=========================================================================
TOTAL           9,367       25,436MB       10,653MB     41.88%       14,783MB
                     119  DIFFERENT DASD VOLUMES CONTAIN DB2 DATASETS
*************************************************************************
*                                                                       *
* AT $3.00 PER MB OF DASD, TOTAL RECLAIMABLE SPACE COST = $44,348 PER MONTH. *
* AT $2.25 PER MB OF DASD, TOTAL RECLAIMABLE SPACE COST = $33,261 PER MONTH. *
* AT $1.75 PER MB OF DASD, TOTAL RECLAIMABLE SPACE COST = $25,870 PER MONTH. *
*                                                                       *
*************************************************************************
BASED ON DASD COST OF $2.35 PER MB AND GROWTH RATE OF  100% PER YEAR:
          TOTAL      TOTAL  RECLAIMABLE         NET     POTENTIAL
       DB2 DASD   COST/MTH         DASD        DASD       SAVINGS
      ---------   --------  -----------   ---------   -----------
NOW    25,436MB   $ 59,775     14,783MB    10,653MB   $   34,739   PER MONTH
                                                      $  416,872   PER YEAR
1996   50,872MB   $119,549     29,565MB    21,307MB   $   69,479   PER MONTH
                                                      $  833,744   PER YEAR
1997  101,744MB   $239,099     59,131MB    42,613MB   $  138,957   PER MONTH
                                                      $1,667,488   PER YEAR
1998  203,488MB   $478,197    118,262MB    85,227MB   $  277,915   PER MONTH
                                                      $3,334,976   PER YEAR
1999  406,976MB   $956,395    236,523MB   170,453MB   $  555,829   PER MONTH
                                                      $6,669,951   PER YEAR
FIVE YEAR TOTAL                                       $   12,923K
```

Contents of the report

The financial analysis report summarizes current DASD use and projects future needs and costs. It is divided into 4 sections:

- **Data set count information**

  The first section contains data set count information. Two key items in this section are:

  – **Multiple extents information**

    This provides an average number of extents for all DB2 table space and index data sets. If this average is much above two, conduct an analysis to find the data sets with high extents. Multiple-extent data sets contribute significantly to poor DB2 performance.

  – **Error data set count (widows)**

    These data sets, which are referenced in the DB2 catalog but not physically present, could cause application failures.

- **DB2 storage utilization information**

  The second section contains a space allocation analysis. This summary shows the total amount of space allocated to DB2, reported as:

  – Total amount of space allocated to DB2 data sets.

  – Actual amount of space used, in both bytes and percent of the total allocated.

  – Total potentially-reclaimable space.

  This section also identifies the space consumed by orphan data sets, data sets which have probably been dropped from DB2 with no corresponding VSAM delete.

- **Estimated monthly cost of reclaimable DASD**

  The third lists the total number of different DASD volumes containing DB2 data sets and calculates the monthly amount spent to accommodate DB2 over-allocation.

- **Five-Year cost projection**

  The projection extrapolates the current DASD utilization of DB2 over 5 years and computes the cost of the DASD over-allocation. The figure is based on a DASD cost and a growth factor that you supply for your company at installation.

Types of Data Sets in DB2

Overview

Understanding !DB/DASD displays and reports requires some background information on data set types in DB2 and what they contain. This unit provides this information.

Description

The following chart describes the types of data sets used in DB2.

Type of Data Set	Contents	Comments
User	User's !DB/DASD data and macros	Contains user JCL information, batch jobs, and !DB/DASD macros.
Catalog	DB2 system information	Listed by !DB/DASD summary reports for information purposes. Standard DB2 utilities disregard these data sets.
Table space	One or more DB2 tables	A single table space can contain multiple DB2 tables. DB2 manages the interleaving of pages internal to the data set.
Index	One DB2 index	Contains the DB2 keys for locating data sets.
Error or widow	Nothing	DB2 object exists in the DB2 catalog, but no VSAM data set exists.
Orphan	DB2 data	Physical VSAM data set exists but no DB2 object exists in the DB2 catalog.

Batch Extracts and !DB/DASD

Overview

Batch extracts from the DB2 catalog provide current data for !DB/DASD displays and reports. The catalog extract is a batch TSO job.

Types of data extracted for !DB/DASD

The data extracted from the DB2 catalog contains extensive information that includes data about:

- Data sets
- Databases
- Extents
- Orphans
- Page size
- Partitioned data sets
- Storage groups
- Table spaces
- VCATs
- Volumes
- Widows

Use

Except for the history reports, the information in !DB/DASD panel displays and reports reflects the DB2 catalog information captured by the latest extract.

Storage

!DB/DASD stores the extracts in the System (Extract) PDS.

Administration

Typically, it is best to schedule a batch extract during off hours when the system is lightly used.

DB2 performance

Because !DB/DASD uses the the System PDS built by the batch extract procedure, using !DB/DASD does not impact DB2 performance or jeopardize your DB2 catalog.

System PDS and !DB/DASD

Overview

The System PDS contains the !DB/DASD DB2 catalog extracts and control members. It is also referred to as the Extract PDS.

Contents

Refer to the following chart for a description of key System PDS members.

System PDS Member	Contents
DSDDATA1	Raw extract data
DSDDATA	Processed extract data
DSDSUMDT	System summary information
DT*xxxxxx*	Volume history information where *xxxxxx* is the volume name
OPTDASD	Profile options
Volume profiles	DB2 data sets not managed by SMS and the maximum percentage of the volumes to be allocated

Compression requirements

Running a DB2 catalog extract usually produces a large update to the System PDS. To help control the System PDS size, schedule an IEBCOPY compress before or after running the extract.

Controlling size

If the current System PDS runs out of room, create a new System PDS, as follows:

Step	Action
1	Allocate a new data set with a larger storage capacity.
2	Use IEBCOPY from the ISPF Option 3.3 to copy the contents of the old data set to the new data set.

!DB/DASD and DB2

Overview

This unit provides information about the relationship between !DB/DASD and DB2 and explains when to run an extract to see the changes !DB/DASD has made.

How !DB/DASD affects DB2

!DB/DASD displays data from the latest !DB/DASD extract of the DB2 Catalog. After you use !DB/DASD to MOVE or ALTER DB2 data sets, you must run a new extract before !DB/DASD data reflects the changes that were made.

When to run a new extract

The chart below outlines the !DB/DASD functions which require you to run a new extract. The Page column indicates where to find information on the function.

!DB/DASD function	Page	Run Extract?
Changing DB2-managed data sets to user-managed data sets	189	√
Changing user-managed data sets to DB2-managed data sets	187	√
Changing VCAT names	192	√
Deleting migrated data sets	243	√
Deleting orphan data sets	246	
Dropping widow data sets	250	√
Moving data sets	158	√
Moving data sets between storage groups	196	√
Recalling migrated data sets	243	√

System Considerations

!DB/DASD requirements

!DB/DASD requires the environment outlined in the chart below:

Environment	Requirement
Operating system	Any of the following: • MVS/SP • MVS/XA • MVS/ESA
Operating system enhancements	TSO/E
ISPF dialog management facility	Any of the following ISPF releases: • Version 3.1 • Version 3.2 • Version 3.3
Database management system	Any of the following DB2 releases: • Version 1.2 • Version 1.3 • Version 2.1 • Version 2.2 • Version 2.3 • Version 3.1
Terminal support	Any 3270 terminal using standard ISPF screen support
GDDM graphics support	None

Maintenance needs

!DB/DASD requires little ongoing maintenance. If the !DB/DASD System PDS, User PDS, or Log PDS becomes full, either

- Compress the data set, or compress the data.
- Increase its space allocation.

Chapter 2. Introducing !DB/DASD Information

Introduction

Information about !DB/DASD is available to you in several forms.

- This guide
- Online help
- Associated publications

This chapter describes the information available to assist you in using !DB/DASD and describes how the information works together to provide the best possible support for performing !DB/DASD tasks.

Chapter Contents

Structure of this Guide 38
Using !DB/DASD Online Help 40
Elements of a !DB/DASD Help Panel 41
Using Associated Publications 45

Structure of this Guide

Overview

This unit shows you how you can use this guide to increase your productivity.

How the structure of this guide improves your productivity

As you become accustomed to the structure of this guide, you can improve your productivity in the following ways:

- Quickly access pertinent information you need
- Avoid viewing information that is extraneous to the task you want to perform

Chapters

Major topics in this manual are organized into chapters. A chapter contains small, related task-based units of information. The title page of each chapter introduces the information found in the chapter and provides a table of contents so you can locate specific units easily.

Units

Each chapter is organized into small, task-based units containing one or more pages of information. Each unit has its own title that appears as a running heading at the top of all of the pages comprising the unit. For example, the title of this unit, “Structure of this Guide,” can be seen above.

Each unit starts with an overview. Reading the overview quickly tells you whether the unit contains the information you need. Thus, the amount of information you need to read is reduced.

Locating information you need

The chart shows the devices provided in this guide to help you locate the type of information you want.

Task you want to perform	Device to use
Understand the information provided by this guide	Skim the table of contents. (In this guide, the table of contents includes titles of units within each chapter so that you can determine the tasks covered in a chapter.)
Locate specific information about a task	Either: • Skim the table of contents • Consult the alphabetic index at the back of the book
Find panel images for the !DB/DASD object list and house-keeping panels	Consult the sections for each of these major !DB/DASD functions.

Using !DB/DASD Online Help

Overview

This unit contains brief instructions for using the online Help available with !DB/DASD.

Categories of online Help

Online Help falls into three categories:

1. Help for !DB/DASD panels
2. Help for ISPF facilities
3. Help for messages

Background about !DB/DASD online Help

In !DB/DASD, you can use online Help to access specific information about each panel. Help is available to describe the following:

- The contents of a specific field on a specific panel, if the field is a display field
- The tasks you can perform on a specific panel
- The values that may be input to a given field, if the field is one that can accept input
- The functions of the selects available for a given panel
- The functions of the commands available for a given panel for a given panel
- The availability of sorts and filters, and, for filters, their functions

Accessing online Help from a !DB/DASD menu or panel

Follow these steps to access online Help.

Step	Action
1	On a !DB/DASD menu or panel, type **HELP** on the Command line.
2	Press Enter, or press the appro\riate function key. **Result:** !DB/DASD displays the Help panel associated with the menu or panel you are using.

Elements of a !DB/DASD Help Panel

Overview

This unit illustrates the elements of a typical !DB/DASD Help panel.

Types of Help

There are three major types of Help panels in !DB/DASD. The first type provides overview or descriptive help for a given panel. The second type provides task-based Help for the panel. The task-based Help provides information about the commands and selects you can use on a given panel. If this is a data entry panel, the Help panel lists the possible values you can enter. If there are multiple Help panels for a given task, you can page through them using **MORE**.

!DB/DASD also provides Help for Help panels that tell you how to use !DB/DASD's Help.

Overview Help

This is a typical overview Help panel.

```
---------------------------------   D B / D A S D - DBID=D31A ----------------
Cmd ===>
----------------------- 1 - DATA SPACES DISPLAY -----------------------------

 This display lists information about each DATA SPACE in the DB2 Catalog.
 Each dataset is listed once for each volume it uses.  The  SPACE X of Y
 message in the upper right indicates the current display position in the
 complete display list.  An (F) indicates that filtering is in effect.

 The following information is shown on this display:
   2          3                                2              3
  DBNAME-- Data Base name.                 |  NO. XTS  -- Number of Extents in
  SPACE -- Data Space name.                |              this dataset.
  PT    -- Partition Number.  Blank        |  ALLO TRKS-- Number of tracks
           if no partition number.         |              allocated for this
  IX    -- Dataset Type.  This field       |              dataset.
           is blank for table spaces.      |  USED TRKS-- Number of tracks used
           spaces. There is an I in        |              in this dataset.
           this field for Index spaces.    |  %DS USED -- Percentage of allocated
  PQTY  -- Primary Quantity. Value in      |              tracks that are used.
           tracks.                         |  VOLSER   -- Volume that the dataset
  SQTY  -- Secondary Quantity. Value       |              uses.
           in tracks.                      |

              4  Press ENTER for select info, or  Press END to return.
```

1 Title of the Help panel

2 Fields appearing on the object list panel

Overview Help (continued)

3 Description of the fields, their definitions or purposes. For a field that permits data entry, the Help panel can provide the values that can be entered in the field.

4 Actions you can take from this Help panel.

Task Help

This is a typical task-based Help panel.

```
------------------------- Tasks for the Volumes Panel - 1 ------------------
Cmd ===>

                                     Function on the  Function in the
Task You Want to Perform             Command Line     Select Field
      2                                   3                4
------------------------------------ ---------------- ----------------
Display databases                                     D (DBDs)
Display extents                                       X (EXTENTS)
Display history                                       H (HISTORY)
Display number of tracks available   UNUSED           U (UNUSED)
Display table spaces                                  S (TBLSPCS)
Dump volume                          DUMP             D (DUMP)
Move table space                     MOVE             M (MOVE)
Print the display                    PRNT
Restore table space                  RESTORE          R (RESTORE)
------------------------------------ ---------------- ----------------
DISPLAY                                             HELP FOR HELP
```

1 Title of the Help panel

2 Tasks you can perform on the object list panel

3 Commands you can use

4 Selects you can use

5 Field that returns you to the object list panel

6 Field that takes you to Help for Help panel

Help for Help

This is a typical Help for Help panel.

```
-------------------- 1 --- Help for DB/DASD Help ----------------------------
Cmd ===>
Press ENTER to exit Help for Help.

  Accessing      To access related information, tab to the reference
  Related        phrase that is highlighted and press ENTER. You can
  Information    access OPTIONS for Help such as OVERVIEW or TASK. You
                 can also access reference phrases in the text.
2
  Accessing      More: is displayed on some panels. More: indicates more
  Information    information on the same topic. The +, -, >, and < indicate
  with More:     the direction.  To access the information, type the
                 command on the command line and press ENTER.

             Direction             Symbol with More:  Command to Use
             --------------------  -----------------  --------- -----
             Move forward          +                  F
3            Move backward         -                  B
             Move right            >                  R
             Move left             <                  L
--------------------------------------------------------------------------------
```

1 Title of the Help panel

2 Information about Help for Help

3 Information to assist you in navigating Help

Help for ISPF facilities

Use these steps to access Help for ISPF facilities.

Step	Action
1	On a !DB/DASD Help panel, type **HELP** on the Command line.
2	Press Enter, or press the appropriate function key. **Result:** !DB/DASD displays a general ISPF Help panel that discusses ISPF facilities.

Help for messages

If a processing error should occur when you are using !DB/DASD, an error message is displayed in the upper right hand corner of the panel. To obtain expanded information about the error message, review this chart.

Step	Action
1	On a !DB/DASD menu or panel that is displaying the error message, type **HELP** on the Command line.
2	Press Enter or press the appropriate function key. **Result:** !DB/DASD displays expanded information about the error condition.
3	Some messages have an additional level of Help. When the long message is displayed, you can press the appropriate function key again. If additional help is available, it will be displayed.

Using Associated Publications

Overview

This unit describes the associated publications available with !DB/DASD.

Publications list

In addition to this User's Guide, these associated publications can be available with !DB/DASD.

Associated publication	Purpose or use
!DB/Tools Installation Guide	This document provides detailed instructions on installing !DB/DASD and other Candle data base tools. It also provides information about running the !DB/DASD extract.
!DB/DASD Version Release Guide	This document highlights major features of a new version or release of !DB/DASD.
Technical Bulletins (optional)	A technical bulletin may be issued to support a small programming enhancement or other small technical changes to !DB/DASD when documentation is needed but the volume of material does not warrant reissuing the User's Guide.

Chapter 3. Accessing and Exiting !DB/DASD

Introduction

This chapter contains information on prerequisites and procedures for accessing !DB/DASD either directly or from OMEGAMON II® for DB2. In both cases, it contains instructions for access to !DB/DASD. It also includes information on exiting !DB/DASD. A short description of the primary menu for !DB/DASD is given along with instructions to use multiple sessions.

Chapter contents

Overview of the Chapter 48
Prerequisites and Guidelines for Accessing !DB/DASD 49
Accessing !DB/DASD Directly 50
Accessing !DB/DASD from OMEGAMON II for DB2 . . . 51
Exiting !DB/DASD 53
Overview of the Primary Menu 54
Using Multiple !DB/DASD Sessions 57

Overview of the Chapter

Overview

This chapter contains instructions for accessing !DB/DASD directly. It also contains two sets of instructions for accessing !DB/DASD indirectly from OMEGAMON II for DB2. The first set is for when you first set up !DB/DASD. The second set is used after you have set up the access path between OMEGAMON II for DB2 and !DB/DASD.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then locate the page number of the units that you need for your task.

	Prerequisites	Directly	If OMEGAMON II for DB2	Indirectly	Exiting	Primary Menu	Multiple sessions
	p.49	p.50	p.51	p.51	p.53	p.54	p.57
Access !DB/DASD indirectly (from OMEGAMON II for DB2) at initial set up	√		√	√			
Access !DB/DASD indirectly (from OMEGAMON II for DB2) after you have set up the system				√			
Access !DB/DASD directly		√	√				
Exit !DB/DASD					√		
Review the elements on the primary menu for !DB/DASD						√	
Establish multiple sessions using !DB/DASD							√

Prerequisites and Guidelines for Accessing !DB/DASD

Overview

This unit includes

- Information common to accessing !DB/DASD directly or indirectly (from OMEGAMON II for DB2).
- Prerequisites and guidelines for success in accessing !DB/DASD
- Information you need when accessing !DB/DASD.

Prerequisites

Before you can use the instructions in this chapter, be sure that the !DB/Tools CLIST library is allocated in the SYSPROC concatenation. You can also use ALTLIB in most circumstances. For more information, see *!DB/Tools Installation and Customization Guide*.

Prerequisites for accessing !DB/DASD

To access !DB/DASD, you must know the extract ID for the database subsystem. The extract ID is the logical DB2 subsystem ID. You create the extract ID either at installation or by using the Housekeeping option. For information about installation and extract procedures, see *!DB/Tools Installation and Customization Guide*.

You do not have to have DB2 running unless you are using the Orphan function or the SQL facility within !DB/DASD.

Reminder

Extracts with !DB/DASD differ from extracts with !DB®/EXPLAIN for DB2. !DB/EXPLAIN allows multiple extracts and permits masking. The extracts with !DB/DASD contains information on an entire DB2 subsystem. There are no options for a partial or selective extract.

General guidelines for successful access

For improved performance when accessing a CLIST, use a percent sign (%) in front of a CLIST name.

Accessing !DB/DASD Directly

Overview

Use this unit to access !DB/DASD directly, without going through OMEGAMON II for DB2.

Accessing !DB/DASD

Be sure you have also reviewed the unit "Prerequisites and Guidelines for Accessing !DB/DASD" on page 49. Follow the procedure outlined below to access !DB/DASD.

Step	Action
1	Type the appropriate value on the command line, as follows: • If you are on the TSO Command Processor panel (option 6 from the standard ISPF/PDF Primary Option Menu), then type **%KTC**. • If you are on any other ISPF panel, then type **TSO %KTC**.
2	Press Enter. **Result**: The system displays the Candle !DB/Tools Product Selection Menu.
3	Type **3** in the Select Product ID field.
4	If you want to use a different extract than the one named in the field, type the extract ID in the Extract ID field.
5	Press Enter. **Result**: The system displays the !DB/DASD Primary Menu.

Accessing !DB/DASD from OMEGAMON II for DB2

Overview

This unit describes the prerequisites and the steps to access !DB/DASD from OMEGAMON II for DB2.

Prerequisites to accessing !DB/DASD from OMEGAMON II for DB2

First, to access !DB/DASD from the primary option menu for OMEGAMON II for DB2, you must ensure that the KTC CLIST is available from the SYSPROC concatenation. The KTC CLIST is in the *hilev*.CLIST data set. See the *!DB/Tools Installation and Customization Guide* for further information.

Then, access OMEGAMON II for DB2 under ISPF.

Note: You must be using OMEGAMON II for DB2 version 260 and above.

The chart below shows what can happen when you use option 3 on the primary menu for OMEGAMON II for DB2.

IF the KTC CLIST ...	THEN the system displays ...
is available,	the !DB/Tools Product Selection Menu.
is not available,	a panel with information about the !DB/Tools

Requirements for accessing OMEGAMON II for DB2 under ISPF

To access !DB/DASD from OMEGAMON II for DB2, access OMEGAMON II for DB2 under ISPF by using the KO2SPF CLIST. The system displays the primary options menu which is required to access !DB/DASD from OMEGAMON II for DB2.

Note: If you need detailed instructions for accessing OMEGAMON II for DB2 using the KO2SPF CLIST, see *OMEGAMON II for DB2 Customization Guide*.

Accessing !DB/DASD

Ensure that the prerequisites listed above have been accomplished. Then follow the steps in this chart to access !DB/DASD.

Step	Action
1	On the primary options menu for OMEGAMON II for DB2, type **3** in the OPTION field.
2	Press Enter. **Result**: The system displays the Candle !DB/Tools Product Selection Menu.
3	Type **3** in the Select Product ID field.
4	If you want to use a different extract than the one named in the field, type the extract ID in the Extract ID field.
5	Press Enter. **Result**: The system displays the !DB/DASD Primary Menu.

Exiting !DB/DASD

Background on exiting !DB/DASD

You can use the !DB/DASD configuration options (available in Housekeeping) to set the operation of the RETURN command in a user's profile. The RETURN command can either:

- Display the !DB/DASD Primary Menu
- Exit !DB/DASD

Note: When the RETURN command is listed in a procedure, it is assumed that your user configuration has RETURN defined to exit !DB/DASD.

Exiting the product

Follow these steps to end a session and exit !DB/DASD.

Step	Action
1	Return to the Primary Menu for !DB/DASD.
2	Press End. **Result**: The result varies based on your previous action. • If you accessed !DB/DASD from OMEGAMON II for DB2, the system ends all other sessions and returns to the primary options menu for OMEGAMON II. • If you accessed !DB/DASD directly, the system exits !DB/DASD.

Overview of the Primary Menu

Overview

This unit describes the !DB/DASD Primary Menu, tells you how to make selections on the menu, and how to return from within !DB/DASD to the Primary Menu.

The Primary Menu panel

The first panel !DB/DASD displays is the !DB/DASD Primary Menu.

```
    1                                          2
PRIMARY MENU ----------------   D B / D A S D - DBID=DB2C ------------------
Cmd ===> 3                                                    99/12/07  07:36
                          P R I M A R Y    M E N U

    Option ===> 4               (Use  /"x"  to establish a window)

          ┌     S  Summary                          H  Housekeeping
          │     V  Volumes                          I  SMS Info
          │     M  Multivolume                      J  Batch Job
          │     B  Databases                        R  Recall Options
        5 │     D  Data Spaces                      U  Define Cluster
          │     O  Orphans                          X  Exit
          │     W  Widows                             Global Commands
          │     G  Stogroups
          └     C  VCATS                            SQL  Dynamic SQL

    Used=  44% 6   as of Last Extract run on  01/15/98  at 11:35 7
    Unused= 22.8%  8  of a Single Density Volume.

                                    9 Version: 500  Maint. Level: 9503  PSP: 1

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```

Field descriptions

The Primary Menu provides the following information:

1. Panel title
2. Name of the current DB2 system
3. ISPF command line
4. Option field.
5. Available functions
6. Percentage of used allocated DASD space as of the last extract date
7. Date of the last extract
8. Amount of unused space measured in 3380 single-density volumes
9. Version and date of the last maintenance release

Making a selection from the Primary Menu

!DB/DASD supports both standard menu selections and the use of multiple-level or fast path selections to go directly to a function. You will probably use fast paths after you become familiar with the panels.

Follow these steps to make a selection from the Primary Menu.

Step	Action
1	Either: • Type the character for the selection in the Option field. **Example:** Type **H** to select Housekeeping. • Type the fast path combination for the selection in the Option field. **Example:** Type **H.4** to select Housekeeping and administrative functions for user exits.
2	Press Enter.

Returning to the Primary Menu

To access the Primary Menu from any panel, press the appropriate function key, or type the RETURN command.

Result: The function key or command takes effect after all the selects are processed.

Pressing the appropriate function key or typing the RETURN command on a lower-level panel does not bypass the current selects.

Using Multiple !DB/DASD Sessions

Overview

!DB/DASD enables you to switch among multiple active sessions. This unit discusses the use of multiple sessions.

Background information on multiple sessions

Each session can have its own filters, screen position, and sorts. For example, you can have one session open for volumes and another for table spaces. When you switch to another session, it becomes the active session. The session you were using is suspended as you left it and can be resumed later.

In !DB/DASD, you can:

- Have up to 8 sessions active at the same time
- Open sessions for the following functions:
  - Main session
  - Summary history
  - Volume summary
  - Multivolume data sets
  - Databases
  - Data spaces
  - VCATs
  - Storage groups
- Have a function active in more than one session at the same time.

You can use session commands or the sessions menu to initiate and move among sessions, as explained in the following paragraphs.

Main session

The main session is the panel on which you first open a window for another session. If you initiate multiple sessions from the Primary Menu, the Primary Menu is the main session. You can change your main session base by selecting a function from the Primary Menu before initiating multiple sessions.

Special processing note

A special note applies to panels that require only Enter or End as a response. When you resume a session that displays such a panel, !DB/DASD responds as if you had pressed Enter or End on the panel and processes any inputs on the panel.

Session commands

The following guidelines apply to using session commands:

- All session switching commands begin with the forward slash (/).
- Type these commands on the command line of any !DB/DASD panel.

Refer to the following chart for a listing and explanation of the session commands.

Session Command	Switches to a Session for. . .
/B	Databases
/C	VCATs
/D	Data spaces
/G	Storage groups
/M	Multivolume data sets
/S	Summary history
/V	Volume summary
//	The main session
==/	The Primary Menu
/	The sessions menu

Ending a session

To end a session, use one of the following methods.

Method	Action
A	Press End as many times as necessary to return to the main session. **Result**: !DB/DASD returns to the main session at the point where you left it.
B	Type **=X** on the command line and press Enter. **Result**: !DB/DASD either displays the main session or ends all sessions and exits !DB/DASD, depending on the user option settings.

Using the sessions menu

The sessions menu lists available sessions.

Note: If PF key options appear on your sessions menu, you cannot see all the options on the sessions menu. To turn off PF key display, type **PFSHOW OFF** on the command line and press Enter.

Use the sessions menu to switch to another session or to return to your current session. To switch to another session from the sessions menu, use the procedure outlined in the chart below. To resume the current session from the sessions menu, press Enter.

Step	Action
1	Type **/** on the command line.
2	Press Enter. **Result**: The system displays the sessions menu. Any letters before sessions have the following meanings: **A** An active session **C** The current session **M** A session doing a MOVE **Q** A session displaying SQL output
3	Type the menu number for the session in the Select field. **Example**: To start or switch to a volumes session (number **3** on the menu), type **3**.
4	Press Enter. **Result**: The system suspends the session you were using and makes the volumes session the current session.

Chapter 4. Using !DB/DASD Facilities, ISPF, and Macros

Introduction

This chapter provides an introduction to object list panels and how to use them. It also contains information about !DB/DASD facilities, commands, frequently-used ISPF functions, and macros.

Chapter contents

Overview of the Chapter 62
Overview of Object List Panels 63
Using Selects on Object List Panels 65
!DB/DASD Facilities 67
ISPF Facilities 71
Printing Panel Information 74
Controlling Scrolling 76
Using SORT Commands 78
Using the LOCATE and FIND Commands 81
!DB/DASD Macro Facility 83

Overview of the Chapter

Overview

This chapter contains an overview of the object list panels in !DB/DASD and how you use them. It also contains information about the facilities available in !DB/DASD, the command, ISPF functions, and macros.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then, locate the page number of the units that you need for your task.

	Object List Panels	Selects	Commands and Filters	ISPF	Printing Panels	Scrolling	SORT Command	LOCATE and FIND	Macros
	p.63	p.65	p.67	p.71	p.74	p.76	p.78	p.81	p.83
Review the elements on an object list panel.	√								
Learn how to use selects on an object list panel.		√							
Review how the !DB/DASD interface works and its functions.			√						
Review the basic ISPF functions that are used frequently in !DB/DASD.				√					
Review how to print the information displayed on a panel.					√				
Review how to control scrolling on a !DB/DASD panel.						√			
Review the format for the SORT command, how to use it, and an example of its results.							√		
Review the LOCATE and FIND commands.								√	
Review how you can use macros in !DB/DASD.									√

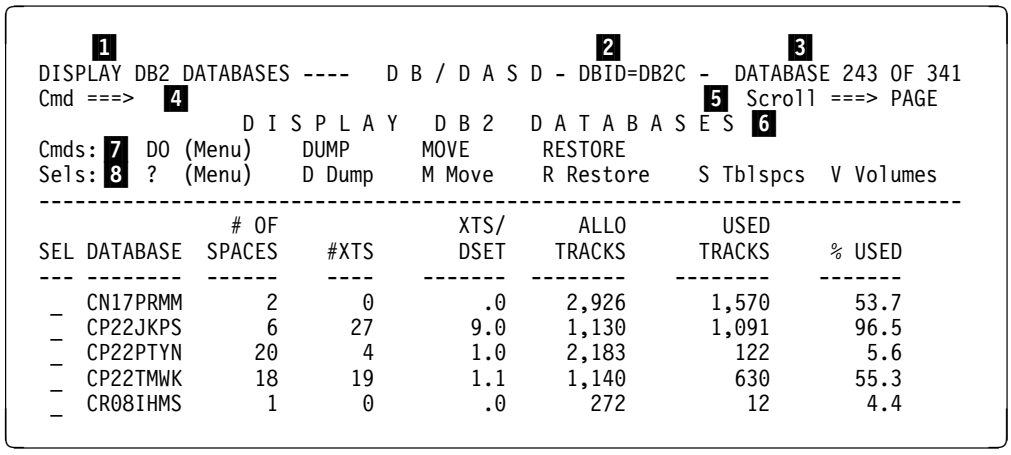
Overview of Object List Panels

Overview

This unit describes the elements of Object List panels and gives you an overview of how to use the functions that are available on the panels.

Elements of a typical object list panel

Object list panels vary in design, but they share typical elements. The databases panel shown is a typical object list panel.



Object list panels share these common characteristics:

1 Panel title. You can display the internal !DB/DASD panel ID by following the steps in "ISPF Facilities" on page 71.

2 Name of the current DB2 system

3 Statistics for the current list, including any blank and total lines if they are present. !DB/DASD also uses this area to display short error messages.

4 Command line on which to type ISPF or !DB/DASD commands.

5 Scroll amount

6 Panel title

7 Commands available on this object list panel

8 Selects available on this object list panel

Functions available on object list panels

On most object list panels, you can:

- Perform an action on all objects listed on the panel by typing a command on the command line.
- Perform an action on a selected object by typing the action code in the SEL field.
- Use ISPF functions by typing a command on the command line.

Using Selects on Object List Panels

Overview

This unit includes information on using selects on object list panels.

Commands available on object list panels

On most object list panels, you can type these commands:

- Switching commands (/)
- SQL commands
- TSO commands
- ISPF commands such as PRINT and PANELID

Select fundamentals

All selects in !DB/DASD are single characters, such as D, H, or R. However, you can select any number of different items at the same time, using the same or different selects for each. For example, you can specify **D** for each item, or **D** for one, **R** for another, and so forth.

Select processing

The system processes each select in order and performs nested selects to any level. Press the appropriate function key or type the END command to exit the current panel and display the next. The object list does not redisplay between successive selects. Check the PANELID to identify the current entry being displayed.

Using selects on object lists

Follow the procedure outlined below to select one or more objects from an object list.

Step	Action
1	Move the cursor to the line with the object you want.
2	Type the character for the selection in the SEL field. The cursor automatically moves to the next line.
3	Repeat steps 1 and 2 for any additional selections
4	Press Enter. **Result:** The system processes the selections in order without returning to the object list panel.

Cancelling selections

To cancel selects, follow the procedure below.

Step	Action
1	Type **CAN** on the command line.
2	Press Enter. **Result:** The system blanks out all the select characters and redisplays the panel.

!DB/DASD Facilities

Overview

The !DB/DASD facilities include the interface and the functions it makes available. This unit discusses key components of these facilities.

Display speed

!DB/DASD panels do not access DB2. The system generates the object lists without I/O so they display quickly, no matter how large your system. You can expect to see the object list in the time it takes to switch from one ISPF panel to another, since both operations are TSO trivial transactions.

The first selection takes a few seconds longer because !DB/DASD constructs all the internal tables it uses on this first select. If the first panel repeatedly takes a long time to appear, there may be a problem. Contact Candle for assistance.

Authorization for database access

You can see only those objects from the databases that you are authorized to access. If your installation has established a !DB/DASD exit or is using the exit supplied by Candle, then you may see only a portion of the entire DB2 system. If *all* databases are excluded, you receive message 1003 and are unable to use !DB/DASD.

For more information on access control using exits, see the Candle *!DB/Tools Installation and Customization Guide*.

Filters

Primary Menu selections list all items of the specified type defined in the DB2 system. You can control the size of these lists by using filters. Filters are qualifications or restrictions that you specify for the items in the lists. After you specify these filters, !DB/DASD displays only those items that meet the filtering criteria.

This facility reduces the lists to show more meaningful information and makes them more manageable. See Chapter 5, “Filtering Object Lists” on page 87 for more information.

Command processing

Type commands on the command line. Press Home to move the cursor to the command line quickly. When you type commands on the !DB/DASD object lists, the command processes *all objects in the list including the portion of the list that you do not see on the screen*. See Chapter 6, "!DB/DASD Displays" on page 105 for more information on the primary commands available for a specific panel.

Errors in processing

If an error occurs in processing any entry, !DB/DASD

- Displays the original object list with a short message in the upper right corner of the panel, and
- Places the cursor on the select that was in error.

Do one of the following:

- Change to another select code and press Enter.
- Blank out the select field and press Enter.
- Press Enter.

  This last action continues the processing for the next select function, but the error message for the incorrect select repeats on the next panel. Press Enter again to remove the message.

For detailed information on error messages and resolving errors, see Chapter 17, "Problem Resolution" on page 313.

Pop-up menus

!DB/DASD provides menus of available selects, filters, and commands in pop-up overlays. The following table lists the commands for accessing these pop-ups.

Type	Where	Press Enter to display
DO	Command line for any object list	Functions available
?	**SEL** field for an object list	Selects available
FILT	Command line for any panel	Filters available
/	Command line for any panel	Sessions within the product

END command functions

The END command

- Ends the current panel and returns to the previous panel.
- Exits from the !DB/DASD Primary Menu.
- Accesses the Product Selection Menu from the !DB/DASD Primary Menu
- Exits all products from the Product Selection Menu.

The END command takes effect after all the selection processing specified on the panel finishes.

Using the END command after selecting extents display

If you select one or more panel entries for extents display and then press the appropriate function key or type the END command, !DB/DASD

- Processes the selected entries first.
- Processes the END command second.
- Returns to the parent panel you were previously using.
- Does not redisplay the last panel you were using.

ISPF Facilities

Overview

You can type ISPF commands on the command line of the !DB/DASD panels. This unit provides a brief review of commonly used ISPF commands.

ISPF version supported by !DB/DASD Version 500

The !DB/DASD Version 500 no longer supports ISPF Versions 3.1 and 3.2. All of the !DB®/Tools Version 500 support IPSF 3.3 and above.

Displaying function key assignments

To display the function key definitions, type **PFSHOW** on the command line and press Enter.

On some panels, the function key assignments at the bottom of the screen cover the last two lines of text and prevent you from seeing some selections. Use the PFSHOW OFF command to remove the key information if needed.

Defining function keys

To redefine one or more function keys, type **KEYS** on the command line and press Enter.

Result: ISPF displays a panel on which you can view or change function key definitions.

In manipulating screen panels, !DB/DASD supports the function keys definitions for:

- Left
- Right
- Rfind
- Rchange
- Cursor

Using !DB/DASD without these key definitions is less convenient because you must type the commands rather than press a single key.

Identifying panels

To display the panel identifier on the screen, type **PANELID** on the command line and press Enter.

Result: !DB/DASD overwrites the panel title with the panel identifier. Turn this option off by using the PANELID OFF command.

Creating another ISPF session

You can create a second ISPF session, and you can also run !DB/DASD in each session if your system has sufficient memory.

To create another ISPF session, either

- Type **SPLIT** on the command line and press Enter, or
- Press the appropriate function key.

Using TSO commands from a !DB/DASD panel

To run a CLIST or another TSO command, type the TSO *commandname* on the command line and press Enter.

Example: The following command displays the system time:

TSO TIME

Receiving error messages

ISPF displays error messages in the upper right corner of the screen. You can display an explanation of the message by pressing the appropriate function key or typing the HELP command while the short message is still on the screen.

Displaying online help

Review this table for information on displaying online help.

Information You Want	Action
Help from !DB/DASD	Press the appropriate function key, or type **HELP** on the command line and press Enter. **Result**: !DB/DASD displays the !DB/DASD help panel.
Help for ISPF	Use one of the following methods: • Press Help twice. • Type **HELP** on the command line and press Enter. Next, type **HELP** on the !DB/DASD help panel command line and press Enter. **Result**: !DB/DASD displays the ISPF help panel.
Help for a displayed error message	Press Help, or type **HELP** on the command line and press Enter. **Result**: !DB/DASD displays the long-text form of the message.

Printing Panel Information

Overview

The !DB/DASD PRNT command prints the entire contents of an object list. The ISPF PRINT command prints only what currently shows on your screen.

!DB/DASD creates a separate file each time you use the **PRNT** command and prints the file as soon as the printer is available.

Procedures

You have two options for printing panel information. Refer to the chart for the procedure for each option.

IF you want to print ...	THEN type ...
The current physical screen image,	**PRINT** on the command line and press Enter. **Result**: ISPF initiates deferred printing of the current physical screen image, including any split-screen information.
A complete list of objects, including objects not currently displayed on the screen,	**PRNT** on the command line and press Enter. **Result**: !DB/DASD initiates immediate spooling of a hardcopy to a JES printer. The hardcopy includes the undisplayed information.

PRNT command format

The format of the PRNT command is:

PRNT *class destination*

where:

class is any valid SYSOUT class except "*"
destination is any valid printer destination

The PRNT command cannot be abbreviated.

After you use the PRNT command once, the system remembers the *class* and *destination* for you as ISPF profile variables. These variables are saved as the defaults after you exit !DB/DASD. Any subsequent **PRNT** commands that you type without the variables use the default *class* and *destination*.

Controlling Scrolling

Overview

This unit contains instructions for scrolling panel information. ISPF displays TOP OF DATA and END OF FILE notices that mark the beginning and the end of the panel information.

Controlling the scroll direction

Refer to the chart for information on scrolling through a list.

IF you want to scroll ...	THEN ...
Toward the beginning of the list,	Type **UP** on the command line and press Enter, or press the appropriate function key.
Toward the end of the list,	Type **DOWN** on the command line and press Enter, or press the appropriate function key.
To the beginning of the list,	Either type: • **TOP** (for maximum scroll up) on the command line and press Enter, or • **M** (for Maximum) on the command line and press Scroll Up.
To the end of the list,	Either type: • **BOTTOM** (for maximum scroll down) on the command line and press Enter, or • **M** (for Maximum) on the command line and press Scroll Down. **Result**: !DB/DASD displays a full screen instead of just the last line.

Controlling the scroll direction (continued)

The chart for scrolling continues.

IF you want to scroll ...	THEN type ...
Right to see hidden text	**RIGHT** on the command line and press Enter, or press the appropriate function key.
Left to see hidden text	**LEFT** on the command line and press Enter, or press the appropriate function key.

Controlling the scroll amount

To change the number of lines that the program uses when it scrolls,

- Type the appropriate value in the **SCROLL** field.

  P (Page) for scrolling by full page

  H (Half) for scrolling by half page

  C (Cursor) for cursor scrolling

  n for scrolling by a specified number (***n***) of lines

- Press Enter.

  Result: The system uses the number of lines you specified to scroll all panels, including the one you are currently using.

Using SORT Commands

Overview

The SORT command lets you find information quickly. It is available on most scrolling panels and lets you rearrange data by field to see the specific information quickly. For example, you can use the SORT command on the volumes panel to list the volumes according to the number of data sets or the number of allocated tracks they contain.

SORT command format

The format of the SORT command is:

SORT *keyword*

or

SORTD *keyword*

where:

keyword is a required, 2-character sort code that specifies the type of sort. The codes are abbreviations for the fields on the panel. To display a list of keywords available for a panel, type **SORT ?** on the command line and press Enter.

The following guidelines apply:

- A required space separates the command and the keyword.
- The 2-character *keyword* is an abbreviation for a field on the panel.
- By default, the system sorts the information on a panel according to the information in the first field.
- The SORT command sorts the information in the sort field in ascending order (smallest to largest, A to Z).
- The SORTD command sorts the information in the sort field in descending order (largest to smallest, Z to A).

Using the SORT command

Use the procedure below to use the SORT command.

Step	Action
1	Type the appropriate value on the command line: • To sort in ascending order, type **SORT** *keyword* • To sort in descending order, type **SORTD** *keyword* **Example:** The SORTD XT command on the databases panel displays the databases with the most extents at the top of the list.
2	Press Enter. **Result:** The system sorts the data according to the command and *keyword* and redisplays it.

Use the procedure below to return a display to its default order.

Step	Action
1	Type **SORT** on the command line.
2	Press Enter. **Result:** The system redisplays the data in its original order.

Example of sorted data

In the original databases panel, the data is shown sorted by database name.

```
DISPLAY DB2 DATABASES ----   D B / D A S D - DBID=DB2C ---- DATABASE 1  OF 137
Cmd ===>                                                   Scroll ===> PAGE
                 D I S P L A Y   D B 2   D A T A B A S E S
Cmds:   DO (Menu)     DUMP      MOVE      RESTORE
Sels:   ?  (Menu)     D Dump    M Move    R Restore    S Tblspcs   V Volumes
-------------------------------------------------------------------------------
                # OF                XTS/      ALLO        USED
SEL DATABASE  SPACES    #XTS        DSET    TRACKS      TRACKS     % USED
--- --------  ------    ----     -------  --------    --------    -------
 _  ATLGA01        6       3         1.0        34           4       11.8
 _  BBDB001        3       3         1.0         3           3      100.0
 _  CDBDBD        10      26         2.6       982         978       99.6
 _  DBEDB1        10      10         1.0       175          35       20.0
 _  DBEUR01       33       1         1.0       403         235       58.3
 _  DBKENT         9      22         2.8        54          30       55.6
 _  DBMAZZA        1       0          .0         2           0        0.0
 _  DBSECR22       9      15         1.9        86          67       77.9
 _  DBSEDB         2       0          .0        34           3        8.8
 _  DBTDBD         2       1         1.0        60          30       50.0
 _  DSNDB04      190     337         1.8       501         388     77.4.0
```

Type **SORTD SP** and press Enter.

Result: The system redisplays the scrollable panel information to list the database with the most table spaces at the top of the list.

```
DISPLAY DB2 DATABASES ----   D B / D A S D - DBID=DB2C ----- DATABASE 1 OF 137
Cmd ===>                                                   Scroll ===> PAGE
                   D I S P L A Y   D B 2   D A T A B A S E S

Cmds:    DO (Menu)    DUMP       MOVE       RESTORE
Sels:    ?  (Menu)    D Dump     M Move     R Restore   S Tblspcs    V Volumes
-------------------------------------------------------------------------------
                # OF                XTS/      ALLO        USED
SEL DATABASE  SPACES    #XTS        DSET    TRACKS      TRACKS     % USED
--- --------  ------    ----     -------  --------    --------    -------
 _  DSNDB04      190     337         1.8       501         388       77.4
 _  USCUSTDB     101      62        10.8     5,586       3,361       60.2
 _  UKTECSUP      98     137         1.5       529         420       79.4
 _  USSCHREQ      81     351         4.3       730         687       94.1
 _  TDDB03DB      75     107         1.4       119         119      100.0
 _  USSHADOW      62     333         5.7     2,797       2,722       97.3
 _  USMISDIC      61      64         1.0       176          76       43.2
 _  DSNDB06       49     187         3.8     1,619       1,384       85.5
 _  USPMPREF      46      52         1.1       272         226       83.1
 _  USEMPL        42      47         1.1        47          47      100.0
 _  DBEUR01       33       1         1.0       403         235       58.3
```

Using the LOCATE and FIND Commands

Overview

Most of the scrolling panels allow the use of the **LOCATE** or **FIND** commands to set screen position. A message in the upper, right corner indicates the current position on the object list. For example, the message **DATABASE 1 OF 137** means the list is ordered with the the first database at the top of the list.

LOCATE or FIND command format

The formats for the **LOCATE** and **FIND** commands are:

LOCATE *search-string*

FIND *search-string*

where:

search-string is a numeric or alphanumeric string of characters that you specify for the search

The following guidelines apply:

- The LOCATE command can be abbreviated as **L**, and the FIND command can be abbreviated as **F.**
- A required space separates the command and the search string.
- The *search string* contains the numeric value or the first part of the name of the object in the sorted field.
- If the current object list is unsorted, the LOCATE or FIND command works on the first field (column) of the object list. If the list is sorted, the LOCATE command workks on the sorted column.
- The information scrolls to the first entry that equals or exceeds the value entered at the top of the list.

Example of using SORT and LOCATE together

To position the Display DB2 Spaces panel to the first table space with 9 or more extents, type **SORT XT** and press Enter. Then, type **L 9** and press Enter.

This command combination sorts the table spaces by extents and then locates the first one with 9 or more extents.

Using the LOCATE and SORT commands

Enter the **LOCATE** or **SORT** command following the procedure outlined in the chart below.

Step	Action
1	Type the appropriate value on the command line: • For the LOCATE command, type on the command line either of the following: – **L *search-string***. – **LOCATE *search-string*** • For the FIND command, type on the command line either of the following: – **F *search-string*** – **FIND *search-string*** **Example:** Enter the **L inf** command on the databases panel to scroll the object list to the first database that begins with INF.
2	Press Enter. **Result:** The system finds the first item that satisfies the *search-string* and places it at the top of the list.

!DB/DASD Macro Facility

Overview

You can use the ISPF facility to create macros for !DB/DASD Macros contain combinations of commands and selects that work as a single, multi-step task. Using macros enables you to automate some routine tasks. This unit explains how you can use the macro facility.

Requirements

The commands and selects in the macro must be valid for the panel on which you use the macro. For example, a macro can contain any valid command or select for the databases panel as long as you invoke the macro on the databases panel.

Macro guidelines

Observe the following guidelines in using macros:

- Use the ISPF edit facility to create a member for the commands and selects in the macro.
- Begin the name of the member with a dollar sign ($).
- Place all macros in the user PDS.
- Confirm that the commands and selects you place in the member are valid.
- If you need to continue a macro line, use a plus sign (+) as the last character in the line being continued.
- Invoke a macro by entering its member name in the command field of the panel the macro is to act upon.
- You cannot invoke macros from the Primary Menu, housekeeping, widows, or orphans panels.

Example: database macro

You can use the following macro on the databases panel: This macro produces a hardcopy report of all data sets in database TEST01 that are on more than 10 extents.

```
DB = TEST01
S S /XTNTS>10/PRNT/END
```

Useful commands for macros

Certain commands are especially useful when developing macros. These include PRNT, END, *, SELECT, and ? commands. The following guidelines apply to their use:

PRNT and END Work the same way in macros as they do online.

***** Adds comments to your macros. The asterisk (*) must be the first character in columne 1 of the macro comment line. You *cannot* continue comment lines with a plus (+) character.

S (SELECT) Applies a single select value to all objects on the current panel. For example, **S X** displays information about extents for any objects on the current panel that have one or more extents. The SELECT command only selects those objects shown on the screen, not the entire list of objects.

? Suspends macro processing for the current panel to allow user input. The question mark (?) must be on a line by itself. This command is unique to macro processing and is required for any panel involving interactive input. For example, use it with the MOVE function.

Example of a macro to use !DB/DASD

The following macro prints a list of all table spaces in more than 10 extents and then displays the first MOVE processing panel.

```
XTNTS >10
PRNT
MOVE
?
```

Macros with nested SELECT commands

You can include SELECT commands within other SELECT commands. However, each select in the macro must use a different delimiter.

Example: nested SELECTs macro

The following macro is valid for the volumes panel. It prints a list of all the table spaces on every volume shown on the panel by database.

```
S D /S S<PRNT<END/END
```

This macro performs the sequence of operations outlined in the chart below.

Step	Action
1	Selects all databases on the first volume (S D).
2	Selects all table spaces in that database on that volume (S S). Inside the second select, the delimeter must be different from the forward slash (/) character, therefore, the less than (<) character is used.
3	Prints the screen.
4	Issues the END command to return to the databases panel.
5	Issues the END command to return to the volumes panel. The nested select is finished, so the first delimeter (/) is used to issue the END command.
6	Processes the next select on the volumes panel.
7	Repeats the cycle until all selects on the volumes panel have been processed.
8	Redisplays the volumes panel after the processing finishes.

Chapter 5.
Filtering Object Lists

Introduction

This chapter provides an overview of filtering from the command line and from the filter menu. It includes examples of how to select and use filters to control the display of data. By using filtering, you can quickly see a report showing only the data you need or isolate the data you want to modify.

Chapter contents

Overview of the Chapter 88
Overview of Filtering 89
How to Use a Filter 91
Overview of the Filter Menu 94
Specifying Compare Types for Name and Status Filters . . . 96
Specifying a Name Filter for Objects 97
Specifying a Status Filter for Objects 100
Specifying a Value Filter for Objects 101

Overview of the Chapter

Overview

The chapter contains information and examples for filtering. It includes information about these topics:

- Methods for entering filters on the command line or from the FILT menu
- Information about defining comparisons for filters on the FILT menu or from the command line

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then, locate the page number of the units that you need for your task.

	About Filtering	Using Filters	Filter Menu	Name and Status Filters	Name Filter	Status Filter	Value Filter
	p.89	p.91	p.94	p.96	p.97	p.100	p.101
Learn about filtering and the types of filters.	√	√	√	√	√	√	√
Review the filter menu and its fields.			√				
Learn how to specify the type of comparison for the Name and Status filters.				√			
Learn how to specify a Name filter for an object.					√		
Learn how to specify a Status filter for an object.						√	
Learn how to specify a Value filter for an object.							√

Overview of Filtering

The purpose for filtering

Filtering displays objects that meet the criteria you specify. Filtering can increase your productivity while reducing errors in your operation. The chart lists common reasons for filtering and contains examples.

Reason for Filtering	Example
Display a subset of the object list so you can review information easily.	Display only the databases whose names begin with "DSN."
Identify exceptions	Display all data sets with more than 2,000 tracks allocated. Display all data sets with less than 20% of allocated space being used.
Display a subset list for an operation or for processing.	Identify for MOVE processing all data sets with more than 5 extents and 200 tracks allocated. Print a report of migrated datasets that have not been refreshed in more than 365 days.

Filter types

There are three types of filters in !DB/DASD:

- Name filters
- Status filters
- Value filters

Not all of the filters are meaningful on every panel. For example, the **%Used of Volume** filter does not apply to the Data Sets panel, and the **Days Migrated** filter only applies to the Migrated Data Sets panel.

Types of compares

There are three types of compares in !DB/DASD:

- Equal
- Not equal
- Outside

Only the listed objects that *exactly* match the criteria for the compare appear in a filtered list. The compares for the name and status filters are either "equal to" or "not equal to" some value; compares for a value filter can specify ranges.

Effects of filtering from one panel to another panel

Any filters that you set apply to all panels for which a Name, Status, or Value filter are appropriate. For example, the DB filter is a valid filter for the Databases, Data Spaces, and Multivolume Data Sets panels. If you type **DB=DSSPN93** on the Display DB2 Databases panel, the value applies to the Display DB2 Spaces panel and Display DB2 Mulitvol Dset panel as well. Thereafter, anytime you use a panel with a DB filter, !DB/DASD uses the same value that you set on the Display DB2 Databases panel.

Because of the differences in the data on each panel, you can type a filter value on one panel, where it has limited consequences, and the filter can cause significant consequences on another.

How to Use a Filter

Overview

This unit contains information about using and resetting filters. You can apply filters to each of these objects:

- Volumes
- Multivolume data sets
- Table spaces
- Databases
- VCATs
- Storage groups

Methods for using filters

Two methods exist for using filters:

- You can type a filter and keyword directly on the command line.
- You can use the filter menu.

How to use filters from the command line

The chart shows to use a filter from the command line. (The method does not cover the variety of wild cards and option codes available from !DB/DASD. These details are covered in subsequent units.)

Step	Action
1	On a panel, type the keyword for the filter, an equals sign (=), and the value on the command line. **Example:** On the Database panel, type **DB=** and the name of the database on the command line.
2	Press Enter. **Result**: The system filters the object list using the first value you set and then displays the object list.
3	Type the next keyword for the filter, an equals sign (=), and the value on the command line. **Example:** To list the databases with more than 2 extents, type **XTDS>2** on the command line.
4	Press Enter. **Result**: The system filters the object list using the values you set for the two filters and then displays the filtered object list.

How to use filters from the menu

The chart shows how to use filters from the filter menu. (This method does not cover the variety of wildcards and option codes available with !DB/DASD. These details are covered in subsequent units.)

Step	Action
1	On the panel, type **FILT** on the command line.
2	Press Enter. **Result**: The system displays a menu that lists the filters and the current setting.
3	Type a value for the type of compare in the specified field. **Example:** On the Databases panel, type **E** for equals in the Comp (name compare) field.
4	If appropriate, type a value for a Name filter in its specified field. **Example:** Type the database name in the DB= field.
5	If appropriate, type a value for a Status filter in its specified field. **Example:** Type **I** in the TYPE field to filter on index spaces.
6	If appropriate, type a value for a value filter in its specified field. Type an opcode and value in the fields beside the filter. **Example:** Type **> 2** in the XT/DSET field to display all data sets with more than 2 extents on the named database. (A 1-character opcode entered on the Filter menu requires a space either before or after the opcode.)
7	Press Enter.
8	Type END on the command line and press Enter, or press the appropriate function key. **Result**: The system filters the object list according to the values you set and then displays the filtered object list.

How to reset values for filters

The following chart shows the different ways to reset a filter.

To reset ...	THEN ...
A specific filter from the command line,	Type the keyword for the filter and the equals sign (=). Press Enter.
A specific filter on the FILT menu,	Use one of the following methods: • Delete the value in the Comp field. • Type **O** (for off) in the Comp field. Press End.
All filters,	Type **NOF** (or NOFILT) on the command line. Press Enter.

How to identify if filtering is in effect on a panel

If filtering is in effect, the system displays an F in the upper right corner of the panel, next to the count for the line, for example, 1 of 147F.

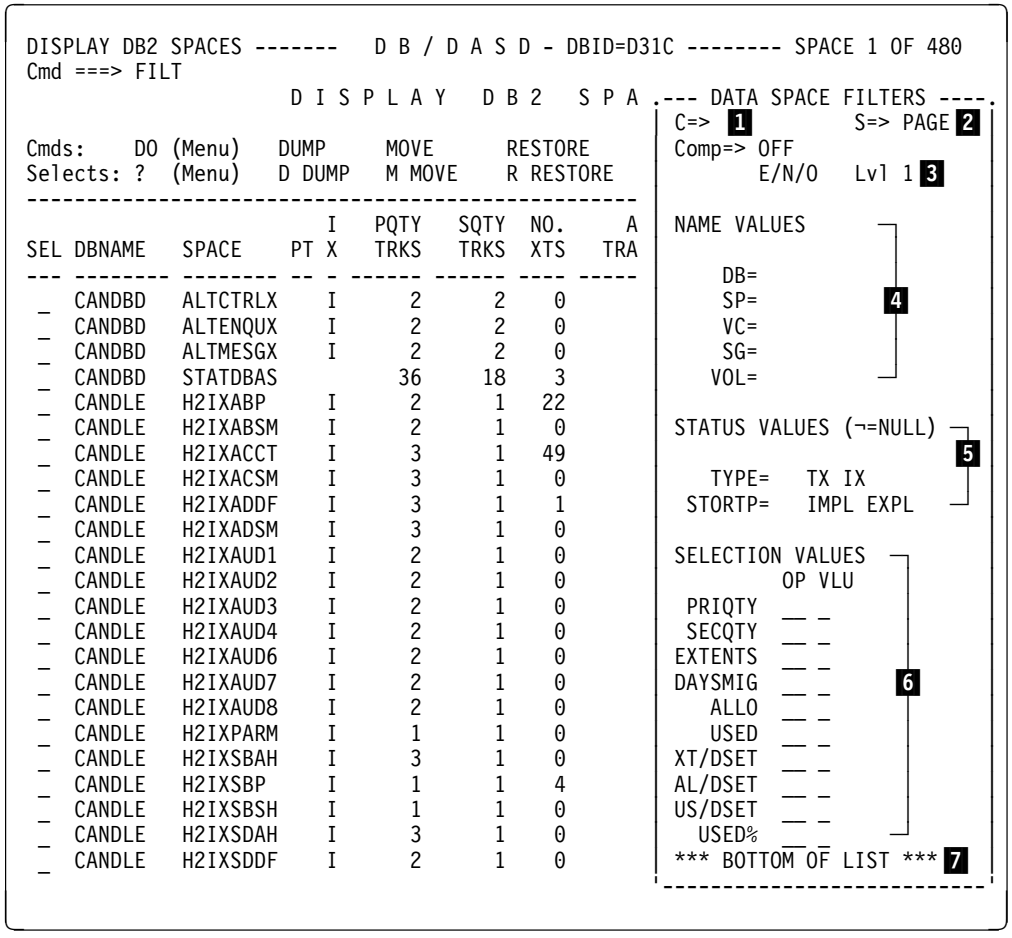
Overview of the Filter Menu

Overview

This unit describes the Filter menu.

Menu pop-up for filters

The **FILT** command (with no operands) displays the current filter settings and allows you to change them on the panel. This is the filter menu.



Field definitions

The list shows the sections that can be displayed on the Filter pop-up menu.

1 Command line

2 Used for scrolling

3 Used for comparisons. Determines the type of compare for Name or Status filters: equal, not equal, or off

4 Used for name values. Specifies a filter for databases, table spaces, VSAM catalogs, storage groups, or volume serial names

5 Used for status values. Specifies a filter for data set type or storage type

6 Used for selection of numeric values. Specifies an opcode and value filters for value compares

7 Bottom of list

Specifying Compare Types for Name and Status Filters

Overview

This unit tells how to specify the type of comparison for Name and Status filters from the command line and from the menu.

Specifying the type of comparison from the command line

The chart shows the comparison commands for Name and Status filters and describes actions for them.

Actions You Want the System to Perform	Command to Use
Identify and display all values that are *equal* to the specified filters.	FILT=E
Identify and display all values that are *not equal* to the specified filters.	FILT=N
Turn *off* filtering (but maintain the values for the filters).	FILT=O

Specifying the type of comparison from the filter menu

The chart contains comparison commands for filters and describes the system actions for them. Place the appropriate value in the Comp field.

Action You Want the System to Perform	Value in the Name Compare (Comp) Field
Identify and display all values that are *equal* to the specified filters.	E
Identify and display all values that are *not equal* to the specified filters.	N
Turn *off* filtering (but maintain the values for the filters).	O

Specifying a Name Filter for Objects

Overview

This unit includes background information on Name filters and the special characters available for specifying them. It also includes examples of using these special characters with names.

Background information

Name filters require you to specify a type of compare as explained in "Specifying Compare Types for Name and Status Filters" on page 96. The names that you can specify vary with the panels. You can enter the exact name, or you can mask names for objects such as databases, table spaces, volumes, storage groups, and so forth. You can specify the exact name or the masked name in two ways:

- On the command line
- On the filter menu in the any of the following fields:

Field	Explanation
DB=	database
SP=	table space name
VC=	VSAM catalog name
SG=	storage group name
VOL=	volume serial name

Special characters for name filters

The chart lists special characters for name filters and explains what each special character represents in a string or at the end of a string.

Special Character	Representation within a String	Representation at the End of a String
*	One or more characters exist at that position.	Any character can be in the position, and more characters can follow the asterisk (*) character.
_	A character exists at that position	Any single character can be in the position.
¬	No character exists at that position	No character can be in the position, and no character can follow the not sign (¬) character.

Examples for specifying name values

In the examples shown in the chart, these are the names of the databases available to be filtered.

CASPNN	DSQRS
CASPNN1	DSSPN
DASPN	DSSPNN
DSAPN	DSSPO

The chart show examples of using special characters in specifying Name values.

Names You Want to Display	Values for Filters	Objects Displayed After Filtering
All tables that begin with DSS	TB=DSS*	DSSPN DSSPNN DSSPO
All tables with SS as the 2nd and 3rd characters	TB=*SS*	DSSPN DSSPNN DSSPO
All tables that begin with DS and include P as the 4th character	TB=DS*P* or TB=DS_P*	DSAPN DSSPN DSSPNN DSSPO
All tables that end with NN as the 5th and 6th characters	TB=****NN¬	CASPNN DSSPNN
All tables that have NN as the 5th and 6th characters and can have a 7th character	TB=****NN_	CASPNN CASPNN1 DSSPNN
All tables that begin with DS and are 5 characters or less	TB=DS***¬ (with FILT=E)	DSAPN DSQRS DSSPN DSSPO
All tables that begin with DS and are over 5 characters	TB=DS***¬ (with FILT=N)	DSSPNN

Specifying a Status Filter for Objects

Overview

The unit includes background information about the operation of Status filters and explains how to specify their values.

Background information

Status filters require you to specify a type of compare as explained in "Specifying Compare Types for Name and Status Filters" on page 96. You can specify a Status Value in two ways:

- On the command line
- On the filter menu in the following fields:

TYPE= where:
T equals table space
I equals index space

STORTP= where:
I equals an implicit DB2-defined value
E equals explicit user-defined value

Specifying a Status compare from the command line

The chart contains Status commands for filters and describes the system actions for them.

Action You Want the System to Perform	Command to Use
Filter objects by index spaces.	TYPE=I
Filter objects by table spaces.	TYPE=T
Filter objects by implicit storage.	STORTP=I
Filter objects by explicit storage.	STORTP=E

Specifying a Value Filter for Objects

Overview

The unit includes background information about value filters and the methods for entering them. It also includes a chart that lists the option codes for value filters and examples of their use.

Background information

The filters for values operate differently from both name filters and status filters. Value compares each have their own compare operation.

Methods to use value filters

Value filters consist of the keyword, an option code, and a number where the format is:

KEYWORD *opcode value*

You can specify these filters in two ways:

- On the command line
- On the filter menu

Option codes for value compares

Review the chart for option codes you can use to specify value compares.

Note: On the Filter panel, the opcode field is 2 characters long. Therefore, when you use an opcode that is only 1 character long, type a space either before or after the opcode.

Comparison of the Value in the Database	Required Option Code	Example
Equal to the value in the filter	=	Extents= 4
Less than the value in the filter	<	Extents< 4
Greater than the value in the filter	>	Extents> 4
Less than or equal to the value in the filter	<=	Extents<=4
Greater than or equal to the value in the filter	>=	Extents>=4

Keywords for value compares

The value filters you can specify vary with the panels. The following list contains keywords for value compares. Use them in the filters you set on the command line or from the menu.

Keyword	Explanation
PRIQTY	primary quantity in tracks
SECQTY	secondary quantity in tracks
XTNTS	number of extents
DSETS	number of data sets
ALLO	number of allocated tracks
USED	number of used tracks
DAYSMIG	number of days migrated
XT/DSET	number of extents per data set
AL/DSET	number of allocated tracks per data set
US/DSET	number of used tracks per data set
USED%	percentage of allocated tracks that are used
ALLOVL%	percentage of volume allocated
USEDVL%	percentage of volume used

Example—value compares

The following commands are examples of value compares. They list all data sets that have 0 extents:

XTNTS< 1 (Do not include the space after the < sign if using the command line.)

XTNTS= 0 (Do not include the space after the = sign if using the command line.)

XTNTS<=0

Chapter 6. !DB/DASD Displays

Introduction

This chapter contains information on the !DB/DASD data-reporting displays. It describes the general and specific information they provide for a DB2 system. It also explains the commands, sorts, select options, and filters that you can use on each display.

Chapter contents

Overview of the Types of Data Displayed 106
Displaying DB2DASD Summary History 109
History Detail Display and Report 112
Displaying DB2 Volumes 113
Displaying Extents for a Volume 118
Displaying the VTOC 120
Displaying Migrated Data Sets 122
Displaying Volume History 126
Displaying a Multivolume Data Set 129
Displaying All DB2 Databases 134
Displaying Index and Table Spaces 137
Displaying Extents for a Data Space 142
Displaying Storage Groups 144
Displaying All VCATs 147
Displaying SMS Information 150

Overview of the Types of Data Displayed

Overview

!DB/DASD presents data derived from the DB2 catalog. It uses the latest DB2 catalog extract to generate its displays.

Types of data displayed

The following chart gives an overview of the type of information you can display and what panel shows the display.

For this type of information ...	To display this level of detail ...	Use this panel to access the data ...
History	Summary history for all extracts	Primary Menu
	History for one extract	DB2DASD Summary History panel
	History for one volume	Display DB2 volumes
Volumes	All volumes with DB2 data sets	Primary Menu
	History for one volume	Display DB2 Volumes
	Table spaces on a volume	Display DB2 Volumes
	Databases on a volume	Display DB2 Volumes
	Extents for a volume	Display DB2 Volumes
	VTOC information for a volume	Volume Extents display
Databases	All databases	Primary Menu
	Table spaces on a database	Databases display
	Volumes for a database	Databases display
	Databases on a volume	

Types of data displayed (continued)

The chart showing the types of data displayed is continued.

For this type of information ...	To display this level of detail ...	Use this panel to access the data ...
Data sets	Multivolume data sets	Primary Menu
	Migrated data sets	Display DB2 Mulitvol Dset panel
	All data sets	Primary Menu
	Extents on a data set's volume	Display DB2 Volumes
	Data sets for a storage group	Display Storage Groups panel
	Data sets for a VCAT	Display VCATS panel
Storage groups	All storage groups	Primary Menu
	Data sets on a strorage group	Display Storage Groups panel
VCATs	VCATs in a a DB2 catalog	Primary Menu
	Data sets on a VCAT	Display VCATS panel
Extents	Extents for a data set volume	Display DB2 Volumes
	Table space extents	Display DB2 Spaces, then Display DB2 Volumes
	Extents for a volume	Display DB2 Volumes
Table spaces	Table space extents	Display DB2 Spaces panel, then Display DB2 Volumes
	Table spaces in a database	Databases display
Index spaces	Index space extents	Display DB2 Spaces panel, then Display DB2 Volumes
	Index spaces in a database	Databases display

Display options

This chart includes brief instructions for accessing information for actions you want to perform with objects on an object list panel.

Online Lists of Options	Action to Perform
Commands available	On the panel, type **DO** on the command line. Press Enter.
Selects available	On the panel, type **?** in the select field for the object you have selected. Press Enter.
Sorts available	On the panel, type **SORT ?** on the command line. Press Enter.
Filters available	On the panel, type **FILT** on the command line. Press Enter.

Displaying DB2DASD Summary History

Overview

The DB2DASD Summary History panel is accessed by selecting **S** from the Primary Menu. There is one line displayed for each extract that has been done. This display is useful for trend analysis since it shows the percentage of allocated space that is actually used at the time of each extract.

```
DB2DASD SUMMARY HISTORY --   D B / D A S D - DBID=DB2C ------- SUMMARY 1 OF 49
Cmd ===>                                                    Scroll ===> PAGE
              D B 2 D A S D   S U M M A R Y   H I S T O R Y

Selects: D Detail
-------------------------------------------------------------------------------
                      # OF   # OF MIGRAT *ERROR    XTS/    ALLO    USED  % ALLO
SEL     DATE   TIME   VOLS  DSETS  DSETS  DSETS    DSET      MB      MB    USED
--- -------- ------ ------ ------ ------ ------ ------- ------- ------- -------
 _  04/19/99  16:49     52  2,746  1,455     33     3.4   1,255     991      79
 _  01/20/99  15:34     30  2,415  1,490      4     3.6   3,982   3,689      93
 _  01/20/99  15:10     30  2,415  1,490      4     3.6   3,982   3,689      93
 _  01/20/99   8:27     29  2,412  1,489      4     3.6   3,976   3,686      93
 _  01/13/99   6:05     30  2,379  1,465      4     3.7   3,491   3,240      93
 _  01/12/99  16:43     30  2,379  1,464      4     3.7   3,493   3,242      93
 _  01/07/99   8:10     26  2,353  1,472     31     4.0   3,881   3,630      94
 _  01/06/99  16:24     28  2,349  1,472     31     3.9   3,875   3,625      94
 _  11/01/99   6:19     31  2,170  1,356     35     3.6   1,010     802      79
 _  11/01/99   5:51     31  2,169  1,356     35     3.6   1,010     802      79
 _  10/29/99  16:32     32  2,169  1,354     35     3.6   1,010     803      79
 _  10/22/99   9:40     21  2,167    475     31     3.4   1,315   1,087      83
 _  10/15/99   7:44     24  2,159    468     31     3.4   1,310   1,083      83
 _  10/06/99  11:55     21  2,133    458     31     3.4   1,309   1,083      83
 _  09/03/99   4:49     27  1,871    164     32     3.3   1,298   1,068      82
 _  08/27/99   7:29     25  1,850    176     40     3.4   1,293   1,064      82
 _  08/26/99   5:49     24  1,847    175     40     3.4   1,289   1,063      82
 _  08/25/99  11:16     25  1,847    174     40     3.4   1,287   1,061      82
 _  08/25/99   9:07     25  1,855    174     40     3.4   1,288   1,061      82
 _  08/23/99  15:50     25  1,842    172     43     3.4   1,288   1,061      82
 _  08/23/99  13:55     26  1,842    172     40     3.4   1,289   1,062      82
 _  08/23/99   6:53     26  1,841    175     32     3.6   1,442   1,214      84
 _  08/18/99   7:29     26  1,838    197      4     3.7   3,465   3,221      93
 _  08/18/99   6:43     26  1,838    197      4     3.7   3,464   3,219      93
 _  08/17/99  14:12     26  1,838    193      4     3.7   3,465   3,221      93
 _
```

Display fields

The following field definitions are for the DB2DASD Summary History panel.

DATE Date of the extract. The list is in date/time order, from the most recent to the oldest.

TIME Time of the extract.

 # OF VOLS Number of volumes containing data sets in this DB2

 # OF DSETS Total number of table spaces in this DB2 system.

MIGRAT DSETS Number of migrated data sets.

***ERROR DSETS** Number of *ERROR data sets. See the section on Widow data sets in Chapter 11, “Exceptions in Your DB2 System.”

XTS/DSET Average number of extents per table space. This calculation does NOT include migrated or *ERROR data sets.

ALLO MB Number of allocated tracks in megabytes.

USED MB Number of used tracks in megabytes.

% ALLO USED Percent of allocated space that is used.

Commands

You can use the following primary commands on the DB2DASD Summary History panel by typing the command on the command line and pressing Enter.

PRNT Print the current display.

UBROWSE Browse specified user PDS member(s).

UEDIT Edit specified user PDS member(s).

Select options

Only one select options is available on the DB2DASD Summary History panel.

D Display detail for this summary. See "History Detail Display and Report" on page 112 for an example of the resulting display.

Filters

No filter commands are available on the DB2DASD Summary History panel.

History Detail Display and Report

Overview

Use the **D** select on the DB2DASD Summary History panel to request a History Detail Report for a specific extract. See "Displaying DB2DASD Summary History" on page 109 for more information on the DB2DASD Summary History panel.

You can print this report using the PRNT command.

DB2DASD History Detail panel

```
DB2DASD HISTORY DETAIL --------   D B / D A S D - DBID=DB2C -----------------
Cmd ===>                                                    Scroll ===> PAGE
                          S U M M A R Y   D E T A I L

 Press PF15 to return to previous screen.

              10/18/99  DATE OF EXTRACT
                 19:04  TIME OF EXTRACT

                   129  VOLUMES
                13,450  DATASETS
                 3,791  MIGRATED DATASETS
                   854  *ERROR DATASETS
                     0  MULTIVOLUME DSETS
                12,939  EXTENTS
                   1.5  EXTENTS/DATASET
   ALLOCATED:
              24,577.4  MB
               614,436  TRACKS
                  69.8  TRACKS/DATASET
   USED:
              11,578.6  MB
               289,464  TRACKS
                  32.9  TRACKS/DATASET
                   47%  USED/ALLOCATED
```

Displaying DB2 Volumes

Overview

The Display DB2 Volumes panel is accessed by selecting **V** from the Primary Menu. This panel summarizes information for each volume that contains any DB2 data set known to this DB2 system.

The object lists become nested through selects. For example, if you select **B** for a particular volume, the next list will be of all databases on the previously selected volume. If you then select **S** for a particular database, the following list will be of all table spaces in the selected database which occur on the selected volume.

Display DB2 Volumes panel

```
DISPLAY DB2 VOLUMES -----   D B / D A S D - DBID=D31C -------- VOLUME 1 OF 19
Cmd ===>                                                     Scroll ===> PAGE
                    D I S P L A Y    D B 2    V O L U M E S

Cmds:    DO (Menu)  DUMP       MOVE       RESTORE    UNUSED
Sels:    ?  (Menu)  B DBDs     D Dump     H History  M Move
                    R Restore  S Tblspcs  U Unused   X Extents
------------------------------------------------------------------------------
                 # OF      # OF      ALLO      USED   % VOL   % VOL     AVAIL D
SEL VOLSER  DATASETS   EXTENTS    TRACKS    TRACKS    ALLO    USED    TRACKS M
--- ------ --------- --------- --------- --------- ------- ------- --------- -
 _  *ERROR        53         -         -         -     0.0     0.0
 _  DB2001     1,955     2,215    38,198    23,011    25.4    15.3
 _  MIGRAT       405         -         -         -     0.0     0.0
 _  OMON44        11        11       338        22     0.7     0.1
 _  PPSMPA     1,953     2,373    19,257     8,924    38.4    17.8
 _  PPSMPF         3         3        78        33     0.2     0.1
 _  PPSMPK         1         1        30        30     0.1     0.1
 _  PPSMPZ         2         2        31        31     0.0     0.0
 _  PPSMP3         1        52     3,510     3,510    10.5    10.5
 _  PRI022         1         1       285         6     0.9     0.0          *
 _  PRI023         4         4         4         4     0.0     0.0          *
 _  PRI026         2         2         2         2     0.0     0.0          *
 _  PRI027         2         2         2         2     0.0     0.0          *
 _  PRI030         2         2         2         2     0.0     0.0          *
 ****************************** BOTTOM OF LIST ********************************
```

Display fields

The following field definitions are for the Display DB2 Volumes panel.

VOLSER Volume serial number. The list is in order by volume serial number with the exception of the MIGRAT and *ERROR data sets. MIGRAT designates migrated data sets, and *ERROR designates widow data sets. See the sections “Introduction to Migrated Data Sets” on page 243 and “Introduction to Widow Data Sets” on page 250 in Chapter 11, “Exceptions in Your DB2 System.”

 # OF DATA SETS Number of table spaces on this volume.

 # OF EXTENTS Number of extents on this volume.

 # OF TRACKS Number of allocated tracks on this volume.

USED TRACKS Number of used tracks on this volume.

% VOL ALLO Percentage of the volume that is allocated to DB2 data sets. (Allocated tracks/Number of tracks)

% VOL USED Percentage of the volume that is used by DB2 data sets. (Used tracks/Number of tracks)

AVAIL TRACKS Number of unallocated tracks on volume. This field will be blank until the **R** select is used on a particular volume or until the volume is used during MOVE processing.

DM Volumes being managed by the IBM Storage Management Subsystem (SMS). This field contains an asterisk (*) if the volume is using (SMS).

Commands

You can use the following primary commands on the Display DB2 Volumes panel by typing the command on the command line and pressing Enter.

CAN	Cancel all selects.
DO	Show pop-up overlay of valid commands
DUMP	Dump all DB2 volumes
FILT	Display Filter Menu.
LOCATE (L)	Position the display to a value in the sorted field.
MOVE	MOVE all table spaces on all volumes listed.
PRNT	Print the current display.
RESTORE	Restore all DB2 volumes.
SORT(D)	Sort the current display.
UBROWSE	Browse specified user PDS member(s).
UEDIT	Edit specified user PDS member(s).
UNUSED	Show available space in all DB2 volumes.

Sorts

To use the sort command, type **SORT** *xx* and press Enter. Substitute the variable *xx* with one of the following which are available on the Display DB2 Volumes panel.

The following sorts are available on the Display DB2 Volumes panel.

VL volser

SP # of table spaces

XT # of extents

AL allo tracks

US used tracks

%A %vol. allocated

%U %vol. used

Select options

The following select options are available on the Display DB2 Volumes panel.

D Dump the databases on this volume.

H Display the History for this volume. See "Displaying Volume History" on page 126 for more information.

M Move all table spaces on this volume. See Chapter 7, "Moving Data Sets" on page 155 for more information on the MOVE command.

R Restore tables spaces for this volume.

S List all table spaces on this volume.

U List all unused space on a volume.

X List all extents of this volume, including freespace.

? Display a pop-up overlay of valid selects.

Filters

The following filter commands are effective on the Display DB2 Volumes panel.

AL/DSET Number of allocated tracks per data set

ALLO Number of allocated tracks on volume

ALLOVL% Percentage of volume that is allocated

DSETS Number of table spaces on volume

EXTENTS Number of used extents on volume

US/DSET Number of used tracks per data set

USED Number of used tracks on volume

USED% Percentage of allocated space that is used

USEDVL% Percentage of volume that is used

VOL Volume serial

XT/DSET Number of extents per data set

For example:

```
USED%>60
```

lists all volumes with more than 60% of the space allocated for DB2 data sets actually used.

Displaying Extents for a Volume

Overview

The Diplay Extents panel lists the contents of the entire volume. All types of files and data sets are listed. The display shows freespace as well as used extents.

Displaying information about extents

To display information about extents, first access the Volumes panel by entering **V** on the Primary Menu. Then, use the X select for any volume in the list to display information on its extents.

```
EXTENTS ON DB2T01 --------   D B / D A S D - DBID=D31C -------- EXTENT 1 OF 10
Cmd ===> _                                                    Scroll ===> PAGE
                    E X T E N T S     O N     V O L U M E

Cmds:    VTOC       END
-------------------------------------------------------------------------------
 STRT ADR     END ADR        USED
 CYL  TRK    CYL  TRK    XT# TRKS DATASET NAME
---------   ---------   ---- ---- ------------------------------------------
   0    0      4    9            *NOT DB2 SPACE
   4   10      4   11      1    2 DB=KTSDBD     SP=ALTCTRLX
   4   12    157   14            *NOT DB2 SPACE
 158    0    159   14      1   30 DB=KTCDBD     SP=PLANTBLS
 160    0    221    9            *NOT DB2 SPACE
 221   10    221   11      1    2 DB=KTSDBD     SP=ALTENQUX
 221   12    221   13      1    2 DB=KTSDBD     SP=ALTMESGX
 221   14   1889   14            *NOT DB2 SPACE
1890    0   1892   14      1   30 DB=KTSDBD     SP=STATDBAS
1893    0   2656    0            *NOT DB2 SPACE
 ****************************** BOTTOM OF LIST ********************************
```

Display fields

The following field definitions are for the Extents on <volumeid> panel.

DBNAME Database name.

SPACE Table space name.

STRT ADR Starting address. This address is in cylinder-track format.

END ADR Ending address. This address is in cylinder-track format.

XT# Extent number. The relative number of this extent in the data set. This is the logical, not the physical, extent number.

USED TRKS Used tracks. The number of tracks used in this extent.

Displaying the VTOC

Overview

Access this display with the **VTOC** command on the Volume Extents display (**X** select from Volume display). It shows you VTOC information about the volume and allows you to identify non-DB2 data sets that are on "dedicated" DB2 volumes.

VTOC Info <volumeid> panel

```
VTOC INFO 7KM149 ---------   D B / D A S D - DBID=DB2C ------- SPACE 1 OF 145
Cmd ===>                                                    Scroll ===> PAGE
                       V T O C    I N F O    V O L U M E
 Press END to return to previous screen.
-------------------------------------------------------------------------------
                                                 STRT ADR     END ADR   # OF
DATASET NAME                                      CYL TRK     CYL TRK    XTS
-------------------------------------------- ---------   ---------   ----
DB=MB24001    SP=MB24ALLC                      1689    2   1689    7      1
DB=MB24001    SP=MB24AROW                       628    0    635   14      1
DB=MB24001    SP=MB24CELL                       146    0    165   14      1
DB=MB24001    SP=MB24CLMN                       636    0    641   14      1
DB=MB24001    SP=MB24CSDT                       219    0    220   14      1
DB=MB24001    SP=MB24CSD1                       575    0    576   14      1
DB=MB24001    SP=MB24CSHD                       577    0    578   14      1
DB=MB24001    SP=MB24CSSF                       579    0    580   14      1
MB24001.MB24DESK.TESTSITE.LOAD                  595    2    597    1      1
MB24001.MB28DISP.MBR2.ASM                         8    0      8    6      1
DB=MB24001    SP=MB24FGDC                       597    2    599    1      1
DB=MB28006    SP=MB24GRCD                        16   14     18   13      1
DB=MB28006    SP=MB24HELP                         8    7      8   11      1
```

Sorts

To use the sort command, type **SORT** *xx* and press Enter. Substitute the variable *xx* with one of the following which are available on the VTOC Info *volumeid* panel.

!DB/DASD displays DB2 data sets as **DB=** *xx*, **SP=** *xx*. Non-DB2 data set names are shown in their entirety.

The following sorts are available on the the VTOC Info <volumeid> panel.

DB data set name

ST starting address

ND ending address

#X # of extents

Displaying Migrated Data Sets

Overview

If the **S** select is used on the MIGRAT volume on the Volumes display, the Migrated Datasets panel is shown. This is the only way to access this panel. The information shown on this panel is obtained from DFHSM during the extract.

Migrated Datasets panel

```
MIGRATED DATASETS ---------   D B / D A S D - DBID=DB2C -  SPACE 353 OF 1,533
Cmd ===>                                                    Scroll ===> PAGE
              D I S P L A Y   M I G R A T E D   D A T A S E T S

Cmds:    DO (Menu)   DELETE     HDELETE    HRECALL
-------------------------------------------------------------------------------
                  TY  LAST REF   DAYS   PQTY   SQTY     ALLO % DSET DEVC
DBNAME   SPACE    PE  DATE     UNUSED  (TKS)  (TKS)     TRKS   USED TYPE
-------- -------- --  -------- ------ ------ ------ -------- ------ ----
JL11STK  XIDENT   IX  01/01/99    103      1      1        1  10.0  DASD
JL11STK  XLASTNAM IX  01/01/99    103      1      1        1  10.0  DASD
JL11SRM  JL11TS11 TS  01/26/99     78      7      1        7   1.4  DASD
JL11SRM  XPAYMENT IX  01/26/99     78      3      1        3   3.3  DASD
JL11TUU  XORG     IX  03/01/99    774      1      1        2   0.0  TAPE
JL11TUU  XPLAYER  IX  03/01/99    774      1      1        2   0.0  TAPE
```

Display fields

The following field definitions are for the Migrated Datasets panel.

DBNAME Database name. The list is in alphabetic order by database name.

SPACE Table space name.

TYPE Data set type. This value is **TS** for a table space and **IX** for an index space.

LAST REF DATE Most recent date that the table space was used.

DAYS UNUSED Number of days from the Last Ref Date to today.

PQTY Primary Quantity. This value is in tracks.

SQTY Secondary Quantity. This value is in tracks.

ALLO TRKS Number of tracks allocated for this table space. This is the amount of DASD required to recall the data set.

%DSET USED Percentage of the allocated space that is used. This value is 0 for all data sets that have been migrated to tape.

DEVC TYPE Storage device type. This indicates whether the data set has been migrated to secondary DASD or to TAPE.

Commands

You can use the following primary commands on the Migrated Datasets panel by typing the command on the command line and pressing Enter.

CAN	Cancel all selects.
DELETE	Delete all table spaces on the display.
DO	Show pop-up overlay of valid commands
FILT	Display the Filter menu.
LOCATE (L)	Position the display to a database name.
PRNT	Print the current display.
HRECALL	Recalls all table spaces on the display.
HDELETE	Deletes migrated data spaces.
UBROWSE	Browse specified user PDS member(s).
UEDIT	Edit specified user PDS member(s).

Select options

There are no select options available on the Migrated Datasets panel.

Filters

The following filter commands are effective on the Migrated Datasets panel.

AL/DSET	Number of allocated tracks per data set
ALLO	Number of allocated tracks
DAYS	Number of days since Last Ref Date
DAYSMIG	Number of days migrated
DB	Database name
EXTENTS	Number of extents
PRIQTY	Primary quantity in tracks
SECQTY	Secondary quantity in tracks
SG	Storage group name
SP	Table space name
STORTP	Storage type - I (Implicit) E (Explicit)
TYPE	Data set type - T (Table Space) I (Index Space)
US/DSET	Number of used tracks per data set
USED	Number of used tracks
USED%	Percentage of allocated space that is used
VC	VSAM catalog name
XT/DSET	Number of extents per data set

Displaying Volume History

Overview

The third type of history kept by !DB/DASD is for each volume. (Recall that the others are the “Displaying DB2DASD Summary History” on page 109, and the data set history in Appendix B, “Data Set History” on page 343). From the Display DB2 Volumes panel, any volume can be selected with **H.** This will display all of the information for that particular volume at the time of each extract. This information can be used in trend analysis to estimate requirements for more DASD.

Volume History panel

```
HISTORY FOR 7KM149 -------   D B / D A S D - DBID=DB2C ------ HISTORY 1 OF 29
Cmd ===>                                                    Scroll ===> PAGE
                  H I S T O R Y    F O R   V O L U M E

 Press PF15 to return to previous screen.
-------------------------------------------------------------------------------
                     # OF       # OF       ALLO      USED   % VOL   % VOL
    DATE   TIME     DSETS        XTS       TRKS      TRKS    ALLO    USED
-------- ------ ---------  ---------  --------- --------- ------- -------
11/08/99  19:04        55         63      2,728     1,916      10       7
11/06/99  20:33        55         63      2,728     1,916      10       7
11/01/99  18:00        51         59      2,695     1,911      10       7
10/30/99  17:23        47         55      2,575     1,903      10       7
10/16/99  19:41        47         54      2,574     1,902      10       7
10/15/99  17:22        47         54      2,574     1,902      10       7
09/03/99  14:34        47         54      2,574     1,902      10       7
08/22/99  10:44        47         54      2,574     1,902      10       7
08/21/99  16:48        47         54      2,574     1,902      10       7
07/09/99  17:04        47         54      2,574     1,902      10       7
03/30/99  12:22        47         53      2,573     1,900      10       7
 ****************************** BOTTOM OF LIST ********************************
```

Display fields

The following field definitions are for the Volume History panel. (The display fields are the same as those on the Display DB2 Volumes panel.)

VOLSER Volume Serial. The list is in order by volume serial with the exception of the MIGRAT and *ERROR data sets. MIGRAT designates migrated data sets, and *ERROR designates widow data sets. See the sections "Introduction to Migrated Data Sets" on page 243 and "Introduction to Widow Data Sets" on page 250 in Chapter 11, "Exceptions in Your DB2 System."

 # OF DATA SETS Number of table spaces on this volume.

 # OF EXTENTS Number of extents on this volume.

 # OF TRACKS Number of allocated tracks on this volume.

USED TRACKS Number of used tracks on this volume.

% VOL ALLO Percentage of the volume that is allocated to DB2 data sets. (Allocated tracks/Number of tracks)

% VOL USED Percentage of the volume that is used by DB2 data sets. (Used tracks/Number of tracks)

AVAIL TRACKS Number of unallocated tracks on volume. This field will be blank until the **R** Select is used on a particular volume or until a volume is used during MOVE processing.

Commands

You can use the following primary commands on the History for <volumeid> panel by typing the command on the command line and pressing Enter.

PRNT Print the current display.

UBROWSE Browse specified user PDS member(s).

UEDIT Edit specified user PDS member(s).

Select options

No select options are available for the History for <volumeid> panel.

Filters

No filters are available for the History for <volumeid> panel.

Displaying a Multivolume Data Set

Overview

The Display Multivol Dset panel, which is accessed by entering **M** on the Primary Menu, displays only those table spaces which are on multiple volumes. For each table space, there is one line displayed for each volume used.

Display Multivol Dset panel

```
DISPLAY DB2 MULTIVOL DSET-----   D B / D A S D - DBID=DB2C ----- SPACE 1 OF 8
Cmd ===>                                                    Scroll ===> PAGE
          D I S P L A Y     D B 2    M U L T I V O L    D S E T

Cmds:    DO (Menu)   DUMP       MOVE       RESTORE
Selects: ?  (Menu)   D Dump     M Move     R Restore  X Extents
-------------------------------------------------------------------------------
                          I   PQTY   SQTY  NO.     ALLO    USED   % DS
SEL DBNAME   SPACE    PT X   TRKS   TRKS  XTS   TRACKS  TRACKS   USED  VOLSER
--- -------- -------- -- - ------ ------ ---- -------- -------  -----  ------
 _  DD56001  XPART       I      1      1    3        3       3  100.0  7M1149
 _  DD56001  XPART       I      1      1   69       69      69  100.0  770011
 _  JL11BMT  TBLSAL             1      1    7        7       7  100.0  7E0147
 _  JL11BMT  TBLSAL             1      1   22       22      22  100.0  770196
 _  PT77EMPL EMPLNAME           1      1   45       45      45  100.0  7K0001
 _  PT77EMPL EMPLNAME           1      1   18       18      18  100.0  770011

    TOTALS        6                      164      164     164
 ****************************** BOTTOM OF LIST ******************************
```

Display fields

The following field definitions are for the Display Mulitvol Dset panel.

DBNAME Database name. The list is in alphabetic order by database name.

SPACE Table space name.

PT Partition number. This field is blank if there is no partition number.

IX Data set type. This field is blank if the data set is a table space , and there is an **I** in this field if the data set is an index space.

PQTY Primary quantity from DB2. This value is entirely expressed in whole tracks.

SQTY Secondary quantity from DB2. This value is entirely expressed in whole tracks.

#XTS Number of extents in this table space.

ALLO TRACKS Number of tracks allocated for this table space.

USED TRACKS Number of tracks used in this table space.

% DS USED Percent of allocated tracks that are used.

VOLSER Volume that the table space is on. There is one display line per volume of a multivolume data set.

Commands

You can use the following primary commands on the Display Multivol Dset panel by typing the command on the command line and pressing Enter.

CAN	Cancel all selects.
DO	Show pop-up overlay of valid commands
DUMP	Dump all multivolume data sets.
FILT	Display the Filter menu.
LOCATE (L)	Position the display to a value in the sorted field.
MOVE	MOVE all table spaces on the display.
PRNT	Print the current display.
RESTORE	Restore all multivolume data sets.
SORT (D)	Sort the current display.
UBROWSE	Browse specified user PDS member(s).
UEDIT	Edit specified user PDS member(s).

Sorts

To use the sort command, type **SORT** *xx* and press Enter. Substitute the variable *xx* with one of the following which are available on the Display Multivol Dset panel.

DB database

SP # of spaces

TY IX

PQ PQTY

SQ SQTY

XT # of extents

AL allo tracks

US used tracks

PT partition

%U %DS used

VL volser

Select options

The following select options are available on the Display Multivol Dset panel.

D Dump this table space.

M Move this table space.

R Restore this table space.

X Display the table space extents for this volume.

? Display a pop-up overlay of valid selects.

Filters

The following filter commands are effective on the Display Multivol Dset panel.

AL/DSET	Number of allocated tracks per data set
ALLO	Number of allocated tracks
DAYSMIG	Number of days migrated
DB	Database name
EXTENTS	Number of extents
PRIQTY	Primary quantity
SECQTY	Secondary quantity
SG	Storage group name
SP	Table space name
STORTP	Storage type - I (Implicit) E (Explicit)
TYPE	Data set type - I(Index space) T(Table space)
US/DSET	Number of used tracks per data set
USED	Number of used tracks
USED%	Percentage of allocated space that is used
VC	VSAM catalog name
VOL	Volume serial
XT/DSET	Number of extents per data set

For example:

```
VC=ABCD*
```

restricts the display to those data sets whose VCAT name begins with **ABCD**.

Displaying All DB2 Databases

Overview

The Display DB2 Databases panel shows information for all of the databases in the DB2 system. This display is accessed by selecting **B** on the Primary Menu.

Display DB2 Databases panel

```
DISPLAY DB2 DATABASES ----   D B / D A S D - DBID=DB2C -  DATABASE 243 OF 341
Cmd ===>                                                  Scroll ===> PAGE
                  D I S P L A Y   D B 2   D A T A B A S E S

Cmds:    DO (Menu)    DUMP       MOVE       RESTORE
Sels:    ?  (Menu)    D Dump     M Move     R Restore   S Tblspcs    V Volumes
------------------------------------------------------------------------------
                 # OF                XTS/      ALLO        USED
SEL DATABASE  SPACES    #XTS        DSET    TRACKS      TRACKS     % USED
--- --------  ------    ----    -------  --------      ------    -------
 _  CN17PRMM       2       0         .0     2,926       1,570       53.7
 _  CP22JKPS       6      27        9.0     1,130       1,091       96.5
 _  CP22PTYN      20       4        1.0     2,183         122        5.6
```

Display fields

The following field definitions are for the Display DB2 Databases panel.

DATABASE Database Name. The list is in alphabetic order by database name.

 # OF SPACES Number of table spaces in the database.

#XTS Number of extents in the database.

XTS/DSET Average number of extents per table space. This calculation does not include migrated or widow data sets in the total number of table spaces.

ALLO TRACKS Number of tracks allocated for this database.

USED TRACKS Number of tracks used in this database.

% USED Percent of allocated tracks that are used.

Commands

You can use the following primary commands on the Display DB2 Databases panel by typing the command on the command line and pressing Enter.

CAN	Cancel all selects.
DO	Show pop-up overlay of valid commands
DUMP	Dump all databases.
FILT	Display the Filter menu.
LOCATE (L)	Position the display to a value in the sorted field.
MOVE	Move all table spaces in all the databases on the display.
PRNT	Print the current display.
RESTORE	Restore all databases.
SORT (D)	Sort the current display.
UBROWSE	Browse specified user PDS member(s).
UEDIT	Edit specified user PDS member(s).

Sorts

To use the sort command, type **SORT** *xx* or **SORTD** *xx* and press Enter. Substitute the variable *xx* with one of the following which are available on the Display DB2 Databases panel.

DB	database
SP	# of spaces
XT	# of extents
XD	XTS/DSET
AL	allo tracks
US	used tracks
%U	%vol. used

Select options

The following select options are available on the Display DB2 Databases panel.

D Dump all table spaces for this database.

M Move all table spaces in this database.

R Restore all table spaces for this database.

S Display all table spaces in this database.

V Display all volumes for this database.

? Display a pop-up overlay of valid selects.

Filters

The following filter commands are effective on the Display DB2 Databases panel.

AL/DSET Number of allocated tracks per data set

ALLO Number of allocated tracks

DB Database name

EXTENTS Number of extents

US/DSET Number of used tracks per data set

USED Number of used tracks

USED% Percent of allocated space that is used

XT/DSET Number of extents per data set

Displaying Index and Table Spaces

Overview

The Display DB2 Spaces panel, option **D** on the Primary Menu, lists information about each table and index space in the DB2 catalog. Each table or index space is listed once for each volume it uses.

Display DB2 Spaces panel

```
DISPLAY DB2 SPACES ------   D B / D A S D - DBID=DB2C -- SPACE 2,555 OF 5,086
Cmd ===>                                                  Scroll ===> PAGE
                     D I S P L A Y   D B 2   S P A C E S

Cmds:    DO (Menu)  DUMP    MOVE    RESTORE
Selects: ?  (Menu)  D Dump  M Move  R Restore  X Extents  S SMS INFO
------------------------------------------------------------------------------
                          I   PQTY   SQTY  NO.     ALLO    USED   % DS
SEL DBNAME   SPACE    PT X   TRKS   TRKS  XTS   TRACKS  TRACKS   USED VOLSER
--- -------- -------- -- - ------ ------ ---- -------- -------  ----- ------
 _  DBDMRT   DBDTPNL1           7      1    1        7       2   28.6 770196
 _  DBDMRT   DBDTPNL2         125     13    1      130      20   15.4 770196
 _  DBDMRT   DBDT1DWY    I      2      2    1        2       2  100.0 770196
 _  DBDMRT   DBDT1XNV    I     40      4    1       40       8   20.0 770196
```

Display fields

The following field definitions are for the Display DB2 Spaces panel. All the values for these fields come from the last extract of the DB2 catalog, except for ALLO TRACKS, USED TRACKS, and %DS USED, which are based on DASD rather than DB2.

DBNAME Database name. The list is in alphabetic order by database name.

SPACE Table space name.

PT Partition number. This field is blank if there is no partition number.

IX Data set type. This field is blank if the data set is a table space. If there is an **I** in this field, the data set is an index space.

PQTY TRKS Primary Quantity. This value is in tracks. See "Changing Space Allocations" on page 160 for information about how !DB/DASD handles primary quantity allocations.

SQTY TRKS Secondary Quantity. This value is in tracks. See "Changing Space Allocations" on page 160 for information about how !DB/DASD handles secondary quantity allocations.

NO. #XTS Number of extents in this table space.

ALLO TRACKS Number of DASD tracks allocated for this table space.

USED TRACKS Number of DASD tracks used in this table space.

% DS USED The percentage of allocated DASD tracks that are used.

VOLSER Volume that the table space is on. There is one display line per volume of a data sets.

Commands

You can use the following primary commands on the Display DB2 Spaces panel by typing the command on the command line and pressing Enter.

CAN	Cancel all selects.
DO	Show pop-up overlay of valid commands
DUMP	Dump all data spaces.
FILT	Display the Filter menu.
LOCATE (L)	Position the display to a value in the sorted field.
MOVE	Move
PRNT	Print the current display.
RESTORE	Restore all data spaces.
SORT(D)	Sort the current display.
UBROWSE	Browse specified user PDS member(s).
UEDIT	Edit specified user PDS member(s).

Sorts

To use the sort command, type **SORT** *xx* and press Enter. Substitute the variable *xx* with one of the following which are available on the Display DB2 Spaces panel.

DB database

SP # of spaces

TY IX

PQ PQTY

SQ SQTY

XT # of extents

AL allo tracks

US used tracks

PT partition

%U %DS used

VL volser

Select options

The following select options are available on the Display DB2 Spaces panel.

D Dump this table space.

M Move this table space.

R Restore this table space.

S Display SMS information for this table space.

X Display the table space extents for this volume.

? Display a pop-up overlay of valid selects.

Filters

The following filter commands are effective on the Display DB2 Spaces panel.

AL/DSET Number of allocated tracks per data set

ALLO Number of allocated tracks

DB Database name

DAYSMIG Number of days migrated

EXTENTS Number of extents

PRIQTY Primary quantity

SECQTY Secondary quantity

SG Storage group name

SP Table space name

STORTP Storage type - I (Implicit) E (Explicit)

TYPE Data set type - I(Index space) T(Table Space)

US/DSET Number of used tracks per data set

USED Number of used tracks

USED% Percentage of allocated space that is used

VC VSAM Catalog name

VOL Volume Serial

XT/DSET Number of extents per data set

For example:

```
VC=ABCD*
```

restricts the display to those data sets whose VCAT name begins with **ABCD**.

Displaying Extents for a Data Space

Overview

The XTS on <volumeid.dataspace> panel lists the database name and data space name and displays one line per extent.

XTS on <volumeid.dataspace> panel

To display the XTS on <volumeid.dataspace> panel, first access the Data Space panel by entering **D** on the Primary Menu. Then, use the X select for any data space in the list to display information on its extents.

```
XTS ON OMON22/IM289PTS ---   D B / D A S D - DBID=DB2C --------- EXTENT 1 OF 2
Cmd ===>                                                    Scroll ===> PAGE
                      X T S    O N    D A T A    S P A C E
 Press PF15 to return to previous screen.
-------------------------------------------------------------------------------
                         STRT ADR      END ADR                ALLO      USED
DBNAME    SPACE          CYL  TRK     CYL  TRK     XT#       TRKS      TRKS
--------  --------      ---------    ---------    ----    --------  --------
IM289PDB  IM289PTS      1728    0    1732   14      14          75        75
IM289PDB  IM289PTS      2166    0    2170   14      15          75         0
 ****************************** BOTTOM OF LIST ********************************
```

Display fields

These field definitions are for the XTS on <volumeid.dataspace> panel.

DBNAME Database name.

SPACE Table space name.

STRT ADR Starting address. This address is in cylinder-track format.

END ADR Ending address. This address is in cylinder-track format.

XT# Extent number. The relative number of this extent in the data set. This is the logical, not the physical, extent number.

ALLO TRKS Allocated tracks. The number of tracks allocated in this extent.

USED TRKS Used tracks. The number of tracks used in this extent.

Commands

You can use the following primary commands on the XTS on <volumeid.dataspace> panel by typing the command on the command line and pressing Enter.

PRNT Print the current display.

UBROWSE Browse specified user PDS member(s).

UEDIT Edit specified user PDS member(s).

Select options

No select options are available for the History for <volumeid> panel.

Filters

No filters are available for the XTS on <volumeid.dataspace> panel.

Displaying Storage Groups

Overview

The Display Storage Groups panel, option **G** on the Primary Menu, lists information about each storage group in the DB2 catalog.

Display Storage Groups panel

```
DISPLAY STORAGE GROUPS------   D B / D A S D - DBID=DB2C -- GROUP 1 O  F 647
Cmd ===>                                                    Scroll ===> PAGE
               D I S P L A Y    S T O R A G E    G R O U P S

Cmds:    DO (Menu)
Selects: ?  (Menu)   A Alter    D Dump    R Restore    S Tblspcs
------------------------------------------------------------------------------

SEL GROUP     CREATOR  #VOLS  VOLUME  VOLUME  VOLUME  VOLUME  VOLUME CATALOG
--- --------  -------- -----  ------  ------  ------  ------  ------ -------
 _  ACCCCCC   DR12PRO      3  770196  770048  770007                 ACCCCCC
 _  AC05      DR12PRO      3  770196  770048  770007                 AC05
 _  AC05001   DR01SVM      3  770007  770048  770196                 AC05001
 _  AC10FLM   DR12PRO      3  770048  770007  770196                 AC10FLM
 _  AC10001   DR01SVM      3  770007  770048  770196                 AC10001
 _  AC14C00   DR01AMY      2  770048  770007                         AC14C00
 _  AC14DLW   DR12PRO      3  770048  770196  770007                 AC14DLW
```

Display fields

The following field definitions are for the Display Storage Groups panel.

GROUP Storage group name. The list is in alphabetic order by storage group name.

CREATOR Storage group creator ID.

#VOLS Number of nolumes in the storage group.

VOLUME Volume serial of the first five volumes in the storage group.

CATALOG VSAM catalog name for the storage group.

Commands

You can use the following primary commands on the Display Storage Groups panel by typing the command on the command line and pressing Enter.

CAN Cancel all selects.

DO Show pop-up overlay of valid commands

FILT Display the Filter menu.

LOCATE (L) Position the display to a value in the sorted field.

PRNT Print the current display.

SORT(D) Sort the current display.

UBROWSE Browse specified user PDS member(s).

UEDIT Edit specified user PDS member(s).

Sorts

To use the sort command, type **SORT** *xx* and press Enter. Substitute the variable *xx* with one of the following which are available on the Display Storage Groups panel.

SG storage group

CR creator

#V number of volumes

CT catalog

Select options

The following select options are available on the Display Storage Groups panel.

A Alter all data sets in this storage group. For information on the ALTER function, refer to “Alter Options” on page 182 in Chapter 7, “Moving Data Sets.”

D Dump all the data sets in this storage group.

R Restore all the data sets in this storage group.

S Display all data sets in this storage group.

? Display a pop-up overlay of valid selects.

Filters

The following filter command is available on the Display Storage Groups panel.

SG Storage group name

Displaying All VCATs

Overview

The VCAT Display, option **C** on the Primary Menu, lists information about each VCAT listed in the DB2 catalog.

Display VCATS panel

```
DISPLAY VCATS --------------   D B / D A S D - DBID=DB2C --- VCAT 1 O  F 325
Cmd ===>                                                    Scroll ===> PAGE
                              D I S P L A Y   V C A T S

Cmds:    DO (Menu)
Selects: ?  (Menu)    A Alter    D Dump    R Restore    S Tblspcs
-------------------------------------------------------------------------------
                 # OF      # OF      ALLO      USED
SEL VCAT      SPACES       XTS      TRKS      TRKS
--- --------  ------    ------    ------    ------
 _  AC05001      103       153       215       168
 _  AC10FLM        4         0         0         0
 _  AC14C00       58        14     2,486       377
 _  AC14HJV        4        12        40        19
 _  AC14JSH        1         0         5         1
 _
```

Display fields

The following field definitions are for the Display VCAT panel.

VCAT VCAT name. The list is in alphabetic order by VCAT name.

 # OF SPACES Number of table spaces with this VCAT name.

 # OF XTS Number of extents in these table spaces.

ALLO TRKS Number of allocated tracks in these table spaces.

USED TRKS Number of used tracks in these table spaces.

Commands

You can use the following primary commands on the Display VCATS panel by typing the command on the command line and pressing Enter.

CAN Cancel all selects.

DO Show pop-up overlay of valid commands

FILT Display the Filter menu.

LOCATE (L) Position the display to a value in the sorted field.

PRNT Print the current display.

SORT(D) Sort the current display.

UBROWSE Browse specified user PDS member(s).

UEDIT Edit specified user PDS member(s).

Sorts

To use the sort command, type **SORT** *xx* and press Enter. Substitute the variable *xx* with one of the following which are available on the Display VCATS panel.

VC VCAT

#S number of spaces

#X number of extents

AL allo trks

US used trks

Select options

The following select options are available on the Display VCATS panel.

A Alter all data sets with this VCAT name. For information on the ALTER function, refer to "Alter Options" on page 182 in Chapter 7, "Moving Data Sets."

D Dump all data sets with this VCAT name.

S Display all data sets with this VCAT name.

R Restore all data sets with this VCAT name.

? Display a pop-up overlay of valid selects.

Filters

The following filter commands are available on the Display VCAT panel.

AL/DSET Number of allocated tracks per data set

ALLO Number of allocated tracks

DSETS Number of data sets

EXTENTS Number of extents

USED Number of used tracks

US/DSET Number of used tracks per data set

VC VSAM catalog name

XT/DSET Number of extents per data set

Displaying SMS Information

Overview

The SMS Info Display, option **I** on the Primary Menu, lists SMS information about each data space in the DB2 catalog.

Display SMS Info panel

```
DISPLAY SMS INFO----------- D B / D A S D -- DBID=DB31 ------ SPACE 1 OF 2,691
                        D I S P L A Y    S M S    I N F O
Cmds:    DO (Menu)  DUMP       MOVE       RESTORE
Sels:    ?  (Menu)  D Dump     M Move     R Restore  X Extents
-------------------------------------------------------------------------------
                          I  NO. ALLO    % DS          STOR     MGMT     DATA
SEL DBNAME   SPACE    PT X  XTS TRACKS  USED  VOLSER CLASS    CLASS    CLASS
--- -------- -------- -- - ---- ------- ----- ------ -------- -------- ------
 _  $WQ300   STATDBAS         1      30 100.0 DB2001 NONE     NONE     NONE
 _  AHYY     AACTXL      I    1       1 100.0 DB2001 NONE     NONE     NONE
 _  AHYY     AHYYTS           1      75   1.3 DB2001 NONE     NONE     NONE
 _  AJGG     AACTX       I    1       1 100.0 DB2001 NONE     NONE     NONE
 _  AJGG     AJGGTS           1      30 100.0 DB2001 NONE     NONE     NONE
 _  AJPOOS   AACTX       I    1       1 100.0 DB2001 NONE     NONE     NONE
 _  AJPOOS   AJPOOSTS         1       4  50.0 DB2001 NONE     NONE     NONE
 _
```

Display fields

The following field definitions are for the Display SMS Info panel.

DBNAME Database name.

SPACE Data space name.

PT Partition number (if any).

IX Data set type.

NO. XTS Number of extents in the data set.

ALLO TRKS Number of tracks allocated for the data set.

%DS USED Percentage of allocated tracks that are used.

VOLSER Volume that the data set uses.

STOR CLASS SMS storage class that speciifies the availability for the data space.

MGMT CLASS SMS management class that specifies the archiving for the data space.

DATA CLASS SMS data class that specifies the space allocated for the data space.

Commands

You can use the following primary commands on the Display SMS Info panel by typing the command on the command line and pressing Enter.

DO	Display all commands.
CAN	Cancel all selects.
FILT	Display the Filter menu.
LOCATE (L)	Position the display in the sorted field.
DUMP	Dump all data spaces in the display.
MOVE	MOVE all data spaces in the display.
PRNT	Print the current display.
RESTORE	RESTORE all data spaces in the display.
SORT	Sort the current display.

Sorts

To use the sort command, type **SORT** *xx* and press Enter. Substitute the variable *xx* with one of the following which are available on the Display SMS Info panel.

DB Database name

SP Data space name

PT Partition number

TY Data set type

XT Number of extents

AL Number of allocated tracks

%U Percentage of used tracks

VL Volume name

SC SMS storage class

MC SMS management class

DC SMS data class

Select options

The following select options are available on the Display SMS Info panel.

D DUMP the selected data space.

M MOVE the selected data space.

S Display SMS information for the selected data space.

R RESTORE the selected data space.

X Display all the extents for the select data space.

? Display a pop-up overlay of valid selects.

Filters

The following filter commands are available on the Display VCAT panel.

DB	Database name
SP	Data space name
VC	VSAM catalog name
SG	Storage group name
SC	SMS storage class
MC	SMS management class
DC	SMS data class
VOL	Volume serial
STORTP	Storage type (I=Implicit,E=Explicit)
TYPE	Data set type (I=Index space, T=Table space)

Chapter 7. Moving Data Sets

Introduction

This chapter provides information about moving and altering data sets, both individually and in groups. It also tells you how to use the !DB/DASD panels that control the MOVE command and the Alter function.

Chapter contents

Overview of the Chapter 156
Data Set Types 158
Changing Space Allocations 160
Migrated or Error Display 164
Size Analysis Display 165
Sorting the Data Sets 166
Volumes Options 167
Changing Individual Data Sets 169
Copy Options 172
Tape Copy Options 176
One Job Options 177
Image Copy Options 179
Job Card Options 180
Process Member Menu 181
Alter Options 182
Compressing Spaces 184
Selecting Names 185
Making Data Sets DB2-Managed 187
Making Data Sets User-Managed 189
Renaming Data Sets 192
Moving Data Sets between Storage Groups 196

Overview of the Chapter

Overview

The JCL generation for the MOVE command is very flexible and is based on options set by the user. Once the MOVE command (or **M** select) has been issued, a series of options panels appears. Each of these panels is described in this chapter.

In this series of panels, you can back up to a previous panel by using the PF key indicated on the panel or by issuing the REV command on the command line.

You can cancel MOVE from any panel with an appropriate PF key. You must confirm the cancel request before the MOVE processing is terminated.

Background on running a new extract

Because !DB/DASD displays data from the latest !DB/DASD extract of the DB2 catalog, you must run a new extract before !DB/DASD data reflects changes.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then locate the page number of the units that you need for your task.

	Data Set Types	Changing Space Allocations	Migrated or Error Display	Size Analysis Display	Sorting the Data Sets	Volumes Options	Changing Individual Data Sets	DSN1COPY Options	One Job Options	Image Copy Options	Job Card Options	Process Member Menu	ALTER Options	Changing VCAT Names	Moving Data Sets Between Storage Groups	Making Data Sets User-Managed	Making Data Sets DB2-Managed
	page 158	page 160	page 164	page 165	page 166	page 167	page 169	page 172	page 177	page 179	page 180	page 181	page 182	page 192	page 196	page 189	page 187
Moving individual data sets	√	√	√	√	√	√		√	√	√	√	√					
Moving data sets	√	√	√	√	√	√	√	√	√	√	√	√					
Deciding to run a new extract			√									√	√	√	√	√	√
Understanding the Alter option													√	√	√	√	√
Changing VCAT names													√	√			
Moving data sets between storage groups													√		√		
Making data sets DB2-managed													√			√	
Making data sets user-managed													√				√

Data Set Types

Individual data sets

To move an individual table space, the current display must be a display of table spaces, such as the Display DB2 Spaces panel. Choose the appropriate table space with an **M** to begin MOVE processing.

Groups of data sets

Any group of table spaces that can be displayed, excluding *ERROR and migrated data sets, can be moved. The grouping can be done in several ways. For example, to move *all* DB2 table spaces on a specific volume, there are two methods of grouping.

- Choose **V** on the Primary Menu to list volumes. Choose a volume with **M**. When the **M** select is used on a volume or database, all data spaces (except *ERROR and migrated data sets) on that volume or database are moved.
- Alternatively, choose **D** on the Primary Menu to list all table spaces. Filter the object list with the VOL=*xxxxxx* command. This results in a list of all table spaces on volume *xxxxxx* (the volume to be moved). Since all of the table spaces on the list are to be moved, type **MOVE** on the command line to begin MOVE processing.

Special cases

MOVE works on an individual table space or group of table spaces. However, there are some exceptions.

***ERROR data sets (widows)** These cannot be moved since they do not physically exist. For more information about *ERROR data sets, see "Introduction to Widow Data Sets" on page 250.

Migrated data sets These must be recalled from the secondary resources before they can be moved. For more information about migrated data sets, see "Introduction to Migrated Data Sets" on page 243.

DB2 Catalog The DB2 catalog must be processed separately from other DB2 data sets. !DB/DASD automatically excludes DB2 Catalog data sets from the MOVE processing. To move the DB2 Catalog, select data sets that are exclusively Catalog data sets. The job stream that is generated must have SYSADM authority and must be run when DB2 is down. *Image Copy the Catalog data sets before this job is run.*

Changing Space Allocations

Overview

The first options panel is the Size Options panel. This panel establishes the general rule for determining the sizes of the new table spaces. Values for individual data spaces can be changed later.

Size Options panel

```
SIZE OPTIONS ----------------   D B / D A S D  - DBID=DB2C ------------------
Cmd ===>

                         S I Z E    O P T I O N S

   PRI SIZE FACTOR ===> 10                      MOVE PROFILE ===>

           PRIMARY ===> 6
                        1 - SAME  - New PQTY = Current PQTY
                        2 - ALLO  - New PQTY = Current Allocated Size
                        3 - USED  - New PQTY = Current Used Size
                        4 - SAME2 - New PQTY = Current PQTY + 10%
                        5 - ALLO2 - New PQTY = Current Allo Size + 10%
                        6 - USED2 - New PQTY = Current Used Size + 10%

   SEC SIZE FACTOR ===> 10

         SECONDARY ===> 3
                        1 - SAME  - New SQTY = Current SQTY
                        2 - ALLO  - New SQTY = 10% of Current Allocated  Size
                        3 - USED  - New SQTY = 10% of Current Used Size
                        4 - PQTY  - New SQTY = 10% of Current PQTY

    Press ENTER to continue.      Press PF15 to cancel.
```

Primary and secondary size factors

Use the size factor fields to specify a percentage increase over the currently allocated size. You can specify a percentage as high as 999.

For example, if the Primary Size Factor is 10, and you have selected Primary Option 5, !DB/DASD allocates a primary quantity of the current allocated size plus 10%. If the Size Factor is changed to 15, !DB/DASD allocates the current allocated size plus 15%. However, the display does not reflect the change until the next time this screen appears.

The secondary size factor works the same way.

Specifying a utility profile for the move process

This field allows you to specify a utility profile that is to be used during the move processing. utility profiles are created by selecting **H.4** from the Primary Menu. To create a new profile, select an existing profile as a model, make changes, and save the profile under a new name. Once a profile is created, it can be used by entering the profile name in this field. The purpose of a profile is to define a list of volumes to use as destination volumes in the MOVE job stream.

For more information on creating a profile, see "Displaying and Selecting Profiles" on page 277.

Setting guidelines for the primary quantities option

This option sets the guidelines for the new Primary Quantities. The possible options are shown in the following chart.

IF you ...	THEN select one of these options ...
do not specify a PRI SIZE FACTOR,	• the current Primary Quantity, • the current allocated size, or • the current used size
specify a PRI SIZE FACTOR,	• the current Primary Quantity plus the percentage you specify, • the current allocated size plus the percentage you specify, or • the current used size plus the percentage you specify

Setting guidelines for the secondary quantities option

This option determines the Secondary Quantity of each new data set. The possible options are shown in the following chart.

IF you ...	THEN select ...
do not specify a SEC SIZE FACTOR,	the current Secondary Quantity
specify a SEC SIZE FACTOR,	one of the following: • a percentage of the current allocated size, • a percentage of the current used size, or • a percentage of the current Primary Quantity

Technical notes

When you create a new table space in DB2, you specify primary quantity (PRIQTY) and secondary quantity (SECQTY) values for a STOGROUP managed table space These values are in kilobytes and are stored in DB2 tables as 4 kilobyte blocks.

For example:

DB2 stores a PRIQTY of 16 kilobytes as 4 blocks. When DB2 requests for VSAM to allocate a table space, VSAM converts the PRIQTY and SECQTY to tracks since tracks are the smallest allocation unit MVS allows, as follows:

IF the device is a ...	THEN the smallest true PRIQTY is ...
3390	48 kilobytes per track
3380	40 kilobytes per track

Note: It is possible that the number of tracks DB2 calculates is not the same number of tracks you originally allocated. This is due to the influence of other subsystems such as IBM's HSM® and SMS®. These subsystems can migrate data sets, eliminate extents on recall, and change allocation amounts based on installation requirements.

Migrated or Error Display

Overview

!DB/DASD displays the Migrated or Dropped panel if both of the following conditions exist.

- The data space you specified to MOVE has been migrated or dropped since the last extract.
- You specified that !DB/DASD prompt you before recalling migrated data sets. See Chapter 15, “Defining Recall Options” on page 305 for more information.

If you specify that you want to be prompted before recalling migrated data sets, this panel appears once for each table space that has been dropped or migrated.

If this panel occurs several times, it is an indication that your extract is not current and that you should run a new extract.

If you choose not to recall migrated data sets, !DB/DASD does not include the data sets in the MOVE processing.

Migrated or Dropped panel

The Size Options panel lists the names of the following data sets:

- Already migrated
- *ERROR

!DB/DASD does not include these data sets in the MOVE process.

```
SIZE OPTIONS -----------   D B / D A S D - DBID=DB2C ----- Response required
Cmd ===>


   Dataset = AY55B2.DSNDBD.DR12JHBT.DDRTEST7.I0001.A001

       This dataset has been MIGRATED to DASD   since the last extract.
       You have requested to be prompted for the action to be taken.


     RECALL DATASET ==> N    Y / N


        ************************************************************
        *                                                          *
        *   Press ENTER to continue.                               *
        *                                                          *
        *              Press END to end the MOVE processing.       *
        *                                                          *
        ************************************************************
```

Size Analysis Display

Introducton

!DB/DASD displays a panel to keep you informed of the processing status. If you are processing a large number of table spaces, or if your system is relatively slow, it takes some time for !DB/DASD to retrieve the current information for all of the table spaces that are being moved. No response is required on this panel, it is only an information display.

Size Analysis Display panel

```
SIZE OPTIONS ----------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>


                          S I Z E   A N A L Y S I S


      Each dataset is being analyzed to
      determine its size.  These values
      will be used to build JCL statements.

      This is an information screen only.

      Wait for the process to finish.


      Current dataset is: DBD = KM19RBJ    Space = DD49N12

      Number 15      of   25
```

The single most important factor contributing to the processing speed is the location of the IDCAMS modules. !DB/DASD does AMS LISTCATs to determine DB2 data set size characteristics. Keep IDCAMS resident in memory for best performance.

Sorting the Data Sets

Overview

The Sort Move Datasets panel allows you to sort the data sets into the order !DB/DASD processes them. The sort can be in either ascending or descending order.

Sort Move Datasets panel

```
SORT MOVE DATASETS -------   D B / D A S D - DBID=DB2C --------- SPACE 1 OF 1
Cmd ===>                                                    Scroll ===> PAGE
                     S O R T    M O V E    D A T A S E T S
 Sort this display in the order that the MOVE processing is to be done.
 Values for Pqty and Sqty may be changed here.
 Press ENTER to continue with MOVE processing.
 Press PF22 to back up to previous screen.  Press PF23 to cancel MOVE.
------------------------------------------------------------------------------
                             NEW     NEW
DBNAME   SPACE    PART     PQTY    SQTY
-------- -------- ----   ------  ------
AB89D00  ONLINE          1,298     100
AB89D00  TESTCASE          856      20
AB89D00  PRODUCT           800      15
AB89D00  PAYROLL           125       5
AB89D00  DISTRIB            15       5
AB89D00  IXPAYROL            4       2
 ****************************** BOTTOM OF LIST ********************************
```

Sorts available from the Sort Move Datasets panel

The SORT or SORTD command can sort on the following values the following values:

DB data set name

SP space name

PT partition #

PQ Primary Qty

SQ Secondary Qty

Volumes Options

Overview

The MOVE facility allows you to change all occurrences of one volume to another volume. The only exception to this is that !DB/DASD does not move a storage group-managed data set to a volume that is not defined as part of the storage group.

Change Volumes panel

```
CHANGE VOLUMES ----------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>                                                    Scroll ===> PAGE
                         C H A N G E    V O L U M E S
 This screen will not allow you to move a storage-group managed dset to a
 volume outside of the storage group.  You must make those changes later.
 To replace all occurrences of a volume with a new volume, type the new
 volser in the new volume column.
 Press ENTER to save changes and continue with MOVE function.
 Press PF22 to go back to the previous screen.
 Press PF23 to cancel MOVE.            ALL TO VOLUME ==>
                             DISPLAY SPACE FOR VOLUME ==>
------------------------------------------------------------------------------
                     AVAIL    # OF  TARGET          NEW
                     SPACE   DSETS  VOLUME          TARGET
                   ---------  ------  ------          ------
                     2,460      12  DB2T03          DB2T03
 ****************************** BOTTOM OF LIST ********************************
```

The Change Volumes panel has two fields near the middle of the screen. To move all data sets being processed to a specific volume, type the VOLSER in the ALL TO VOLUME field. To display the number of available tracks on a volume, enter the VOLSER in the DISPLAY SPACE FOR VOLUME field. !DB/DASD displays the new volume in the list of volumes. The # of DSETS field equals 0. The AVAIL SPACE field contains the number of unallocated trackts.

Changing volumes procedure

To change all occurrences of a volume to a new volume,

Step	Action
1	Type the name of the volume you want to change in the TARGET VOLUME field.
2	Press Tab. **Result**: The cursor moves to the NEW TARGET field.
3	Type name of the new volume in the NEW TARGET field.
4.	Press Enter. **Result**: !DB/DASD moves the non-storage group data sets to the new target volume. !DB/DASD puts the number of data sets that are now in each volume in the # of DSETS field. !DB/DASD also updates the AVAIL SPACE field with the appropriate value for each volume. ***Note:*** If one data set exists on multiple volumes, each volume appears on the list.

Changing Individual Data Sets

Change Move Values panel

The Change Move Values panel allows you to change the volumes, primary allocation quantity, and secondary allocation quantity of individual table spaces. Each table space that is to be moved is listed on this display. Type over any values you want to change.

```
 CHANGE MOVE VALUES -------   D B / D A S D - DBID=DB2C --------- SPACE 1 OF 1
 Cmd ===>                                                    Scroll ===> PAGE
                     C H A N G E    M O V E    V A L U E S
  Type over values or Select with S to change information for a single dataset.
  Cmds:   ENTER save and continue    PF22 previous screen    PF23 cancel
  Sels:   F force    I include    S change single    X exclude
------------------------------------------------------------------------------
                        ALLO   USED         NEW    NEW
SEL DBNAME   SPACE       TRKS   TRKS #XTS   PQTY   SQTY  VOLUME  VOLUME   VOLUME
--- -------- -------- ------ ------ ---- ------ ------  ------  ------   ------
 _  AB89D00  DISTRIB      15     10    1     15       5  BR7K09
 _  AB89D00  IXPAYROL      4      4    1      6       2  BR7K09
 _  AB89D00  ONLINE    1,298  1,298    7  1,500     125  BZ9521
 _  AB89D00  PAYROLL     125    115    3    150      15  OPR555
 _  AB89D00  PRODUCT     800    777    4    875      45  BR7K09
 _  AB89D00  TESTCASE    856    856   15    900      50  BR7K09
 ****************************** BOTTOM OF LIST ******************************
```

Options on the Change Move Values panel

The following chart shows the options available on the Change Move Values panel.

IF you select a table space with ...	THEN ...
X	!DB/DASD excludes it from the list of table spaces to be moved.
I	!DB/DASD includes it after it has been excluded.
F	you can force a table space to be moved to a particular volume. !DB/DASD does not move a table space to a volume outside its storage group or to a volume where it does not fit. This option allows you to force a table space to a particular volume and exclude it from the restrictions listed above.
S	you can change values for the table space.

Change Values panel

If you select a table space with **S,** the system will display the Change Values panel. This panel allows you to change the values for the selected table space. To change the values, type the new values over the old values. Press End to save the new values and return to the previous panel.

```
CHANGE VALUES -----------------   D B / D A S D - DBID=DB2C ---------- ------
Cmd ===>

                       C H A N G E    V A L U E S

     Data Space = JK05001.DSNDBD.JK05D00.ONLINE.I0001.A001

          Primary Qty   = 15
          Secondary Qty = 10
          Volumes       = 7K0221
                        =
                        =
                        =
                        =
                        =
                        =
                        =
```

Copy Options

Introduciton

The JCL generated for the MOVE command is determined by user options. The Copy Options panel allows you to select which commands to generate.

Copy Options panel

```
COPY OPTIONS ------------------   D B / D A S D - DBID=DB2C -----------------
Cmd ===>
                              C O P Y    O P T I O N S
                          Set all options, then press ENTER.

                  PROGRAM ===> DSN1COPY  KTD1COPY / DSN1COPY
           COPY TO DEVICE ===> D         T - Tape  D - Dasd
         IMAGE COPY BEFORE ===> Y         Y - Yes  N - No
           DB2 CMDS BEFORE ===> V         P - Stop    R - St RO
                                          U - St UT   V = P & U   " "=NONE
           STOP AT COMMIT ===> Y         Y - Yes N - No (If P or V above)

           DB2 CMDS AFTER ===> Z         P - Stop   R - St RO
                                          W - St RW  Z = P & R    " "=NONE
                 COMPRESS ===> Y         Y - Yes  N - No

                   DELETE ===> K         D - Delete the original, or
                                          K - Keep the original (renamed).
                  ONE JOB ===> Y         Y - Run all copies in one job
  NUMBER OF DSETS PER JOB ===> 1         If ONE JOB = N , no. in each job

                      PF22 to back up to previous screen.
                      PF23 to cancel MOVE.
```

Field definitions for copy options

PROGRAM This option determines which program to use to copy the table spaces. You can enter either **DSN1COPY** or **KTD1COPY**, the Candle copy utility.

DSN1COPY copies the entire allocated space.

KTD1COPY copies only up to the last formatted pages. !DB/DASD copies and reports zero pages spread in between data page. Use KTD1COPY if you are trying to recover wasted DASD due to allocations that are too large.

COPY TO DEVICE

Select **T** to copy to tape.

Select **D** to copy to DASD.

IMAGE COPY BEFORE

Select **Y** to do a full image copy of each table space before the DSN1COPY.

Select **N** to skip the image copy step.

DB2 CMDS BEFORE

This option determines the DB2 Command to be generated in a first step that precedes all the MOVE steps. You can specify one of the following values:

P -STOP DATABASE commands are generated for each table space to be processed.

R -START DATABASE ACCESS(RO) (Read Only) are generated for each table space to be processed.

U -START DATABASE ACCESS(UT) are generated for each table space to be processed. **UT** allows only DB2 utilities to process the table spaces.

V = P + U. ACCESS(UT).

blank No DB2 commands.

Field definitions for copy options (continued)

STOP AT COMMIT

Specify **Y** if you want to include all the changes to a database before commit time.

Specify **N** if

- you typed **P** or **V** in the DB2 CMDS BEFORE field, or
- the database is down.

DB2 CMDS AFTER

This option determines the DB2 Command to be generated in a last step that follows all the MOVE steps. The SQL ALTERs for DB2 V2.1 are generated with these commands. If this field is blank, no ALTERs are generated. You can specify one of the following values:

P	-STOP DATABASE commands are generated for each table space to be processed.
R	-START DATABASE ACCESS(R0) (Read Only) commands are generated for each table space to be processed.
W	-START DATABASE ACCESS(RW) (Read and Write) commands are generated for each table space to be processed.
Z = P + R.	DATABASE ACCESS(RO).
blank	No DB2 Commands or SQL ALTERs.

COMPRESS Select **Y** to set a flag so that the system compresses the table space during the next reorg.

Select **N** to keep the system from compressing the table space during the next reorg.

Field definitions for copy options (continued)

DELETE Select **D** to delete the original table space.

Select **K** to keep the original table space. If kept, !DB/DASD renames the table space by changing the .I0001 portion of the name to .OLDDS.

ONE JOB Select **Y** to generate all JCL in one job.

Select **N** to specify the number of table spaces processed in each job. If you specify **N**, you must specify the number of data sets in the NUMBER OF DSETS field.

NUMBER OF DSETS

This value is valid if one job =N. This is the number of data sets !DB/DASD processes in each job. This allows you to divide a large group of data sets into smaller job streams.

Special considerations for processing a job

MVS has a job step limit. !DB/DASD can generate a single job that exceeds the MVS limit. Use ONE JOB = N to reduce the size of the job created. Generally, you can process approximately 25 data spaces in 1 job without exceeding the maximum number of job steps for MVS. Use 25 DSETS as a reasonable number to start with. The number of job steps which are generated is dependent on the options selected on prior panels.

Tape Copy Options

Overview

If you selected **T** for the Tape Copy option on the previous panel, !DB/DASD displays the Tape Copy Options panel.

Tape Copy Options panel

```
TAPE COPY OPTIONS -------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>                                                    Scroll ===> PAGE

                      T A P E   C O P Y   O P T I O N S

  This panel is only displayed if have selected TAPE as copy to device on
  previous panel KTDPMOVE for utility program KTD1COPY or DSN1COPY.  This
  generates an extra copy step.

  This step is effective if your shop is DASD constrained. However, depending
  on the size of the Space(s) being moved, this can increase the amount
  of time for the move.

  All data will be copied to a single Tape. You must specify the Tape Device
  Name.

        TAPE DEVICE ===>             Name of Tape Device

           Press PF22 to back up to previous screen.
           Press PF15 to cancel generate.
           Press ENTER to continue.
```

Field definitions for the Tape Copy Options panel

There is only one field on the Tape Copy Options panel.

TAPE DEVICE Type the name of the tape device.

One Job Options

Overview

If you selected **Y** for the One Job option on the previous panel, !DB/DASD displays the One Job Options panel.

If you selected **N** for the One Job option on the previous panel, !DB/DASD displays the Jobcard Options panel.

The Copy Options panel determined *which* steps to generate. The One Job Options panel determines the *placement* of these steps in the job stream.

One Job Options panel

```
1 JOB OPTIONS ---------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>

                      1   J O B    O P T I O N S

   You have selected to run all copies in one job, Set all options.
   You may determine the placement of the steps with these options.


            IMAGE COPY ===> A   DB2 Image Copy before MOVE.
                            A   All in the first step.
                            E   Each just before its MOVE.

           CMDS BEFORE ===> A   DB2 STOP commands.
                            A   All in the first step.
                            E   Each just before its copy.

            CMDS AFTER ===> E   DB2 START commands.
                            A   All in the last step.
                            E   Each just after its copy.

Press PF22 to back up to previous screen.
Press ENTER to continue.      Press PF15 to cancel generate.
```

Field definitions for the One Job Options

If **NO** was selected for a certain step in the previous display, the word IGNORED appears to the left of the option. Only the fields without IGNORED are relevant.

IMAGE COPY Select **A** to generate all image copies together in one step at the beginning of the job. Select **E** to image copy a table space immediately before the DSN1COPY of that table space.

CMDS BEFORE Select **A** to generate all "Commands Before" together in one step at the beginning of the job. Select **E** to generate the commands immediately before each table space is used.

CMDS AFTER Select **A** to generate all "Commands After" together in one step at the end of the job. Select **E** to generate the commands immediately after each table space is used.

Image Copy Options

Overview

You can write the Image Copies to either tape or disk. If you choose to write them to tape, enter the device name that is to be used. All of the Image Copies are "stacked" on the same tape rather than each data set on a separate tape.

Image Copy Options panel

```
IMAGE COPY --------------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>

                      I M A G E   C O P Y

  You have selected to run Image Copies of each dataset.
  You may save the Image Copies either on tape or on DASD.
  If you choose to save them on tape, all Image Copies will be put
  on a single tape.  You must specify the tape device name.


         TAPE or DISK ===> D           Device for Image Copies.
                                       D - All to disk.
                                       T - All to a single tape.


          TAPE DEVICE ===> SYSDA       Name of Tape Device


              Press PF22 to back up to previous screen.
              Press PF23 to cancel Utility generate.
              Press ENTER to continue.
```

Job Card Options

Overview

You can use your own job card from any library you name as a model for the JCL generation. Enter the member name and table space name of the model on this display. For more information about the model see Chapter 12, “Tailoring the Job Stream” on page 253.

Job Card Options panel

```
JOBCARD OPTIONS -------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>

                        J O B C A R D    O P T I O N S

         To include a JOB (and JES) statements in the generated Utility JCL,
         enter the names of the library and member.


 JOB card member name ===> JBCRDMDL


JOB card dataset name ===> DB2DASD.USERPDS

                            This library will be opened for READ only.
                            TSO naming conventions will be used.
                            Enclose the name in quotes if it does
                            not begin with your TSO Prefix.

    Press PF22 to back up to previous screen
    Press ENTER to continue.      Press PF15 to cancel Utility generate.
```

This is the last opportunity to go back and change any of the MOVE options. When you press Enter, !DB/DASD generates the MOVE job stream.

Process Member Menu

Overview

When !DB/DASD generates the JCL, it saves the JCL in a member called *userid*Q in the User PDS.

This menu allows you to submit, edit, delete or print the saved statements.

Process Member Menu

```
PROCESS MEMBER ----------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>                                                        99/12/01  12:56


    UTILITY JCL statements have been saved in member STTD40Q

    Specify next action to be performed.


           Option ===>

                       1  SUBMIT         Submit the Job.
                       2  EDIT           Edit saved JCL statements.
                       3  DELETE         Delete saved JCL statements.
                       4  PRINT          Print the JCL statements member.
                       5  LOG            Copy the member to the LOG PDS.

                       6  DO LATER       Changes are saved, exit now.
                          or  PF15, END
```

Alter Options

Overview

The !DB/DASD Alter function renames and moves table spaces and indexes from the VCAT Display or the Storage Group Display. It also allows you to make data sets DB2-managed or user-managed.

Background

When !DB/DASD uses the Alter function, it changes DB2 and/or VSAM. !DB/DASD data does not reflect these changes until you run the next extract. For more information on when to run an extract, see "When to run a new extract" on page 35.

Functions

You can perform the following tasks with the Alter function.

- Tell DB2 to compress spaces the next time REORG is run
- Rename or move a data set
- Rename a storage group
- Move data sets to a different storage group

These tasks require a knowledge of the MOVE command options.

ALTER Options Panel

```
DISPLAY VCATS  ---------------   D B / D A S D - DBID=DB2C --------------
Cmd ===>
                       A L T E R    O P T I O N S

     To make the datasets user-managed or to change the VCAT name of
        datasets that are already user-managed, enter a new VCAT name
        and choose either Move or Rename.
     To make the datasets DB2-managed or to change the Storage Group
        of datasets that are already DB2-managed, enter a new Storage
        Group.

         COMPRESS SPACES ===> Y   Y  YES   N  NO (For ESA Compression)

           NEW VCAT NAME ===>
          MOVE or RENAME ===>

   OR

       NEW STORAGE GROUP ===>

                    Press PF15 to cancel DEFINE.
                    Press ENTER to continue.
```

Compressing Spaces

Overview

This unit tells you how to set the option that tells DB2 to initiate ESA compression.

Prerequisites

You must be on the Alter Options panel to use this feature.

Selecting compression

Use the following chart to decide what to specify in the COMPRESS SPACES field.

IF you type ...	THEN the next time there is a reorg, DB2 ...
Y	compresses the data spaces.
N	does not compress the data spaces.

Selecting Names

Overview

This unit shows you how to select a VCAT or storage group name.

Prerequisites

You must be on the Alter Options panel to use this feature.

Selecting a VCAT name

Follow this procedure to select a VCAT name that exists in the system.

Step	Action
1	On the Alter Options panel, type **?** in the New VCAT Name field.
2	Press Enter. **Result**: The system displays a list of VCAT names.
3	Type **S** beside the VCAT name you want to select.
4	Press Enter. **Result**: The system changes the data sets using the VCAT name you selected.

Selecting a storage group name

Follow this procedure to select a storage group name that exists in the system.

Step	Action
1	On the Alter Options panel, type **?** in the New Storage Group field.
2	Press Enter. **Result**: The system displays a list of storage group names.
3	Type **S** beside the storage group name you want to select.
4	Press Enter. **Result**: The system changes the data sets using the storage group name you selected.

Making Data Sets DB2-Managed

Overview

The Alter function in !DB/DASD allows you to change user-managed data sets to DB2-managed data sets.

Background

When you use this procedure, the system changes all user-managed data sets with the specified VCAT name to DB2-managed data sets. You must run a new extract before !DB/DASD data shows these data sets as DB2-managed.

Prerequisites

To perform this procedure, you must know the following information:

- the VCAT name of the data sets you want to make DB2-managed
- the name of the storage group to contain the data sets

Reminder

If you need a reminder about how to select a storage group name, see “Selecting Names” on page 185.

Making data sets DB2-managed

Follow this procedure to change user-managed data sets to DB2-managed data sets:

Step	Action
1	On the Primary Menu, type **C** in the Option field.
2	Press Enter. **Result**: The system displays the VCAT Display.
3	On the VCAT Display, type **A** in the Select field for the VCAT you want.
4	Press Enter. **Result**: The system displays the Alter Options panel.
5	On the Alter Options panel, select or type in the New Storage Group field the name of the storage group.
6	Press Enter. **Result**: The system makes all data sets with the specified VCAT name DB2-managed data sets.

Making Data Sets User-Managed

Overview

!DB/DASD's Alter function allows you to change DB2-managed data sets to user-managed data sets.

Background

When you perform this procedure, the system makes all specified data sets user-managed. You must run a new extract before !DB/DASD data shows that the data sets sets are user-managed.

Prerequisites

To perform this procedure, you must know the following information:

- VCAT name of the data sets you want to manage
- Storage group containing the data sets you want to manage (if they are in the same storage group)

Reminder

If you need a reminder about how to select a VCAT name, see “Selecting Names” on page 185.

Guidelines for choosing a method

Choose the appropriate method for making the data sets user-managed.

IF the data sets you want to manage . . .	**THEN**
Are in the same storage group	Remove them from the storage group.
Share a VCAT name	Assign a VCAT name to those data sets.

Making data sets user-managed (by removing them from a storage group)

Follow this procedure to change DB2-managed data sets in the same storage group to user-managed data sets:

Step	Action
1	On the Primary Menu, type **G** in the Option field.
2	Press Enter. **Result**: The system displays the Storage Group Display.
3	On the Storage Group Display, type **A** in the Select field for the storage group you want.
4	Press Enter. **Result**: The system displays the Alter Options panel.
5	On the Alter Options panel, select or type in the New VCAT Name field the name of the VCAT.
6	Press Enter. **Result**: The system generates a MOVE (with all the associated MOVE panels). The system makes all data sets in the specified storage group user-managed data sets.

Making data sets user-managed (by assigning a VCAT name)

Follow this procedure to change DB2-managed data sets sharing a VCAT name to user-managed data sets:

Step	Action
1	On the Primary Menu, type **C** in the Option field.
2	Press Enter. **Result**: The system displays the VCAT Display.
3	On the VCAT Display, type **A** in the Select field for the VCAT name you want.
4	Press Enter. **Result**: The system displays the Alter Options panel.
5	On the Alter Options panel, type **R** in the Move or Rename field.
6	Type in the New VCAT Name field the VCAT name you selected in step 3.
7	Press Enter. **Result**: The system makes all data sets with the specified VCAT name user-managed data sets.

Renaming Data Sets

Overview

!DB/DASD's Alter function allows you to change the VCAT name of all data sets with the same VCAT name.

Background

When you perform this procedure, the system takes the following actions:

- Changes the VSAM name of the data sets to the new VCAT name
- Issues DB2 ALTERs pointing the DB2 Catalog to data sets with the new VCAT name.
- Makes the data sets user-managed. You must run a new extract before the new locations and VCAT names appear in !DB/DASD data.

Prerequisites

To perform this procedure, you must know the following information:

- Present VCAT name of the data sets you want to rename
- New VCAT name for the data sets you want to rename

Renaming the VCAT name (without moving the data sets)

Follow this procedure to rename all data sets sharing a VCAT name.

Step	Action
1	On the Primary Menu, type **C** in the Option field.
2	Press Enter. **Result**: The system displays the VCAT Display.
3	On the VCAT Display, type **A** in the SL field for the VCAT you want.
4	Press Enter. **Result**: The system displays the Alter Options panel.
5	Type **R** in the Move or Rename field.
6	If you know the name of the new VCAT, type it in the New VCAT Name field. If you do not know the name of the new VCAT, follow these steps: • Type **?** in the New VCAT Name field and press Enter to display a list of VCATs. • Type **S** in the Select field for the new VCAT name you want.
7	Press Enter. **Result**: The system takes these actions: • Changes VSAM names of data sets to the new VCAT name • Issues DB2 ALTERs pointing the DB2 catalog to the new data set names • Makes data sets user-managed. You must run a new extract before the new VCAT names appear in !DB/DASD data.

Changing the VCAT name (moving data sets)

Follow this procedure to rename and move all data sets sharing a VCAT name.

Step	Action
1	On the Primary Menu, type **C** in the Option field.
2	Press Enter. **Result**: The system displays the VCAT Display.
3	On the VCAT Display, type **A** in the SL field for the VCAT you want.
4	Press Enter. **Result**: The system displays the Alter Options panel.
5	Type **M** in the Move or Rename field.
6	If you know the name of the new VCAT, type it in the New VCAT Name field. If you do not know the name of the new VCAT, follow these steps: • Type **?** in the New VCAT Name field and press Enter to display a list of VCATs. • Type **S** in the Select field for the new VCAT name you want.
7	Press Enter. **Result**: The system displays the Move options panels.
8	Follow the instructions beginning in “Changing Space Allocations” on page 160 to generate the MOVE jobstream. **Result**: The system takes these actions: • Changes the VSAM name of the data sets to the new VCAT name • Issues DB2 ALTERs pointing the DB2 catalog to data sets with the new VCAT name. • Makes the data sets user-managed. You must run a new extract before the new locations and VCAT names appear in !DB/DASD data.

Changing VCAT names of storage groups

Follow this procedure to change the VCAT name of a storage group. You can exclude individual data sets from this change.

Step	Action
1	On the Primary Menu, type **G** in the Option field.
2	Press Enter. **Result**: The system displays the Storage Group Display.
3	Type **A** in the Select field for the storage group you want.
4	Press Enter. **Result**: The system displays the Alter Options panel.
5	Type **M** in the Move or Rename field.
6	If you know the new VCAT name, type it in the New VCAT Name field. If you do not know the name of the new VCAT, follow these steps: • Type **?** in the New VCAT Name field to see a list of VCAT names. • Type **S** in the Select field beside the VCAT name you want.
7	Press Enter. **Result**: The system displays the Move Option panels.
8	You can use only the Size Options and Change Move Values panels. Press Enter to bypass the other panels. • To change space allocations, type new values on the Size Options panel. See "Changing Space Allocations" on page 160. • To exclude individual data sets, type **X** in the Select field beside the data sets you want to exclude.
9	On the Process Member Menu, type **1** in the Option field and press Enter. **Result**: The system takes the following actions: • Changes the VSAM name of all non-excluded data sets in the storage group to the new VCAT name • Issues DB2 ALTERs putting all non-excluded data sets in the new storage group and changing the space allocations of the DB2 data sets • Makes all non-excluded data sets user managed. You must run a new extract before the new VCAT name appears in !DB/DASD data.

Moving Data Sets between Storage Groups

Overview

!DB/DASD's Alter function allows you to move the contents of one storage group to another existing storage group.

Moving data sets to another storage group

Follow this procedure to move data sets to another storage group with the same VCAT name.

Step	Action
1	On the Primary Menu, type **G** in the Option field.
2	Press Enter. **Result**: The system displays the Storage Group Display.
3	Type **A** in the Select field for the storage group you want.
4	Press Enter. **Result**: The system displays the Alter Options panel.
5	If you know the storage group name you want, type it in the New Storage Group Name field. If you do not know the name of an existing storage group, follow these steps: • Type **?** in the New Storage Group Name field and press Enter to see a list of storage group names. • Type **S** in the Select field beside the storage group name you want.
6	Press Enter. **Result**: The system displays the Move Option panels.
7	You can use only the Size Options and Change Move Values panels. Press Enter to bypass the other panels. • To change space allocations, type new values on the Size Options panel. See "Changing Space Allocations" on page 160. • To exclude individual data sets, type **X** in the Select field beside the data sets you wish to exclude.

Moving data sets to another group (continued)

Step	Action
8	On the Process Member Menu, type **1** in the Option field and press Enter. **Result**: The system takes these actions: • If the you changed the volume, the primary quantity, or the secondary quantity, !DB/DASD moves the VSAM data sets based on the new values. • Issues DB2 ALTERs putting all non-excluded data sets in the new storage group and changing the space allocations of the DB2 data sets. • Makes all non-excluded data sets DB2-managed. You must run a new extract before the data sets appear in the new storage group in !DB/DASD data.

Chapter 8. Examples Using MOVE

Introduction

This chapter provides three examples using the MOVE facility: how to move all DB2 data sets from one volume to another; how to reallocate a group of data sets to save DASD space; and, how to set up a batch job to keep your system clean without any manual intervention.

Chapter contents

Overview of the Chapter 200
Example 1–Moving One Volume to Another 201
Example 2–Reclaiming DASD Space 207
Example 3–Setting Up a Batch Job 214

Overview of the Chapter

Overview

This chapter shows three uses of the MOVE facility:

- **Volume Move.** The first example shows how to move all DB2 data sets from one volume to another.
- **Reclaim DASD Space.** The second example shows the steps required to reallocate a group of data sets to save DASD space.
- **Hands-Free Cleanup.** The third example shows how to set up a batch job to keep your system clean without any manual intervention.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then locate the page number of the units that you need for your task.

	Example 1	Example 2	Example 3
	p.201	p.207	p.214
Move all of your DB2 data sets from one DASD volume to another.	√		
Reclaim DASD space by reallocating a group of data sets.		√	
Create a batch job to maintain the DASD volumes where your DB2 data sets reside.	√		√

Example 1–Moving One Volume to Another

Overview

This example shows how to move all the DB2 data sets on one volume to another volume.

Displaying all the volumes

```
PRIMARY MENU ----------------   D B / D A S D - DBID=DB2C ------------------
Cmd ===>                                                      99/12/07  07:36
                           P R I M A R Y    M E N U

    Option ===> V                        (Use  /"x"  to establish a window)

                S  Summary                          H  Housekeeping
                V  Volumes                          J  Batch Job
                M  Multivolume                      R  Recall Options
                B  Databases                        U  Define Cluster
                D  Data Spaces                      X  Exit
                O  Orphans
                W  Widows                             Global Commands
                G  Stogroups
                C  VCATS                              SQL  Dynamic SQL

    Used=  44%    as of Last Extract run on  01/15/98  at 11:35
    Unused= 22.8%   of a Single Density Volume.

                                    Version: 500  Maint. Level: 9503  PSP: 1

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```

Follow this procedure to display a list of all volumes used by the DB2 system.

Step	Action
1	On the Primary Menu, type **V** in the Option field.
2	Press Enter. **Result:** The system displays a list of all volumes containing DB2 data sets.

Selecting a volume with the data sets you want to move

Use this panel to select the volume containing the data sets you want to move. This panel is scrollable.

```
DISPLAY DB2 VOLUMES ------   D B / D A S D - DBID=DB2C ----- VOLUME 1  OF 131
Cmd ===>                                                    SCROLL ===> PAGE
                     D I S P L A Y    D B 2    V O L U M E S

Cmds:    DO (Menu)   DUMP       MOVE       RESTORE      UNUSED
Selects: ?  (Menu)   B DBDs     D Dump     H History    M Move
                     R Restore  S Tblspcs  U Unused     X Exten        ts
-------------------------------------------------------------------------------
                 # OF      # OF      ALLO      USED   % VOL   % VOL     AVAIL
SEL VOLSER   DATASETS   EXTENTS    TRACKS    TRACKS    ALLO    USED    TRACKS
--- ------ --------- --------- --------- --------- ------- ------- ---------
 _  *ERROR        854         -         -         -     0.0     0.0
 _  MIGRAT      3,791         -         -         -     0.0     0.0
 _  7A8251         12        12     1,361       255     5.1     1.0
 _  7A8252         15        17     7,028       396    26.5     1.5
 _  7B0001          3         3         3         3     0.0     0.0
 _  7B0002        160       172       989       441     3.7     1.7
 _  7B0145          3         3     4,008       333    15.1     1.3
 _  7B0147         35        35       204        73     0.8     0.3
 _  7D0009         28       172     2,232     1,983     8.4     7.5
 M  7D0010          7        11       191        42     0.7     0.2
 _  7F1151          1         1       595       593     2.2     2.2
 _  7F1152         10        12        40        34     0.2     0.1
 _  7H0013         37        37     1,587       492     6.0     1.9
 _  7H0014         14        17       477       308     1.8     1.2
 _  7H0015         16        23       665        51     2.5     0.2
 _  7H1023         11        54     3,435     1,290    12.9     4.9
 _  7H1057         24        34     2,452       582     9.2     2.2
```

Follow this procedure to select a volume containing the data sets you want to move.

Step	Action
1	Type **M** in the SEL field for the volume containing the data sets you want to move.
2	Press Enter. **Result:** The system displays a panel allowing you to set size allocations for the data sets you are moving.

Setting size allocations for the data sets you are moving

Use this panel to set the size allocations of the data sets you are moving.

```
SIZE OPTIONS ----------------   D B / D A S D ----  DBID=DB2C ---------------
Cmd ===>

                         S I Z E    O P T I O N S

   PRI SIZE FACTOR ===>                       MOVE PROFILE ===>

           PRIMARY ===> 1
                        1 - SAME  - New PQTY = Current PQTY
                        2 - ALLO  - New PQTY = Current Allocated Size
                        3 - USED  - New PQTY = Current Used Size
                        4 - SAME2 - New PQTY = Current PQTY + 15%
                        5 - ALLO2 - New PQTY = Current Allo Size + 15%
                        6 - USED2 - New PQTY = Current Used Size + 15%

   SEC SIZE FACTOR ===>

         SECONDARY ===> 1
                        1 - SAME  - New SQTY = Current SQTY
                        2 - ALLO  - New SQTY = 15% of Current Allocated Size
                        3 - USED  - New SQTY = 15% of Current Used Size
                        4 - PQTY  - New SQTY = 15% of Current PQTY

    Press ENTER to continue.      Press PF15 to cancel.
```

Follow this procedure to set primary and secondary quantities for the data sets you are moving.

In this example, **1** is selected for the PRIMARY and SECONDARY values. The new data sets will be allocated using the same values for the primary and secondary quantities for the original data sets.

Setting size allocations for the data sets you are moving (continued)

Step	Action
1	Type **1** in the PRIMARY field. The value of 1 in the PRIMARY field sets the primary quantity for the new data set to be the same as primary quantity for the current data set. (Use value 1, 2, or 3 if you do not specify a value in the PRI SIZE FACTOR field; use value 5 or 6 if you do specify a value in the PRI SIZE FACTOR field.)
2	Type **1** in the SECONDARY field to set the secondary quantity of the new data sets to be the same as the secondary quantity for current data sets.
3	Type **1** in the SECONDARY field to set the secondary quantity of the new data sets equal to the secondary quantity of the current data sets.
4	Press Enter. **Result:** The system displays a panel allowing you to specify the volume to which the data sets will move.

Specifying the volume where the data sets will move

Use this panel to specify the volume where the data sets will move.

```
CHANGE VOLUMES --------------   D B / D A S D -- DBID=DB2C  -------------------
Cmd ===>                                                    Scroll ===> PAGE
                         C H A N G E    V O L U M E S
 This screen will not allow you to move a storage-group managed dset to a
 volume outside of the storage group.  You must make these changes later.
 To replace all occurrences of a volume with a new volume, type the new
 volser in the new volume column.
 Press ENTER to save changes and continue with MOVE function.
 Press PF22  to go back to the previous screen.
 Press PF23 to cancel MOVE.
                                      ALL TO VOLUME===> 7K9261
                           DISPLAY SPACE FOR VOLUME===>
------------------------------------------------------------------------------
                     AVAIL    # OF  TARGET          NEW
                     SPACE   DSETS  VOLUME          TARGET
                   ---------  ------  ------          ------
                     2,792       0  7D0010          7D0010
                     1,396       7  7K9261          7K9261
 ****************************** BOTTOM OF LIST *******************************
```

Specifying the volume where the data sets will move (continued)

Follow this procedure to specify the volume where the data sets will move.

Step	Action
1	Type the name of the volume where you want to move the data sets in the DISPLAY SPACE FOR VOLUME field. **Result:** The system lists the available space and number of data sets on that volume.
2	If the volume you have specified has enough space for the data sets, type the name of that volume in the ALL TO VOLUME field. Otherwise, return to step 1.
3.	Press Enter. **Result:** The system displays the change in available space and number of data sets for the current volume and the volume where the data sets are moving.
4	Press Enter. **Result:** The system generates a job stream that • Issues DB2 commands to stop the table spaces containing the moved data sets • Reallocates the data sets (!DB/DASD will automatically do the necessary conversions if moving from one type of device to another, for example a 3380 to 3390.) • Moves the data • Renames the moved data • Starts the table spaces to DB2 The generated job stream can be edited, printed, or submitted from within !DB/DASD.

Example 2–Reclaiming DASD Space

Overview

This example shows how to reallocate a group of data sets to recover unused DASD space.

Determining how much DASD space is unused

The Primary Menu example below indicates that for the last DASD analysis, only 44% of the DASD space allocated to DB2 data sets actually contains data. The rest is unused and is equivalent to almost *twenty-three* 3380 single density volumes.

```
PRIMARY MENU ----------------   D B / D A S D - DBID=DB2C ------------------
Cmd ===>                                                        99/12/07  07:36
                           P R I M A R Y    M E N U

    Option ===> D                         (Use  /"x"  to establish a window)

                S  Summary                          H  Housekeeping
                V  Volumes                          J  Batch Job
                M  Multivolume                      R  Recall Options
                B  Databases                        U  Define Cluster
                D  Data Spaces                      X  Exit
                O  Orphans
                W  Widows                             Global Commands
                G  Stogroups
                C  VCATS                              SQL  Dynamic SQL

    Used=  44%    as of Last Extract run on  01/15/98  at 11:35
    Unused= 22.8%   of a Single Density Volume.

                                    Version: 500  Maint. Level: 9503  PSP: 1

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```

Selecting data sets with wasted space

Follow this procedure to select data sets with wasted space.

Step	Action
1	Type **D** on the Primary Menu. **Result:** The system displays a list of all DB2 data sets.
2	Enter one or more "Filter" commands to restrict the list of data sets displayed. For more information on filtering, see Chapter 5, “Filtering Object Lists” on page 87.

Moving selected data sets

This filtered panel shows only data sets with more than 2,000 tracks allocated and less than 20% of the allocated space used. It lists 13 data sets that have almost 42,000 tracks allocated (slightly more than one triple density 3380) but only 2,100 tracks actually containing DB2 data. Reallocating just these 13 data sets can save one full triple density 3380 unit.

```
DISPLAY DB2 SPACES --------   D B / D A S D - DBID=DB2C- SPACE 1 OF 15(F)
Cmd ===> MOVE                                          Scroll ===> PAGE
                     D I S P L A Y   D B 2   S P A C E S

Cmds:    DO (Menu)   DUMP      MOVE     RESTORE
Selects: ?  (Menu)   D Dump    M Move   R Restore   X Extents
------------------------------------------------------------------------------
                          I   PQTY   SQTY  NO.     ALLO   USED   % DS
SEL DBNAME   SPACE    PT X   TRKS   TRKS  XTS   TRACKS TRACKS   USED VOLSER
--- -------- -------- -- - ------ ------ ---- -------- ------  ----- ------

 _  DSNDB07  DSNTMP02           0      0    3    3,000      0    0.0 7B0110
 _  MJ89PALC MJ89WMMD           0      0    1    4,200     30    0.7 7H1001
 _  MJ89PALC MJ89WTRN           0      0    1    2,550     30    1.2 7H1002
 _  MJ89PALC MJ89WTST           0      0    1    2,700     30    1.1 7H1067
 _  MJ89PALC MJ89WTYP           0      0    2    3,900     60    1.5 7H1047
 _  MJ89PARS MJ89WNFO           0      0    1    2,400     30    1.3 7J0030
 _  MJ89PARS MJ89WTRN           0      0   11    3,150     30   10.5 7J0030
 _  MJ89PARS MJ89WTST           0      0   13    3,540     75   10.6 7J0030
 _  MJ89PARS MJ89WTYP           0      0   25    6,135     35   12.0 7J0012
 _  RL23PETS RL23ITP2           0      0    1    2,100     60    2.9 7M8143
 _  RL23PETS RL23ITP3           0      0    1    2,010     60    3.0 7M8143
 _  TR44PROL TR44CONT           0      0    1    4,005     30    8.2 7M8146
 _  VZ20OARS VZ20STAT           0      0    1    2,205     30    1.4 7J0184

    TOTALS       13                        62   41,895    2,100
 ****************************** BOTTOM OF LIST ******************************
```

Follow this procedure to move all data sets on the panel.

Step	Action
1	Type **MOVE** on the command line.
2	Press Enter. **Result:** The system displays a panel allowing you to set size allocations for the data sets you are moving.

Setting size allocations for the data sets you are moving

Use this panel to set the size allocations of the data sets you are moving.

```
SIZE OPTIONS ----------------   D B / D A S D ----  DBID=DB2C ---------------
Cmd ===>

                         S I Z E    O P T I O N S

   PRI SIZE FACTOR ===> 10                   MOVE PROFILE ===>

           PRIMARY ===> 6
                        1 - SAME  - New PQTY = Current PQTY
                        2 - ALLO  - New PQTY = Current Allocated Size
                        3 - USED  - New PQTY = Current Used Size
                        4 - SAME2 - New PQTY = Current PQTY + 10%
                        5 - ALLO2 - New PQTY = Current Allo Size + 10%
                        6 - USED2 - New PQTY = Current Used Size + 10%

   SEC SIZE FACTOR ===> 10

         SECONDARY ===> 3
                        1 - SAME  - New SQTY = Current SQTY
                        2 - ALLO  - New SQTY = 10% of Current Allocated Size
                        3 - USED  - New SQTY = 10% of Current Used Size
                        4 - PQTY  - New SQTY = 10% of Current PQTY

    Press ENTER to continue.      Press PF15 to cancel.
```

As shown on the Primary Menu, too much space is currently allocated for these data sets. To save space you can move the data to a new data set which is just a little larger than needed to accommodate all the data.

To reclaim the wasted DASD, follow this procedure to set primary and secondary quantities for the data sets you are moving to reclaim unused DASD space.

Step	Action
1	Type **10** in the PRI SIZE FACTOR field to make the new data set just a little larger than needed to accommodate all the data.
2	Type **6** in the PRIMARY field to set the primary quantity of the new data sets equal to the Current Used Size + 10%.
3	Type **3**in the SECONDARY field to set the secondary quantity of the new data sets equal to to 10% of Current Used Size.
4	Press Enter. **Result:** The system displays a panel allowing you to specify the volume to which the data sets will move.

Specifying the volume where the data sets will move

This panel lists all the different volumes on which the 13 data sets are currently allocated. Use this panel to specify the volume where the data sets will move.

```
CHANGE VOLUMES --------------   D B / D A S D -- DBID=DB2C --------------------
Cmd ===>                                                    Scroll ===> PAGE
                          C H A N G E    V O L U M E S
 This screen will not allow you to move a storage-group managed dset to a
 volume outside of the storage group.  You must make these changes later.
 To replace all occurrences of a volume with a new volume, type the new
 volser in the new volume column.
 Press ENTER to save changes and continue with MOVE function.
 Press PF22  to go back to the previous screen.
 Press PF23 to cancel MOVE.
                                      ALL TO VOLUME===>
                             DISPLAY SPACE FOR VOLUME===>
------------------------------------------------------------------------------
                     AVAIL    # OF  TARGET          NEW
                     SPACE   DSETS  VOLUME          TARGET
                  ---------  ------  ------          ------
                     2,492       2  7M8143          7J1102
                     3,527       1  7M8146          7J1102
                     2,715       1  7H1001          7J1102
                     4,969       1  7H1002          7J1102
                     3,359       1  7H1047          7J1102
                     4,909       1  7H1067          7J1102
                     4,087       2  7B0110          7J1102
                     1,923       1  7J0012          7J1102
                     6,287       3  7J0030          7J1102
                     1,977       2  7J0184          7J1102
 ****************************** BOTTOM OF LIST ********************************
```

Specifying the volume where the data sets will move (continued)

The new data sets will be much smaller than the originals, so they can be moved onto a single volume. Follow this procedure to specify the volume where the data sets will move.

Step	Action
1	Type the name of the volume where you want to move the data sets in the DISPLAY SPACE FOR VOLUME field. **Result:** The system lists the available space and number of data sets on that volume.
2	If the volume you have specified has enough space for the data sets, type the name of that volume in the ALL TO VOLUME field. Otherwise, return to step 1.
3.	Press Enter. **Result:** The system displays the change in available space and number of data sets for the current volume and the volume where the data sets are moving.
4	Press Enter. **Result:** The system displays a panel allowing you to change individual size and volume information for the new data sets.

Changing individual data sets

This display allows you to change the new size and volume information of individual data sets. It also allows you to exclude individual data sets from the list.

```
CHANGE MOVE VALUES ----------   D B / D A S D - DBID=DB2C ----- SPACE 1 OF 13
Cmd ===>                                                    Scroll ===> PAGE
                      C H A N G E    M O V E    V A L U E S
 Type over values or Select with S to change information for a single dataset.
 Cmds:   ENTER save and continue    PF22 previous screen    PF23 cancel
 Sels:   F force    I include    S change single    X exclude
------------------------------------------------------------------------------
                           ALLO   USED         NEW    NEW
SEL DBNAME    SPACE        TRKS   TRKS #XTS   PQTY   SQTY VOLUME  VOLUME VOLUME
--- --------  --------  ------ ------ ---- ------ ------ ------- ------ ------
 X  DSNDB07   DSNTMP02   3,000      0    3      0      0  ****EXCLUDED****
    MJ89PALC  MJ89WMMD   4,200    240    1    240     30  7J1102
    MJ89PALC  MJ89WTRN   2,550    210    1    210     30  7J1102
    MJ89PALC  MJ89WTST   2,700    240    1    240     30  7J1102
    MJ89PALC  MJ89WTYP   3,900    300    2    300     30  7J1102
    MJ89PARS  MJ89WNFO   2,400     30    1     30      3  7J1102
    MJ89PARS  MJ89WTRN   3,150     30   11     30      3  7J1102
    MJ89PARS  MJ89WTST   3,540     30   13     30      3  7J1102
    MJ89PARS  MJ89WTYP   6,135     30   25     30      3  7J1102
    RL23PETS  RL23ITP2   2,100     60    1     60      6  7J1102
    RL23PETS  RL23ITP3   2,010     60    1     60      6  7J1102
    TR44PROL  TR44CONT   4,005    330    1    330     45  7J1102
```

Follow this procedure to exclude an individual data set from the list.

Step	Action
1	Type **X** in the SEL field of the data set you want to exclude from the list.
2	Type Enter. **Result:** The system displays the word ****EXCLUDED**** in the VOLUME field beside the excluded data set.
3	Press Enter. **Result:** The system generates all necessary JCL. **Note:** Moving this group of 12 data sets will save over 39,000 tracks, approximately equivalent to one triple-density 3380 DASD device.

Example 3–Setting Up a Batch Job

Overview

This example shows how to set up a batch job to run !DB/DASD. The resulting job should be run on a regular basis to keep your system clean.

Setting up the batch job

Use this procedure to set up a batch job.

```
PRIMARY MENU ----------------   D B / D A S D - DBID=DB2C ------------------
Cmd ===>                                                      99/12/07  07:36
                          P R I M A R Y    M E N U

    Option ===> J                        (Use  /"x"  to establish a window)

                S  Summary                          H  Housekeeping
                V  Volumes                          J  Batch Job
                M  Multivolume                      R  Recall Options
                B  Databases                        U  Define Cluster
                D  Data Spaces                      X  Exit
                O  Orphans
                W  Widows                             Global Commands
                G  Stogroups
                C  VCATS                              SQL  Dynamic SQL

    Used=  44%    as of Last Extract run on  01/15/98  at 11:35
    Unused= 22.8%   of a Single Density Volume.

                                   Version: 500  Maint. Level: 9503  PSP: 1

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```

Follow these steps to set up a batch job

Step	Action
1	Type **J** in the Option field on the Primary Menu.
2	Press Enter. **Result:** The system displays the Build Batch Jobstream panel, which allows you to specify DASD exceptions.

Specifying DASD exceptions

This panel allows you to specify DASD exceptions that should be fixed on a regular basis. The values you use depend on the standards and requirements at your shop.

You may need to build several different jobs with the batch facility to fulfill all of the requirements for your shop. For example, one job can be used to clean up all data sets on more than five extents. Another job can be used to clean up all data sets which are vastly overallocated (perhaps USED%<50).

These jobs only need to be set up once. As your DASD usage becomes more efficient, you may want to change them to meet new requirements.

```
BUILD BATCH JOBSTREAM--------- D B / D A S D --- DBID=DB31 --------------------
Cmd ===>

  FILTERS FOR DATASETS:                 |   OPTIONS FOR JOBSTREAM:
        OP VALUE                        |
  XTNTS              No. Extents        |   Cmds Before:  V      Cmds After:  Z
  ALLO               Trks Alloc         |   All cmds together:  Y
  USED               Trks Used          |   Delete Original:  Y
  USED%              % Used of Alloc    |   Copy Program:  KTD1COPY
  TYPE             ( T =Tablespace,     |   Image Copy:  Y     All together:  Y
                     I =Index name)     |   Devname:  TAPE
                                        |   Devtyp:  D       D =Dasd, T =Tape
  DB =               Database name      |   Primary QTY:  USED2
  SP =               Table/Index name   |   Secondary QTY:  USED
  Pri Size Factor:  15                  |   Sec Size Factor:  15
  Exclude DB =                          |   All in one job:  Y      Y or Nnn
  Exclude SP =                          |   Volume or Profile:
  JOBCARD MEMBER=  JOBCARD
  JOBCARD LIBRARY=  'CDS.DSD500.DB31.USER'
  SUBMIT=  N  Y / N

   Press ENTER to continue.      Press PF15 to cancel batch job generate.
```

Follow these steps to set up a batch job.

Step	Action
1	Type **> 5** in the XTNTS field.
2	Type **> 200** in the ALLO field.
3	Press Enter. **Result:** The system displays the Process Member menu.

Specifying options for processing

The Process Member panel allows you to specify options for processing. This is an example of the Process Member menu.

```
PROCESS MEMBER ----------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>                                                      99/12/01  12:56


    UTILITY JCL statements have been saved in member STTD40Q

    Specify next action to be performed.


          Option ===>

                      1  SUBMIT         Submit the Job.
                      2  EDIT           Edit saved JCL statements.
                      3  DELETE         Delete saved JCL statements.
                      4  PRINT          Print the JCL statements member.
                      5  LOG            Copy the member to the LOG PDS.

                      6  DO LATER       Changes are saved, exit now.
                         or  PF15, END
```

The chart lists your choices and the appropriate action.

IF you...	THEN...
want to submit a job for processing,	type **1** in the Option field and press Enter.
want to invoke the ISPF editor for the named member,	type **2** in the Option field and press Enter. When you finish editing the system returns you to the Process Member menu.
delete the PDS member,	type **3** in the Option field and press Enter.
want to print the member to a JES printer,	type **4** in the Option field and press Enter.
want to save the member and exit the MOVE facility,	type **5** in the Option field and press Enter.

Chapter 9. Dumping Data Sets

Introduction

This chapter provides information about dumping data sets, both individually and in groups. It also tells you how to use the !DB/DASD panels that control the DUMP command.

Chapter contents

Overview of the Chapter 218
Data Set Types 220
Migrated or Error Display 222
DUMP Options 223
Job Card Options 227
Process Member Menu 228

Overview of the Chapter

Overview

The JCL generation for the DUMP command is very flexible and is based on options you set. Once you issue the DUMP command (or **D** select), a series of options panels appears. This chapter describes these panels.

In this series of panels, you can back up to a previous panel by using the PF key indicated on the panel or by issuing the REV command on the command line.

You can cancel DUMP from any panel by pressing End. You must confirm the cancel request before the DUMP processing is terminated.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then locate the page number of the units that you need for your task.

	Data Set Types	Migrated or Error Display	DUMP Options	Job Card Options	Process Member Menu
	p.220	p.222	p.223	p.227	p.228
Dumping individual data sets	√	√	√	√	√
Dumping groups of data sets	√	√	√	√	√
Deciding to run a new extract		√		√	

Data Set Types

Individual data sets

To dump an individual table space, the current display must be a display of table spaces, such as the Display DB2 Spaces panel. Choose the appropriate table space with a **D** to begin DUMP processing.

Groups of data sets

You can dump any group of table spaces that can be displayed, excluding *ERROR and migrated data sets. You can group the data sets in several ways.

For example, to dump *all* DB2 table spaces on a specific volume, there are two methods of grouping.

- Choose **V** on the Primary Menu to list volumes. Choose a volume with **D**. When you use the **D** select on a volume or database, !DB/DASD dumps all data spaces (except *ERROR and migrated data sets) on that volume or database.
- Alternatively, choose **D** on the Primary Menu to list all table spaces. Filter the object list with the VOL=*xxxxxx* command. This results in a list of all table spaces on volume *xxxxxx* (the volume to be dumped). Since you are specifying that !DB/DASD dump all table spaces on the list, type **DUMP** on the command line to begin DUMP processing.

Special cases

DUMP works on an individual table space or group of table spaces. However, there are some exceptions.

***ERROR data sets (widows)**
These cannot be dumped since they do not physically exist. For more information about *ERROR data sets, see “Introduction to Widow Data Sets” on page 250.

Migrated data sets
These must be recalled from the secondary resources before they can be dumped. For more information about migrated data sets, see “Introduction to Migrated Data Sets” on page 243.

DB2 Catalog The DB2 catalog must be processed separately from other DB2 data sets. !DB/DASD automatically excludes DB2 catalog data sets from the DUMP processing. To dump the DB2 catalog, select data sets that are exclusively catalog data sets. The job stream that is generated must have SYSADM authority and must be run when DB2 is down. *Image Copy the catalog data sets before you run this job.*

Migrated or Error Display

Overview

!DB/DASD displays the Migrated or Dropped panel if both of the following conditions exist.

- The data space you specified to DUMP has been migrated or dropped since the last extract.
- You specified that !DB/DASD prompt you before recalling migrated data sets. See Chapter 15, “Defining Recall Options” on page 305 for more information.

If you specify that you want to be prompted before recalling migrated data sets, this panel appears once for each table space that has been dropped or migrated. If this panel occurs several times, it is an indication that your extract is not current and that you should run a new extract.

If you choose not to recall migrated data sets, !DB/DASD does not include the data sets in the DUMP processing.

Migrated or dropped panel

This is the Migrated panel that appears when you set !DB/DASD to prompt you before migrating data sets.

```
DISPLAY DB2 SPACES  ----   D B / D A S D - DBID=DB2C ----- Response required
Cmd ===>


   Dataset = AY55B2.DSNDBD.DR12JHBT.DDRTEST7.I0001.A001

       This dataset has been MIGRATED to DASD   since the last extract.
       You have requested to be prompted for the action to be taken.


     RECALL DATASET ==> N    Y / N


        ************************************************************
        *                                                          *
        *   Press ENTER to continue.                               *
        *                                                          *
        *              Press END to end the MOVE processing.       *
        *                                                          *
        ************************************************************
```

DUMP Options

Overview

The JCL generated for the DUMP command is determined by options that you set. The DUMP Options panel allows you to select which commands !DB/DASD includes in the JCL.

DUMP Options panel

```
DUMP OPTIONS ------------------   D B / D A S D - DBID=D31A --------------------
 Cmd ===>                                                      99/12/14  11:44
                            D U M P    O P T I O N S
                 PROGRAM ===> ADRDSSU
          STOP AT COMMIT ===>           Y  - Yes    N - No (If P or V below)
         CMDS BEFORE QUI ===>           P - Stop    R - St RO
                                        U - St UT   V = P & U  " " = NONE
                 QUIESCE ===>           Y  - Yes    N - No
         CMDS BEFORE DMP ===>           P - Stop    R - St RO
                                        U - St UT   V = P & U  " " = NONE
          DB2 CMDS AFTER ===>           P  - Stop   R - St RO
                                        W  - St RW  Z = P & R  " " - None
                  DELETE ===>           D  - Delete Data Set after Dump
                                        K  - Keep the Data Set.
        TAPE DEVICE NAME ===>              - Device Name for Tape Drive
              OUTPUT DSN ===>

                    Press PF23  to cancel DUMP.
                    Press ENTER to continue.
```

Field definitions for DUMP Options

PROGRAM Use this option to specify which program to use to dump the table spaces. ADRDSSU is the default.

> **Caution**
>
> If you use a dump utility other than ADRDSSU, verify that the parameters match the parameters in ADRDSSU. If they do not match, you need to edit the generated JCL.

STOP AT COMMIT

Specify **Y** if you want to include all the changes to a database before commit time.

Specify **N** if

- you typed **P** or **V** in the DB2 CMDS BEFORE field, or
- the database is down.

CMDS BEFORE QUIESCE

Use this option to specify the DB2 command generated in a first step that precedes a checkpoint in the database. Valid values are

blank	No DB2 commands.
P	-STOP DATABASE commands are generated for each table space to be processed.
R	-START DATABASE ACCESS(RO) (Read Only) are generated for each table space to be processed.
U	-START DATABASE ACCESS(UT) are generated for each table space to be processed. **UT** allows only DB2 utilities to process the table spaces.
V = P + U.	ACCESS(UT).

Field definitions for Dump Options (continued)

QUIESCE Specify **Y** to set a checkpoint in the database so that you get a clean copy of the database.

CMDS BEFORE DUMP
Use this option to specify the DB2 command generated in a first step that precedes all the DUMP steps. Valid values are

blank No DB2 commands.

P -STOP DATABASE commands are generated for each table space to be processed.

R -START DATABASE ACCESS(RO) (Read Only) are generated for each table space to be processed.

U -START DATABASE ACCESS(UT) are generated for each table space to be processed. **UT** allows only DB2 Utilities to process the table spaces.

V = P + U. ACCESS(UT).

Field definitions for Dump Options (continued)

DB2 CMDS AFTER
Use this option to specify the DB2 command generated in a generated in a last step that follows all the DUMP steps. You can specify one of the following values:

blank	No DB2 Commands
P	-STOP DATABASE commands are generated for each table space to be processed.
R	-START DATABASE ACCESS(RO) (Read Only) are generated for each table space to be processed.
W	-START DATABASE ACCESS(RW) (Read and Write) are generated for each table space to be processed.
Z = P + R.	DATABASE ACCESS(RO).

DELETE Select **D** to delete the original table space. Select **K** to keep the original table space. If kept, !DB/DASD renames the table space by changing the .I0001 portion of the name to .OLDDS.

TAPE DEVICE NAME
Specify the name of the tape device where you want the data set to be dumped.

OUTPUT DSN Specify the name you want for the output data set.

Job Card Options

Overview

You may use your own job card from any library you name as a model for the JCL generation. Enter the member name and table space name of the model on this display. For more information about the model see Chapter 12, “Tailoring the Job Stream” on page 253.

Job Card Options panel

```
JOBCARD OPTIONS -------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>

                        J O B C A R D    O P T I O N S

         To include a JOB (and JES) statements in the generated Utility JCL,
         enter the names of the library and member.


 JOB card member name ===> JBCRDMDL


JOB card dataset name ===> DB2DASD.USERPDS

                            This library will be opened for READ only.
                            TSO naming conventions will be used.
                            Enclose the name in quotes if it does
                            not begin with your TSO Prefix.

    Press PF22 to back up to previous screen
    Press ENTER to continue.      Press PF15 to cancel Utility generate.
```

This is the last opportunity to go back and change any of the DUMP options. When you press Enter on this panel, !DB/DASD generates the DUMP job stream.

Process Member Menu

Overview

When !DB/DASD generates all of the JCL, it saves the JCL in a member in the User PDS. This menu allows you to submit, edit, delete, or print the saved statements.

Process Member menu

```
PROCESS MEMBER ----------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>                                                      99/10/22  09:16



    UTILITY JCL statements have been saved in member STTD40Q

    Specify next action to be performed.


           Option ===>

                       1  SUBMIT         Submit the Job.
                       2  EDIT           Edit saved JCL statements.
                       3  DELETE         Delete saved JCL statements.
                       4  PRINT          Print the JCL statements member.
                       5  LOG            Copy the member to the LOG PDS.

                       6  DO LATER       Changes are saved, exit now.
                          or  PF15, END
```

Chapter 10. Restoring Data Sets

Introduction

This chapter provides information about restoring data sets, both individually and in groups. It also tells you how to use the !DB/DASD panels that control the RESTORE command.

Chapter contents

Overview of the Chapter 230
Data Set Types 232
Migrated or Error Display 234
RESTORE Options 235
Job Card Options 238
Process Member Menu 239

Overview of the Chapter

Overview

The JCL generation for the RESTORE command is very flexible and is based on options you set. When you issue the RESTORE command (or **R** select), a series of options panels appears. This chapter describes these panels.

In this series of panels, you can back up to a previous panel by using the PF key indicated on the panel or by issuing the REV command on the command line.

You can cancel RESTORE from any panel by pressing End. You must confirm the cancel request before the RESTORE processing is terminated.

Background on running a new extract

Because !DB/DASD displays data from the latest !DB/DASD extract of the DB2 catalog, you must run a new extract before !DB/DASD data will reflect changes.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then locate the page number of the units that you need for your task.

	Data Set Types	Migrated or Error Display	RESTORE Options	Job Card Options	Process Member Menu
	p.232	p.234	p.235	p.238	p.239
Restoring individual data sets	√	√	√	√	√
Restoring groups of data sets	√	√	√	√	√
Deciding to run a new extract		√			√

Data Set Types

Individual data sets

To restore an individual table space, the current display must be a display of table spaces, such as the Display DB2 Spaces panel. Choose the appropriate table space with a **R** to begin RESTORE processing.

Groups of data sets

You can restore any group of table spaces that can be displayed, excluding *ERROR and migrated data sets. You can group the data sets in several ways.

For example, to restore *all* DB2 table spaces on a specific volume, there are two methods of grouping.

- Choose **V** on the Primary Menu to list volumes. Choose a volume with **R**. When you use the **R** select on a volume or database, !DB/DASD dumps all data spaces (except *ERROR and migrated data sets) on that volume or database.
- Alternatively, choose **D** on the Primary Menu to list all table spaces. Filter the object list with the VOL=*xxxxxx* command. This results in a list of all table spaces on volume *xxxxxx* (the volume to be restored). Since you are specifying that !DB/DASD restore all table spaces on the list, type **RESTORE** on the command line to begin RESTORE processing.

Special cases

RESTORE works on an individual table space or group of table spaces. However, there are some exceptions.

***ERROR data sets (widows)**
These cannot be restored since they do not physically exist. For more information about *ERROR data sets, see “Introduction to Widow Data Sets” on page 250.

Migrated data sets
These must be recalled from the secondary resources before they can be restored. For more information about migrated data sets, see “Introduction to Migrated Data Sets” on page 243.

DB2 Catalog The DB2 catalog must be processed separately from other DB2 data sets. !DB/DASD automatically excludes DB2 catalog data sets from the RESTORE processing. To restore the DB2 catalog, select data sets that are exclusively catalog data sets. The job stream that is generated must have SYSADM authority and must be run when DB2 is down. *Image Copy the catalog data sets before you run this job.*

Migrated or Error Display

Overview

!DB/DASD displays the Migrated or Dropped panel if both of the following conditions exist.

- The data space you specified to RESTORE has been migrated or dropped since the last extract
- You specified that !DB/DASD prompt you before recalling migrated data sets. See Chapter 15, “Defining Recall Options” on page 305 for more information.

If you specify that you want to be prompted before recalling migrated data sets, this panel appears once for each table space that has been dropped or migrated. If this panel occurs several times, it is an indication that your extract is not current and that you should run a new extract.

If you choose not to recall migrated data sets, !DB/DASD does not include the data sets in the RESTORE processing.

Migrated or dropped panel

This is the Migrated panel that appears when you set !DB/DASD to prompt you before migrating data sets.

```
DISPLAY DB2 SPACES -----   D B / D A S D - DBID=DB2C ----- Response required
Cmd ===>


   Dataset = AY55B2.DSNDBD.DR12JHBT.DDRTEST7.I0001.A001

       This dataset has been MIGRATED to DASD   since the last extract.
       You have requested to be prompted for the action to be taken.


     RECALL DATASET ==> N    Y / N


        ************************************************************
        *                                                          *
        *   Press ENTER to continue.                               *
        *                                                          *
        *              Press END to end the MOVE processing.       *
        *                                                          *
        ************************************************************
```

RESTORE Options

Introduction

The JCL generated for the RESTORE command is determined by options that you set. The RESTORE Options panel allows you to select which commands !DB/DASD includes in the JCL.

RESTORE Options panel

```
RESTORE OPTIONS ----------------- D B / D A S D - DBID=D31A --------------------
Cmd ===>                                                      99/12/14  09:12
                        R E S T O R E    O P T I O N S
               PROGRAM ===> ADRDSSU
       DB2 CMDS BEFORE ===> V         P  - Stop   U  - St UT
                                      V  = P & U  " " - None
        STOP AT COMMIT ===> Y         Y  - Yes    N - No (If P or V above)
       RECOVER LOGONLY ===> Y         Y  - Yes    N - No
        DB2 CMDS AFTER ===> Z         P  - Stop   R - St RO
                                      W  - St RW  Z = P & R  " " - None
      TAPE DEVICE NAME ===> TAPE MI  - Device Name for Tape Drive
              TAPE DSN ===>


                  Press PF23  to cancel RESTORE.
                  Press ENTER to continue.
```

Field definitions for RESTORE Options

PROGRAM Use this option to specify which program to use to dump the table spaces. ADRDSSU is the default.

> **Caution**
>
> If you use a restore utility other than ADRDSSU, verify that the parameters match the parameters in ADRDSSU. If they do not match, you need to edit the generated JCL.

DB2 CMDS BEFORE

Use this option to specify the DB2 command generated in a first step that precedes all the RESTORE steps. Valid values are

blank	No DB2 commands.
P	-STOP DATABASE commands are generated for each table space to be processed.
U	-START DATABASE ACCESS(UT) are generated for each table space to be processed. **UT** allows only DB2 utilities to process the table spaces.
V = P + U.	ACCESS(UT).

Field definitions for RESTORE Options (continued)

STOP AT COMMIT
Specify **Y** if you want to include all the changes to a database before commit time.

RECOVER LOG ONLY
Specify **Y** if you want to restore the DB2 log as well as the data set.

Specify **N** if you want to restore only the data set.

DB2 CMDS AFTER
Use this option to specify the DB2 commands generated in a last step that follows all the RESTORE steps. You can specify one of the following values:

blank	No DB2 Commands
P	-STOP DATABASE commands are generated for each table space to be processed.
R	-START DATABASE ACCESS(RO) (Read Only) are generated for each table space to be processed.
W	-START DATABASE ACCESS(RW) (Read and Write) are generated for each table space to be processed.
Z = P + R.	DATABASE ACCESS(RO).

TAPE DEVICE NAME
Specify the name of the tape device where the data set was dumped.

TAPE DSN Specify the name the data set was given when it was dumped.

Job Card Options

Overview

You may use your own job card from any library you name as a model for the JCL generation. Enter the member name and table space name of the model on this display. For more information about the model see Chapter 12, “Tailoring the Job Stream” on page 253.

Job Card Options panel

```
JOBCARD OPTIONS -------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>

                        J O B C A R D    O P T I O N S

         To include a JOB (and JES) statements in the generated Utility JCL,
         enter the names of the library and member.


 JOB card member name ===> JBCRDMDL


JOB card dataset name ===> DB2DASD.USERPDS

                           This library will be opened for READ only.
                           TSO naming conventions will be used.
                           Enclose the name in quotes if it does
                           not begin with your TSO Prefix.

    Press PF22 to back up to previous screen
    Press ENTER to continue.      Press PF15 to cancel Utility generate.
```

This is the last opportunity to go back and change any of the RESTORE options. When you press Enter on this panel, !DB/DASD generates the RESTORE job stream.

Process Member Menu

Overview

When !DB/DASD generates all of the JCL, it saves the JCL in a member in the User PDS. This menu allows you to submit, edit, delete or print the saved statements.

Process Member menu

```
PROCESS MEMBER ----------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>                                                        99/10/22  09:16


    UTILITY JCL statements have been saved in member STTD40Q

    Specify next action to be performed.


           Option ===>

                       1  SUBMIT         Submit the Job.
                       2  EDIT           Edit saved JCL statements.
                       3  DELETE         Delete saved JCL statements.
                       4  PRINT          Print the JCL statements member.
                       5  LOG            Copy the member to the LOG PDS.

                       6  DO LATER       Changes are saved, exit now.
                          or  PF15, END
```

Chapter 11. Exceptions in Your DB2 System

Introduction

This chapter provides instructions for identifying and managing exceptions in your DB2 system. The exceptions include migrated data sets, orphan data sets, and widow data sets.

Chapter contents

Overview of the Chapter 242
Introduction to Migrated Data Sets 243
Recalling a Migrated Data Set 244
Deleting a Migrated Data Set 245
Introduction to Orphan Data Sets 246
Deleting an Orphan Data Set 248
Introduction to Widow Data Sets 250
Dropping Widow Data Sets 252

Overview of the Chapter

Overview

This chapter contains instructions for using !DB/DASD to identify and handle exceptions in the DB2 system. The three types of data spaces which !DB/DASD treats as exceptions are:

- Migrated data sets
- Orphan data sets
- Widow data sets (*Error data sets)

If you are recalling or deleting migrated data sets, or dropping widow data sets, !DB/DASD data will not reflect the changes until you run the next extract.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then locate the page number of the units that you need for your task.

	Migrated Data Sets	Orphan Data Sets	Widow Data Sets	Recall Options
	p.243	p.246	p.250	p.305
Recalling migrated data sets	√			√
Deleting migrated data sets	√			
Deleting orphan data sets		√		
Dropping widow (error) data sets			√	

Introduction to Migrated Data Sets

Overview

This unit tells you how to

- display migrated data sets or RESTORE
- recall migrated data sets
- delete migrated data sets

See Chapter 15, "Defining Recall Options" on page 305 to learn how to set the option for !DB/DASD to prompt you when migrating data sets on a MOVE, DUMP, or RESTORE.

Background

Migrated data sets are DB2 table spaces that have been migrated to tape or secondary DASD. You can recall or delete migrated data sets with !DB/DASD.

Procedure to follow to display migrated data sets

Follow this procedure to display migrated data sets.

Step	Action
1	On the Display DB2 Volumes panel, type **S** in the Select field of MIGRAT volume.
2	Press Enter. **Result**: The system displays the Migrated Data Sets display.

Recalling a Migrated Data Set

Overview

This unit contains background about recalling a migrated data set. This unit also contains the procedure to follow to recalll migrated data sets.

Background

Recalling a migrated data set before moving it or performing any DB2 functions on it will save time and improve DB2 performance.

Procedure to follow to recall migrated data sets

Follow this procedure to recall migrated data sets.

Step	Action
1	Filter the Migrated Data Sets Display to the desired group of data spaces. For more information about filtering, see Chapter 5, “Filtering Object Lists” on page 87.
2	Type **HRECALL** on the command line.
3	Press Enter. **Result**: The system will generate DFHSM HRECALL statements and display the Process Member Menu. For more information on the Process Member Menu, see “Process Member Menu” on page 181.
4	Type **1** in the Option field.
5	Press Enter. **Result**: The system submits the HRECALL statements to DFHSM. !DB/DASD data will not reflect these recalls until you run the next extract.

Deleting a Migrated Data Set

Overview

This unit contains background about deleting a migrated data set and tells you how to delete a migrated data set.

Background

!DB/DASD can delete migrated data sets without first recalling them. This is an efficient way to recover data secondary storage space containing migrated data sets with obsolete data.

Procedure to follow to delete a migrated data set

Follow this procedure to delete migrated data sets.

Step	Action
1	Filter the Migrated Data Sets Display to the desired group of data spaces. For more information about filtering, see Chapter 5, "Filtering Object Lists" on page 87.
2	Type **HDELETE** on the command line.
3	Press Enter. **Result**: The system will generate DFHSM HDELETE statements and display the Process Member Menu. For more information on the Process Member Menu, see "Process Member Menu" on page 181.
4	Type **1** in the Option field.
5	Press Enter. **Result**: The system submits the HDELETE statements to DFHSM. After you run the next extract, !DB/DASD displays these data sets as widow data sets. For instructions on dropping widow data sets, see "Introduction to Widow Data Sets" on page 250.

Introduction to Orphan Data Sets

Overview

This unit contains background, prerequisites, and the procedure to follow to delete an orphan data set. It tells you how to access the Orphans panel and shows an example of the Orphans panel.

Background

Orphans are physical VSAM data sets that exist but have no corresponding DB2 objects in the DB2 catalog. The Orphans panel allows you to recover this wasted DASD space easily.

Prerequisites

To use the Orphans facility, you must meet the following prerequisites:

- You must have Select authority against the DB2 catalog
- DB2 must be running

Procedure to follow to access the Orphans panel

Follow these steps to access the Orphans panel from the !DB/DASD Primary Menu.

Step	Action
1	On the !DB/DASD Primary Menu, type **O** in the Option field.
2	Press Enter. **Result**: The system displays the Orphans panel.

Example of the Orphans panel

This is an example of the Orphans panel.

```
-----------------------------   D B / D A S D - DBID=DB2C -------------------
Cmd ===>

                              O R P H A N S


           VCAT Name  ===>          (Required)

      Data Base Name  ===>          (Optional)


  Press ENTER when done.  Press PF15 to cancel.

  Enter qualifiers above for dataset search.  AMS DELETEs will be
  generated for all datasets with the qualifiers which are found
  in the OS Catalog and NOT in the DB2 Catalog.
```

Deleting an Orphan Data Set

Overview

This unit tells you how to delete an orphan data set. This unit also contains a warning and the guidelines to follow when using the !DB/DASD Orphans faciltiy.

Prerequisites

Before using the information in this unit, review the unit "Introduction to Orphan Data Sets" on page 246.

Warning

Use this facility only if you have clear, enforced standards for the use of VCAT names.

!DB/DASD compares the list of DB2 data sets in the VSAM catalog (which lists data sets in *all* DB2 systems) with the DB2 catalog.

At least one valid table space must have the same VCAT as the table space data set VCAT for !DB/DASD to determine that the DB2 data set is an orphan.

!DB/DASD considers any data sets not found in the DB2 catalog (which lists all DB2 data sets in the *current* DB2 system) orphans.

!DB/DASD displays orphans that exist in the current DB2 extract and in the DB2 catalog.

Guidelines to follow when using the Orphans facility

If you cannot guarantee *unique VCAT names in each system,* **do not** use these values in the VCAT name field:

- *
- A VCAT name used in multiple DB2 systems

Procedure to follow to delete an orphan data set

Follow this procedure to delete an orphan data set.

Step	Action
1	In the VCAT Name field, type the name of the VCAT containing one or more orphan data sets you want to delete. You can mask the name with an asterisk. For example, if you enter **AA*** in the VCAT Name field, !DB/DASD searches for all data sets with a VCAT name beginning with the characters **AA**. If you enter ***** in the VCAT Name field, !DB/DASD searches for all orphan data sets in the system.
2	In the Data Base Name field, type the name of the data base containing one or more orphan data sets you want to delete. (This field is optional). ***Note:*** Do not use an asterisk (*) as a wildcard. This field must either be blank or fully qualified.
3	Press Enter. **Result**: The system generates AMS Delete statements for all orphan data sets which meet the name criteria on the Orphans panel. If the system finds an orphan data set whose VCAT name matches the name specified on the Orphans panel, but whose database name does not, the system generates AMS Delete statements as comments. The system displays the Process Member Menu. (For more information on the Process Member Menu, see “Process Member Menu” on page 181.)
4	If you want to delete the data sets whose VCAT name matches the name specified on the Orphans panel, but whose database name does not, use the Process Member Menu to edit the member and remove the comment markers before executing the member.
5	Type **1** in the Option field.
6	Press Enter. **Result**: The system executes the AMS Delete statements, deleting the orphan data sets.

Introduction to Widow Data Sets

Overview

This unit tells you how to access the Widows panel. This unit also contains background about the Widows facility and the procedure to follow to drop a widow data set.

Background

Widows are DB2 objects that exist in the DB2 catalog but have no corresponding VSAM data sets.

In the !DB/DASD displays, these data sets are shown with volser ***ERROR**.

The Widows panel allows you to drop these data sets from the DB2 catalog.

Procedure to follow to access the Widows panel

Follow these steps to access the Widows panel from the !DB/DASD Primary Menu.

Step	Action
1	On the !DB/DASD Primary Menu, type **W** in the Option field.
2	Press Enter. **Result**: The system displays the Widows panel.

Example of the Widows panel

This is an example of the Widows panel.

```
------------------------------   D B / D A S D - DBID=DB2C -----------------
Cmd ===>
                              W I D O W S

  Enter qualifiers below for dataset search.  Dummy datasets will
  be created for all DB2 generated datasets.  All widow datasets
  matching the qualifiers will be dropped.  Widow datasets
  are those datasets which no longer exist but have not been dropped
  from the DB2 Catalog.

           VCAT Name  ===>          (Required)

       Data Base Name  ===>          (Optional)


  When the DB2 DROPs are generated, COMMITs will be generated.

  Number of datasets processed between each COMMIT ===> 0
   (Enter 0 to COMMIT only after all DROPs are done.)

  Press ENTER when done.  Press PF15 to cancel.
```

Dropping Widow Data Sets

Overview

This unit tells you how to drop widow data sets.

Procedure to follow to drop widow data sets

Follow this procedure to drop a widow data set.

Step	Action
1	In the VCAT Name field, type the name of the VCAT containing the widow data set(s) you want to drop. You can mask the name with an asterisk. For example, if you enter **AA*** in the VCAT Name field, !DB/DASD searches for all data sets with a VCAT name beginning with the characters **AA**. If you enter * in the VCAT Name field, !DB/DASD searches for all orphan data sets in the system.
2	In the Data Base Name field, type the name of the data base containing the orphan data set(s) you want to delete. You can mask the name with an asterisk.
3	Type a value in the Number of Datasets Processed Between Each Commit field. This value determines how many data sets the system DROPs between each COMMIT. The default value is 0, which causes the system to DROP all the data sets before the COMMIT.
4	Press Enter. **Result**: The system generates DROP statements for all widow data sets which meet the name criteria on the Widows panel. The system displays the Process Member Menu.
5	Type **1** in the Option field.
6	Press Enter. **Result**: The system displays the Jobcard Options panel.
7	Press Enter. **Result**: The system executes the JCL statements that drop the widow data sets.

Chapter 12. Tailoring the Job Stream

Introduction

This chapter provides an introduction to tailoring the job stream. The chapter contains information on the variables in the model jobcard. This chapter also contains background about the model JCL statements, the guidelines to follow to edit the statements, and the format of the member that contains the statements.

Chapter contents

Overview of the Chapter 254
Variables in the Model Jobcard 255
Model Statements 256

Overview of the Chapter

Overview

The job streams !DB/DASD generates are based on model JCL statements which are kept in the User PDS in member JCLMODEL. You can edit this member to tailor the job streams to meet your specific requirements.

!DB/DASD requires that each of the sections be included, but you can change the JCL statements. The statements contain substitution variables. These variables begin with "&". !DB/DASD substitutes the appropriate values as it generates the job stream. Be sure to enter each sentence as a bullet item.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then locate the page number of the units that you need for your task.

	Jobcard Model	Model Statements
	p.255	p.256
Review information on the variables in the jobcard	√	
Review background about model statements, the format of the JCLMODEL member, and the guidelines to follow to edit the member.		√

Variables in the Model Jobcard

Overview

This unit contains information on the variables in the model jobcard.

Background

You can use your own jobcard from any library as a model for the JCL generation for !DB/DASD. The model jobcard is in the User PDS in member JBCRDMDL. You can use substitution in your jobcard.

Using variables in your jobcard

The model jobcard contains substitution variables. The system replaces the variables as it generates the job stream. The following chart contains the substitution variables.

Variable	Substituted Value
&USERID	Current USERID
&JC	Character that changes each time !DB/DASD generates a jobcard !DB/DASD uses this character when it generates multiple jobs so that each job has a different name.

Model Statements

Overview

This unit contains background about the model JCL statements and the guidelines to follow to edit these statements. It also contains information about the format of the JCLMODEL member and information about the sections of the member.

Background

The job streams generated for ALTER, MOVE, DUMP, RESTORE, the Widows utility, and the Orphans utility are based on the model JCL statements which are kept in the User PDS in member JCLMODEL. You can edit the JCLMODEL member in the User PDS to suit your needs.

Format of the JCLMODEL member

The PDS member JCLMODEL is divided into sections. The beginning of each section is marked by .xxx, the three character name of the section. Review the following list for a description of each section.

.AMS This section is used in both the MOVE and the Widow job streams in four instances:

1. Before the new table spaces are defined for copy.
2. After the copy to delete the original table space if the delete option is selected.
3. To rename the table spaces (The original table space is renamed changing .I0001 to .OLDDS, and the new table space is given the original table space name).
4. In the Widows utility, before table spaces are defined (If the Widow data set is managed by DB2, a dummy table space must be created before DB2 will allow the table space to be DROPped from the DB2 catalog).

.CDD This section is used in the MOVE job stream. It is used with the .ICP section immediately before the Image Copy statement. This section is repeated for each table space that will be Image Copied.

.CMD This section is used in the MOVE job stream for the Commands Before and Commands After.

Format of the JCLMODEL member (continued)

The following list completes the description of the sections of the JCLMODEL member.

.DFC This section defines linear data sets for user managed DB2 data sets.

.DFN This section is used in the MOVE job stream to define the table spaces for DSN1COPY or KTD1COPY. The DISP option for these data sets is OLD. For CLOSE=NO data sets, change this to SHR. For CLOSE=YES data sets, old should be used.

.DMP This section handles the DUMP facility.

.ICP This section is used in the MOVE job stream. It is used with the .CDD section before the Image Copy. Unlike the .CDD section, this section is not repeated for each table space. This section can be used for referback data sets. To write a set of Image Copies to the same tape, specify the tape DD statement in this section. In the repeating section, **.CDD,** specify a referback to the unit and volume of the tape DD statement.

.JES The new VSAM data sets are DEFINEd in the step before the copy step. Therefore, in the copy step, the SYSUT2 data set already exists. However, JES3 will not be able to find this data set during the setup processing. The .JES section is a step that allocates a dummy data set of the same name to satisfy the JES3 setup.

.RST This section handles the RESTORE facility.

.SQL This section is used in the Widows utility for the DROP statements and in the MOVE job stream for the ALTER statements.

.UTI This section is used in the MOVE job stream. It invokes the data set copy program.

.UT1 This section represents the COPY program in a MOVE when SYSUT2 is going to tape.

.UT2 This section represents the COPY program in a MOVE when SYSUT1 is coming from tape.

.WID This section is used in the Widows utility. Prior to DB2 2.2, if a data set is managed by DB2, DB2 requires that a physical data set exists before the table space can be DROPped from the DB2 catalog. This section defines these physical table spaces. The volume specified during the install will be used for the defines.

Guidelines to follow to edit the JCLMODEL member

Follow these guidelines to edit the JCLMODEL member.

- Do not move or delete the .xxx markers. !DB/DASD requires that each of the sections be included.
- Change only JCL statements.
- Use an asterisk (*) in the first column of the line to comment out a line.

Reminder about DEFINE statements

DEFINE statements allow three mutually exclusive options for determining the attributes of the new data sets. You can select one of the following options:

- linear
- non-indexed
- model (Model uses the attributes of the original data set in the definition of the new data set.)

Reminder about DELETE statements

If you use JES2, you can comment out the DELETE statements by placing an asterisk (*) in the first column at the beginning of the .DFN section and the entire .JES section.

Chapter 13. Options for Housekeeping and Administration

Introduction

This chapter contains information about the options !DB/DASD provides to support housekeeping and administration.

Chapter Contents

Background about Using the Housekeeping and Administration Options 260
Accessing the Administration Menu 262
Using the Profile Administration Options 264
Specifying !DB/Tools Global Configuration Information . . 266
Specifying !DB/Tools DB2 Configuration Information . . . 269
Specifying !DB/DASD Configuration Options 272
Using the Activity Log Panel 274
Displaying and Selecting Profiles 277
Updating an Existing Profile 279
Creating a Profile Using an Existing Profile 280
Erasing an Existing Profile 281
Understanding User Exits 282

Background about Using the Housekeeping and Administration Options

Overview

This unit provides information about the options !DB/DASD provides that permit you to administer your system.

Accessing the housekeeping and administration functions

!DB/DASD provides a series of panels to support your use of housekeeping and administrative functions. You access these panels by selecting functions on the Administrative Functions panel.

Making changes to housekeeping and adminstration functions

Follow these steps to change a housekeeping or administrative option:

Step	Action
1	Make desired modifications to a given panel by typing new information in a field or overtyping information already in the field.
2	Press Enter. **Result:** !DB/DASD checks your entry for validity and displays the new value.

Prerequisites for changing housekeeping and administrative options

You must have appropriate authorization to update !DB/DASD housekeeping options. Review the *!DB/Tools Installation and Customization Guide* for information about authorizations.

Organization of this chapter

The units in this chapter describe the panels that comprise the !DB/DASD housekeeping and administation options in the order in which the panels can be accessed from the Administrative Functions panel.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then locate the page number of the units that you need for your task.

	Administrative Functions	Profile Administration Menu	Global !DB/Tools Options	DB2 System Options	DASD Configuration Options	Activity Log	Profiles	User Exits
	p.262	p.264	p.266	p.269	p.272	p.274	p.277	p.282
Access the Administration Menu	√							
Access options from the Administration Menu	√							
Access and use the Profile Administration Menu		√						
Review the Global !DB/Tools options			√					
Review the DB2 System Options				√				
Review the !DB/DASD-Specific Options					√			
Review the Activities !DB/DASD Performed						√		
Review Existing Profiles							√	
Create or Delete Profiles							√	
Define or change authorizations								√

Accessing the Administration Menu

Overview

This unit provides information about accessing the Administration Menu and using the options it provides.

Accessing the Administration Menu

Follow these steps to access the Administration Menu for !DB/DASD.

Step	Action
1	On the !DB/DASD Primary Menu, type **H** in the Option field.
2	Press Enter. **Result**: !DB/DASD displays the Administration Menu.

Elements of the Administration Menu

This is !DB/DASD's Administration Menu.

```
ADMIN MENU------   D B / D A S D - DBID=DB31 ---------------------------------
CMD ===>

    OPTION ===>

          1    1  PROFILE DATA ADMINISTRATION
          2    2  DISPLAY THE ACTIVITY LOG OF THE LOG PDS
          3    3  DISPLAY AND MAINTAIN MOVE PROFILES
          4    4  DISPLAY AND MAINTAIN USER EXIT DATA

 THE LATEST EXTRACT WAS DONE ON 11/07/99 AT  15:32  5
```

Elements of the Administration Menu (continued)

1 Displays the Profile Administration panel on which you can select the various system, database, and product profiles you want to review or update

2 Displays the DASD activity log

3 Displays a listing of existing move profiles. Using these panels, you can review an existing profile, create a new profile, or delete an existing profile.

4 Displays a panel on which you can provide input for user exits in !DB/DASD.

5 Displays the date and time when the most recent catalog extract was performed

Using the Profile Administration Options

Overview

This unit describes the panels !DB/DASD provides that permit you to manage your system profiles.

Background about the Profile Administration panel

The Profile Administration panel provides three options. Options 0 and 1 permit you to provide configuration information for your !DB/Tools environment and DB2 environment, respectively. These panels are common to all of the !DB/Tools.

Accessing the Profile Administration panel

Follow these steps to access the Profile Administration panel:

Step	Action
1	On the Adminstration Menu, type **1** in the Option field.
2	Press Enter. **Result**: !DB/DASD displays the Profile Administration panel.

Elements of the Profile Administration panel

This is !DB/DASD's Profile Administration panel.

```
PROFILE ADMINISTRATION----------------------- DB/DASD    ENTER REQUIRED FIELD
Cmd ===>                                                       99/10/12  15:08


   Option ===>

            1         0  Global Profile Information
            2         1  DB2 Specific Information
            3         2  DASD Options Information
```

Elements of the Profile Administration panel (continued)

1 Displays the !DB/Tools Global Configuration Information panel on which you can specify configuration information common to all of the !DB/Tools

2 Displays the !DB/Tools DB2 Configuration Information panel on which you can specify configuration information for your DB2 subsystem that is common to all of the !DB/Tools

3 Displays the !DB/DASD Options Information panel on which you can specify configuration information specific to your !DB/DASD system

Specifying !DB/Tools Global Configuration Information

Overview

This unit describes the !DB/Tools Global Configuration Information panel.

Background about the !DB/Tools Global Configuration Information panel

The !DB/Tools Global Configuration Information panel displays the global !DB/Tools information for the current MVS system. You can enter new values by typing over the existing ones. The new values are written to the profile data set that is specified on the Housekeeping panels.

Access

Follow these steps to access the !DB/Tools Global Configuration Information panel.

Step	Action
1	On !DB/DASD's Profile Administration panel, type **0** in the Option field.
2	Press Enter. **Result:** !DB/DASD displays the !DB/Tools Global Configuration Information panel.

Elements of the !DB/Tools Global Configuration Information panel

This is the !DB/Tools Global Configuration Information panel.

```
 ---------------------------------- DB/Tools ----------------------------------
Cmd ===>

                  DB/Tools Global Configuration Information

CAUTION:  These are the names of your production DB/Tools data sets.
          Please be careful when changing them.

 1 CLIST  Data Set ===> TDKT.DBTOOLS.V500.CLIST
 2 CNTL   Data Set ===> TDKT.DBTOOLS.V500.CNTL
 3 LOAD   Data Set ===> TDKT.DBTOOLS.V500.LOAD
 4 DBRM   Data Set ===> TDKT.DBTOOLS.V500.DBRM
 5 MSGS   Data Set ===> TDKT.DBTOOLS.V500.MSGS
 6 PANELS Data Set ===> TDKT.DBTOOLS.V500.PANELS
 7 TABLES Data Set ===> TDKT.DBTOOLS.V500.CNTL
 8 SKELS  Data Set ===> TDKT.DBTOOLS.V500.SKELS
 9 UTIL   Data Set ===> TDKT.DBTOOLS.V500.UTIL

10 VIO Symbolic Name       ===> VIO
11 Temp Disk Symbolic Name ===> SYSDA
12 Max BLKSIZE for VIO     ===> 3200
13 SYSOUT Hold Class       ===> X
```

1 Name of the library containing the product CLISTs

2 Name of the library containing the !DB/Tools administrative control information

3 Name of the library containing the !DB/Tools LOAD modules

4 Name of the library containing the DBRMs required to BIND the product plans

5 Name of the data set containing the product messages

6 Name of the data set containing the product panels

7 Name of the data set containing the product command and data tables

8 Name of the data set containing the product skeletons

Elements of the !DB/Tools Global Configuration Information panel (continued)

9 Name of the data set containing the product utility profiles

10 Symbolic name for virtual I/O; specific for the current MVS system

11 Symbolic name for temporary disk files; specific to a given MVS system

12 Maximum block size to use when allocating VIO data sets. Specify 0 to use a !DB/DASD-determined block size.

13 Your installation's hold class. If not specified, class X is assumed.

Specifying !DB/Tools DB2 Configuration Information

Overview

This unit describes the !DB/Tools DB2 Configuration Information panel.

Background about the !DB/Tools DB2 Configuration Information panel

The !DB/Tools DB2 Configuration Information panel displays the !DB/Tools information for the extract ID. The extract ID is the basic unit of configuration.

Access

Follow these steps to access the !DB/Tools DB2 Configuration Information panel.

Step	Action
1	On !DB/DASD's Profile Administration panel, type **1** in the Option field.
2	Press Enter. **Result:** !DB/DASD displays the !DB/Tools Global Configuration Information panel.

Elements of the !DB/Tools DB2 Configuration Information panel

This is the !DB/Tools DB2 Configuration Information panel.

```
 ---------------------------------- DB/Tools ----------------------------------
Cmd ===>

                    DB/Tools DB2 Configuration Information

 1 Extract ID           ===> DB31           2 MVS ID            ===> SYSA
 3 Extract Description  ===> DB31 EXTRACT
 4 DB2 Subsystem ID     ===> DB31         5 DB2 Version         ===> 310
 6 DB2 Location Name    ===> DB31         7 DSNTIAUL Plan Name  ===> DSNTIB31
 8 Real Catalog Prefix  ===> SYSIBM       9 DSNTIAD  Plan Name  ===> DSNTIA31
10 Catalog Prefix       ===> SYSIBM      11 DSNZPARM Member Name ===> DSNZPARM
12 DB/Tools Database    ===> REG9645     13 DB/Tools Qualifier   ===> WDAVI
14 Collection Id Prefix ===> V500

15 DB2 DSNLOAD Data Set         ===> TDDB2.DB2310.SDSNLOAD
16 DB2 DSNEXIT Data Set         ===> TDDB231A.DB2310.DSNEXIT
17 DB2 RUNLIB  Data Set         ===> PP.DB2.V310.RUNLIB.LOAD
18 Data Set Containing DSNHDECP ===> TDDB231A.DB2310.DSNEXIT
19 Data Set Containing DSN1COPY ===> TDDB2.DB2310.SDSNLOAD
20 Data Set Containing DSNTIAUL ===> PP.DB2.V310.RUNLIB.LOAD
21 Data Set Containing DSNTIAD  ===> PP.DB2.V310.RUNLIB.LOAD
22 Data Set Containing DSNZPARM ===> TDDB231A.DB2310.DSNEXIT
```

1 Eight character field identifying a particular extract or set of extracts on a DB2 subsystem.

2 ID of the current MVS system. The ID is for local documentation only.

3 Optional description of the contents of the extract identified by the extract ID (**1**)

4 ID of the current DB2 subsystem

5 DB2 Version of the current DB2 subsystem

6 Location name of the local DB2 subsystem (used for DB2 V2.3 or higher)

7 Name of the DSNTIAUL plan

8 The prefix of the actual DB2 catalog tables if the prefix specified for Catalog Prefix is for a shadow catalog

9 Name of the DSNTIAD plan

Elements of the !DB/Tools DB2 Configuration Information panel (continued)

10 DB2 catalog prefix

11 Name of member that contains DSNZPARMs

12 Name of the DB2 database that contains the !DB/Tools objects

13 Name of the Authid to be used as the QUALIFIER fo the !DB/Tools tables (i.e., DSPSTATS and SPCSTATS).

14 Prefix for constructing called ID for packages

!DB/DASD concatenates the CATALOG PREFIX and the COLLECTION ID PREFIX to equal the COLLECTION.

15 Name of the data set that contains DSNLOAD. The !DB/Tools assume that the DB2 LOADLIB (DSNLOAD) is in your system LINKLIST. See the *!DB/Tools Installation and Customization Guide* chapter entitled "Before You Begin" for additional information.

16 Name of the DSNEXIT data set

17 Name of the DB2 RUNLIB data set

18 Name of the data set that contains DSNHDECP

19 Name of the data set that contains DSN1COPY

20 Name of the data set that contains DSNTIAUL

21 Name of the data set that contains DSNTIAD

22 Name of the data set that contains the DSNZPARM LOAD module

Specifying !DB/DASD Configuration Options

Overview

This unit describes the !DB/DASD Configuration Options panel.

Access

Follow these steps to access the !DB/DASD Configuration Information panel.

Step	Action
1	On !DB/DASD's Profile Administration panel, type **2** in the Option field.
2	Press Enter. **Result:** !DB/DASD displays the !DB/DASD Configuration Information panel.

Elements of the !DB/DASD Configuration Information panel

This is the !DB/DASD Configuration Information panel.

```
---------------  DB/Tools Profile Information -- Product-General --------------
Cmd ===>
                        DB/DASD CONFIGURATION INFORMATION

 1 Extract PLAN Name ===> S500X      Plan Name for DB2 Extract
 2 SQL PLAN Name     ===> S500R      Plan Name for Dynamic SQL
 3 System PDS        ===> TDKT.DBTOOLS.S500.DB31.DASD.SYSTEM
 4 User PDS          ===> TDKT.DBTOOLS.S500.DB31.DASD.USER
 5 Log PDS           ===> TDKT.DBTOOLS.S500.DB31.DASD.LOG
 6 Access Exit       ===> STD        Access Control Exit (Users to Databases)
 7 Options Exit      ===> STD        Exit name for this screen
 8 Extract Exit      ===> STD        Exit to authorize users to extract Catalog
 9 Space Read Exit   ===> STD        Exit to authorize users to read data spaces
10 Date Format       ===> 1          1 - mm/dd/yy   2 - dd/mm/yy   3 - yy/mm/dd
11 Return Exit       ===> N          y - return exits, n - Goes to primary menu
12 Online Lines/Page ===> 0          Online invoked print lines per page
13 Batch Lines/Page  ===> 55         Lines Per Page
14 Print Dest        ===>            Print output destination
15 Form Id           ===>            Print Form Id
16 Remote User Id    ===>            Remote User Id
```

1 Names the DB2 plan !DB/DASD uses to run the extract

2 Names the DB2 plan !DB/DASD uses for dynamic SQL access to DB2

Elements of the !DB/DASD Configuration Information panel (continued)

3 Names a !DB/DASD partitioned data set. Type a fully qualified name; do not enclose it in quotes.

4 Names the user partitioned data set. Type a fully qualified name; do not enclose it in quotes.

5 Names the log partitioned data set. Type a fully qualified name; do not enclose it in quotes.

6 Exit you can use to control user access to and authorize the access of users to databases

7 Exit you can use to control user access to this panel

8 Exit you can use to control user access to and authorize the access of users to the catalog extract

9 Exit you can use to control a user's read access to a space

10 The format in which you want to see the date expressed. This option overrides the system default.

11 Controls the use of the **RETURN** and **=X** ISPF commands and their associated function keys. When this option is set to **Y**, use of either of these commands causes you to exit !DB/DASD. When set to **N**, use of either of these commands returns you to the !DB/DASD Primary Menu.

12 Number of lines to be printed when you request a report during an online session

13 Number of lines to be printed when you request a report during a batch session

14 JES destination or printer ID to which output of a PRNT command is to be routed. The value can be any of those allowed by your installation for JES output.

15 Special form to use for PRNT command output. The value can be any of those allowed by your installation for JES output.

16 The ID to which print output is to be routed if the destination is a remote printer

Using the Activity Log Panel

Overview

This unit contains background and a description of the logging process. It also contains information on the display of information and the selects available on the panel.

Background

!DB/DASD saves a copy of executed statements and submitted jobs in the Log PDS. You can use the members of this PDS for auditing purposes since !DB/DASD records all functions that act on the DB2 system. A list of the Log PDS members is displayed as a !DB/DASD Housekeeping facility. You can browse, edit, and re-execute individual Log PDS members from within !DB/DASD.

Description of the process of logging

If you specify LOG on the Process Member panel, then !DB/DASD creates a log entry automatically each time it executes a function. The log member contains:

- For a DEFINE CLUSTER, the batch statements to define a VSAM linear data set
- Executed statements from the Widows and Orphans facilities
- Submitted job streams generated for MOVE, DUMP, and RESTORE
- Additional information that includes a list of all options selected for MOVE, DUMP, or RESTORE
- Diagnostic information about ABENDs; for functions of type ABEND, the type of the abend is shown in the RE-EXEC column.

Elements of the Activity Log Display panel

This is an example of the Activity Log Display panel. The panel displays one line for each Log PDS member.

```
LOG ACTIVITY LIST-------------   D B / D A S D - DBID=DB2C ---- MEMBER 1 OF 20
Cmd ===>                                                      Scroll ===> PAGE

Cmds:    FILT
Sels:    ? (Menu)   B Browse    E Edit    D Delete    P PRNT    X re-eXecute
-------------------------------------------------------------------------------
SEL  DATE --- TIME    FUNCTION   DB2    USERID    RE-EXEC   MEMBER
       1               2         3      4          5         6
---  --------------   --------   ----   -------   -------   --------
 _   06/17/99 10:05   RESTORE    DSN2   BJAKRMB   RCODE S   LG000023
 _   06/16/99 23:34   DUMP       DSN2   BJAKRMB   RCODE S   LG000022
 _   06/16/99 23:31   DUMP       DSN2   BJAKRMB   RCODE S   LG000021
 _   06/13/99 18:41   DUMP       DSN    BJAKRMB   RCODE S   LG000019
 _   06/13/99 18:31   MOVE       DSN    BJAKRMB   RCODE S   LG000016
 _   06/13/99 18:30   MOVE       DSN    BJAKRMB   RCODE S   LG000015
 _   06/13/99 18:28   MOVE       DSN    BJAKRMB   RCODE S   LG000014
 _   05/30/99 15:11   MOVE       DSN2   BJAKALS   RCODE S   LG000013
 _   05/29/99 18:49   MOVE       DSN2   BJAKRMB   RCODE S   LG000012
 _   05/29/99 18:45   DUMP       DSN2   BJAKRMB   RCODE S   LG000011
 _   05/29/99 17:06   DUMP       DSN2   BJAKRMB   RCODE S   LG000010
 _   05/29/99 16:42   DUMP       DSN2   BJAKRMB   RCODE S   LG000009
 _   05/29/99 16:17   MOVE       DSN2   BJAKRMB   RCODE S   LG000008
 _   05/29/99 15:10   MOVE       DSN2   BJAKALS   RCODE S   LG000007
 _   05/29/99 14:53   MOVE       DSN2   BJAKALS   RCODE S   LG000005
 _   05/29/99 14:42   MOVE       DSN2   BJAKALS   RCODE S   LG000004
 _   05/29/99 14:36   MOVE       DSN2   BJAKALS   RCODE S   LG000003
 _   05/29/99 14:25   MOVE       DSN2   BJAKALS   RCODE S   LG000002
 _   05/29/99 14:09   MOVE       DSN2   BJAKALS   RCODE S   LG000001
 ****************************** BOTTOM OF LIST ********************************
```

1 Date and time the function was executed.

2 Type of function executed.

3 Identifier of the DB2 system on which the function was performed.

4 TSO user who executed the function.

5 Code used to re-execute member.

6 Name of the Log PDS member to which the logging information was written.

Selects available on the Activity Log Display panel

The following selects are available on this panel:

B Browse the member.

D Delete the member.

E Edit a copy of the member and optionally re-execute it.

X Re-execute the action. If the RE-EXEC column contains an RCODE *x* value, you can re-execute the action. The *x* value indicates the contents of the member to be reexecuted:

If the value of *x* is...	Then the member contains...
S	JCL
R	SQL statements
D	DUMP statements

Displaying and Selecting Profiles

Overview

This unit contains information on displaying and selecting profiles used for move processing. It also includes information on changing, creating, and erasing profiles.

Background

Profiles are lists of volumes that are to be used during move processing.

Elements of the Volume Profiles panel

This is an example of the Volume Profiles panel.

```
VOLUME PROFILES ----------   D B / D A S D - DBID=DB2C ------ PROFILE 1 OF 14
Cmd ===>                                                    Scroll ===> PAGE

        Below is a list of all defined Utility Profiles.
        To create a new profile, select an existing profile and
        save it under a new name before exiting the next screen.
        Select (S) one in order to display or update the Profile.
        You may also erase entries with (E) if you were the creator.

SEL   NAME     CREATOR   LAST CHG
        1        2         3
---   ------   -------   --------
 _    ABCDEF   BIJKZMB   09/18/99
 _    AB1TST   BIJKZB1   09/17/99
 _    ARST1    BIJKZMB   11/13/99
 _    CLM      BIJKCLM   11/06/99
 _    DUMMY
 _    FERN     BIJKFC    11/07/99
 _    TEST1    BIJKAMB   10/08/99
 _    TODAY    BIJKAMB   10/12/99
```

1 Name assigned to this utility profile.

2 Creator of the profile.

3 Date on which the profile was created or last changed.

Displaying a profile from the list on the Volume Profiles panel

Follow these steps to display a profile from the Volume Profiles list panel.

Step	Action
1	On the Volume Profiles panel, type **S** in the Select field for the profile you want to display.
2	Press Enter. **Result**: !DB/DASD displays the Volumes in Profile panel for the profile you selected.

Elements of the Volumes in Profile panel

On the Volumes in Profile panel, the **MAX PCT** field specifies the percentage of the volume that is to be used. This percentage includes all the data sets on the volume, not just DB2 data sets. When this limit is exceeded, !DB/DASD uses the next volume in the profile.

```
VOLUMES IN PROFILE -------   D B / D A S D - DBID=DB2C -------- VOLUME 1 OF 2
Cmd ===>                                                    Scroll ===> PAGE
  Below is a list of all volumes in this profile.  They are ordered from
  left to right.  Use Selects (I) to insert a volume into the list or
  (M) to move a volume (B) before or (A) after another volume.  A (D)
  will delete a volume from the list.
  Use ABT to exit without saving changes.
  SAVE PROFILE AS ==>         Enter name here to save under a different name.

            MAX                 MAX                 MAX                 MAX
  SL  VOLSER PCT     SL  VOLSER PCT     SL  VOLSER PCT     SL  VOLSER PCT
  --- ------ ---     --- ------ ---     --- ------ ---     --- ------ ---
   _  7A8902  90 |    _  B9XN09  45 |
```

Selects available on the Volumes in Profile panel

The following selects are available on the Volumes in Profile panel:

I Insert a volume into the list.
M Move a volume.
B Insert a moved volume before this volume.
A Insert a moved volume after this volume.
D Delete a volume from the list.

Commands available on the Volume in Profile panel

The following command is available on the panel:

ABT (ABORT) Exit the display without saving changes.

Updating an Existing Profile

Overview

This unit contains information on selecting an existing profile from the Volume Profiles panel and the procedure to follow to update the profile.

Prerequisites for updating an existing profile

You must be the creator of the profile to change it.

Procedure to follow to update an existing profile

Follow these steps to select and update an existing profile.

Step	Action
1	On the Volume Profiles panel, type **S** in the Select field for the profile you want to change.
2	Press Enter. **Result**: !DB/DASD displays the Volumes in Profile panel for the profile you selected.
3	Make the changes.
4	Without entering a name in the SAVE PROFILE AS ===> field, type **END** on the command line or press the appropriate function key. **Result**: !DB/DASD displays the Volume Profiles panel.

Creating a Profile Using an Existing Profile

Overview

This unit contains information on selecting an existing profile from the Volume Profiles panel. It also contains information on using the existing profile to create a new profile.

Procedure to follow to create a profile using an existing profile

Follow these steps to use an existing profile to create a new profile.

Step	Action
1	On the Volumes Profile panel, type **S** in the Select field of the model profile.
2	Press Enter. **Result**: !DB/DASD displays the Volumes in Profile panel for the profile you selected.
3	Make the changes.
4	Type the name of the new profile in the SAVE PROFILE AS ===> field.
5	Type **END** on the command line or press the appropriate function key. **Result**: !DB/DASD saves the profile under the name you specified and displays the Volume Profiles panel.

Erasing an Existing Profile

Overview

This unit contains information on erasing an existing profile from the list of profiles.

Prerequisites for erasing a profile

You must be the creator of the profile in order to erase it.

Procedure to follow to erase an existing profile

Follow these steps to erase an existing profile.

Step	Action
1	On the Volume Profiles panel, type **E** in the Select field of the profile you want to erase.
2	Press Enter. **Result**: !DB/DASD erases the profile and displays the Volume Profiles list.

Understanding User Exits

Overview

This unit discusses the purpose for !DB/DASD user exits and how you can access set-up facilities for them.

Background about the !DB/DASD exits

The primary purpose of the !DB/DASD exits is to restrict access to objects or databases. These exits are set up for your site during installation. Modifying them requires high-level administrative authority. For information on how to modify the existing exits, see the *!DB/Tools Installation and Customization Guide.*

Accessing set-up facilities for user exits

Use the following procedures to access a set-up panel for the user exits.

Step	Action
1	On the Administration Menu, type **4** in the Option field.
2	Press Enter. **Result**: !DB/DASD displays the current user exit information. To edit the displayed information, simply type over it.

Chapter 14. Batch Utility

Introduction

This chapter provides background about the batch utility in !DB/DASD. It contains information on the MOVE and PRNT facilities. It also contains information on the commands available to select objects and the commands for batch operations.

Chapter contents

Overview of the Chapter 284
Introduction to the !DB/DASD Batch Utility 285
Build Batch Jobstream Panels 286
Commands Available to Select Objects 288
Introduction to the MOVE Facility 290
Introduction to the PRNT Facility 294
Commands for Batch Operations 295
PDSCOPY Command 296
PDSEDIT Command 298
PDSEXEC Command 299
PDSLIST Command 300
DD Statements for the Batch Utility 301

Overview of the Chapter

Overview

!DB/DASD provides a batch utility to complement its online facilities. The facilities supported by !DB/DASD in batch are MOVE and PRNT.

Before using one of the facilities, you must identify the objects on which the facility is to act. This is done through commands. This chapter describes the facilities and commands.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then locate the page number of the units that you need for your task.

	Introduction	**Selecting**	**MOVE Facility**	**PRNT Facility**	**Commands**
	p.285	p.288	p.290	p.294	p.295
Review an introduction to the batch utility	√				
Review the commands available to select objects		√			
Review the MOVE facility			√		
Review the PRNT facility				√	
Review the commands for batch operations					√

Introduction to the !DB/DASD Batch Utility

Overview

The batch utility compliments the !DB/DASD online facilities. This unit contains an overview of the batch procedures.

Procedure to follow

Follow these steps to access the !DB/DASD Build Batch Jobstream panel to build a job stream to run !DB/DASD in batch.

Step	Action
1	On the !DB/DASD Primary Menu, type **J** in the Option field.
2	Press Enter. **Result**: The system displays the Build Batch Jobstream panel. The panel allows you to specify filtering criteria as well as options for the MOVE command.
3	Type the values.
4	Press Enter. **Result**: The system displays the Process Member menu. The menu allows you to submit, edit, print, or delete the job stream. The job will be saved in the User PDS. It can then be copied to a library to a job scheduling system to run on a regular basis.

Additional information

Sample JCL for the !DB/DASD Batch Utility is in member **UTILITYD** in the USER library.

If you need additional information on filtering, see Chapter 5, “Filtering Object Lists” on page 87 and Chapter 6, “!DB/DASD Displays” on page 105.

If you need additional information on using MOVE options in batch, see the unit “Introduction to the MOVE Facility” on page 290. An example of a batch job is described in “Example 3–Setting Up a Batch Job” on page 214.

Build Batch Jobstream Panels

Overview

This unit describes the Build Batch Jobstream Panels.

Build Batch Jobstream Panel

!DB/DASD displays this panel when you type **J** on the Primary Menu.

```
BUILD BATCH JOBSTREAM----------   D B / D A S D - DBID=DB2C -----------------
Cmd ===>

  FILTERS FOR DATASETS:                 OPTIONS FOR JOBSTREAM:
        OP VALUE
  XTNTS             No. Extents         Cmds Before:  V      Cmds After:  Z
  ALLO              Trks Alloc          All cmds together:  Y
  USED              Trks Used           Delete Original:  Y
  USED%             % Used of Alloc     Copy Program:  KTD1COPY
  TYPE              (T=Tablespace,      Image Copy:  Y     All together:  Y
                     I=Indes name)      Devname:  SYSDA
                                        Devtyp:  D         D=Dasd, T=Tape
  DB =              Database name       Primary QTY:  USED2
  SP =              Table/Index name    Secondary QTY:  USED
  Pri Size Factor:  15                  Sec Size Factor:  15
  Exclude DB =                          All in one job:  Y      Y or Nnn
  Exclude SP =                          Volume or Profile:

  JOBCARD MEMBER=  JOBCARD
  JOBCARD LIBRARY=  'CANDLE.DBTOOLS.JCL'
  SUBMIT=  N  Y / N

    Press ENTER to continue.     Press PF15 to cancel batch job generate.
```

Build Batch Jobstream Panel (continued)

!DB/DASD displays this panel when you complete the first Build Batch Jobstream panel and press Enter.

```
BUILD BATCH JOBSTREAM----------   D B / D A S D - DBID=DB2C -----------------
Cmd ===>

  OPTIONS FOR DB2 VERSION 3

       STOP AT COMMIT:   Y          Stop Databases at Commit Time    (Y/N)
       ESA COMPRESSION:  Y          Turn on ESA Hardware Compression (Y/N)

  OPTIONS FOR TAPE MOVE

       COPY TO DEVICE:   D          Device type for MOVE   (D=DASD / T=TAPE)
       TAPE DEVICE NAME:            Device name for TAPE

  OPTIONS FOR RECALL

       RECALL FROM TAPE: Y          Recall Migrated datasets from Tape (Y/N)
       RECALL FROM DASD: Y          Recall Migrated datasets from Dasd (Y/N)

  Press PF22 to back up to previous screen.
  Press ENTER to continue.      Press PF15 to cancel batch job generate.
```

Commands Available to Select Objects

Overview

This unit contains information on the commands used to select objects, the command syntax, and filter statements.

Background

While jobs generated from the online session are meant to be run on a regular basis to keep your system in order, you may need to build your own batch jobs. The remainder of this chapter includes information on the commands used to select objects and explains the commands used to print reports in batch or generate MOVE job streams in batch.

Commands to use to select objects

There are seven commands which can be used to select objects in the batch utility. Valid commands are the following:

DB Databases

DS Data sets

MV Multi-volume data sets

SG Storage Groups

SU Summary Information

VC VCATS

VL Volumes

One of these commands must be used to start a section. Additional statements may follow that are exactly like screen commands, such as filter commands, PRNT, or MOVE statements. Use the End command statement to reset the current report identifier.

Command syntax

- The command can begin in any column.
- An "*" in column 1 indicates a comment line.
- Only columns 1-71 are scanned.
- The entire command must be on a single record. No continuations are allowed.
- Keywords must be separated by blanks.

Filter statements

Any number of Filter statements can be used to restrict and tailor the report. The Filter statements are exactly as described in Chapter 5, “Filtering Object Lists” on page 87. For example, to restrict the database report to those databases that begin with ABC and contain more than one table space, the following statements would be used:

DB Identify database report

DB=ABC* Restrict to databases beginning with ABC

DSETS>1 Restrict to databases that contain more than one table space

All Filter statements are valid input except FILT, which is used in the online session to display the Filter Panel. If this statement is included in the input stream, it will be ignored.

Introduction to the MOVE Facility

Overview

This unit contains information about the MOVE facility.

Background

The MOVE facility is used to move all of the data sets on the current report. This facility is explained in Chapter 7, “Moving Data Sets” on page 155.

Commands used with the MOVE facility

The following list contains the commands used with the MOVE facility, the command format, and the valid values. For an explanation of the values, see Chapter 7, “Moving Data Sets” on page 155, Chapter 9, “Dumping Data Sets” on page 217, and Chapter 10, “Restoring Data Sets” on page 229.

CA=ab Commands After Options. *a* =P, R, W, Z or blank. b=A or E. Option *a* is the type of Commands After, and option *b* determines the placement of the Commands After. If option *a* is blank for no commands, then the value for *b* is ignored. The CA command is not generated or included in the batch job stream.

CB=ab Commands Before Options. *a*=P, R, V, U or blank. *b*=A or E. Option *a* is the type of Commands Before, and option *b* determines the placement of the Commands Before. If option *a* is blank for no commands, then the value for *b* is ignored. The CB command is not generated or included in the batch job stream.

DL=a Delete Options. *a*=Y or N. This option determines if the original table spaces will be deleted or kept. Select **Y** or **D** to delete or **N** or **K** to keep the original table spaces.

DV=a Device. *a*=D or T. This option is used to specify the device type for Image Copies. Specify **D** for disk or **T** for tape. If **T** is selected, **TN=** can be used to specify the tape device name.

IC=ab Image Copy Options. *a*=Y or N. *b*=A or E. Option *a* determines if Image Copies will be generated, and option *b* determines the placement of the Image Copies. If option *a* is **N** for no Image Copies, then the value for *b* is ignored. The IC command is not generated or included in the batch job stream. is not required.

Commands used with the MOVE facility (continued)

JL=a Jobcard Member Library. *a* is the name of the library where the Jobcard Member is located. The fully qualified library name should be entered without quotes.

JM=a Jobcard Member. *a* is a PDS member name which contains the model jobcard.

PG=a Copy Program. *a*=DSN1COPY or KTD1COPY.

PQ=a Primary Quantity. *a*=ALLO, ALLO2, SAME, SAME2, USED or USED2. This option determines the size of the new data sets. If **ALLO2, SAME2,** or **USED2** is selected, the **SF=** command can be used to set the size factor.

SF=a Size Factor. *a* is a number between 1 and 99. This option determines the divisor for the size of the secondary quantity. The default is 1.

SQ=a Secondary Quantity. *a*=ALLO, PQTY, SAME or USED. This option determines the size of the new data sets. If **ALLO, PQTY,** or **USED** is selected, the **SF=** command can be used to set the size factor.

TN=a Tape Name. *a* is the name of the tape drive that will be used for Image Copies.

TV=a To Volume. *a* is the serial of the volume on which the new data sets are to be allocated. This command is used to move all of the data sets onto a single volume. This value may also be the name of a volume profile that is used for the MOVE processing.

XD=a Exclude Database. *a* is the name of a database. All data sets in this database will be excluded from the list of data sets that are to be moved. The database name may be masked.

XS=a Exclude Table Space. *a* is a space name. All from the list of data sets that are to be moved. The space name may be masked.

1J=a One Job Option. *a*=Y or N. Select **Y** to generate all JCL in one job. Select **N** to generate a separate job for each table space.

Background about the MOVE job stream

When generating the batch utility statements, !DB/DASD uses the NOEXEC command as a default command. If you want to submit the the statements, you must first edit the *userid*Q member by deleting the NOEXEC command and replacing it with the SUB command.

Printing and submitting the MOVE job stream

Once all of the options are set, you may perform one of two functions on the MOVE job stream:

PRNT Print the job stream

NOEXEC Do not submit the jobstream

SUB or END Submit the job

Only one of these functions may be selected since each one of them ends the MOVE processing. However, all options set once remain set for the duration of the Batch Utility execution. To print, then submit the job stream, do the filtering, use the **MOVE** command followed by all of the options, then **PRNT.** Repeat **MOVE,** then **SUB** to submit.

Example of the MOVE facility

The following example will move table space ABCDEF to volume 7E0151 using the commands described in this chapter.

```
DS
     SP=ABCDEF
     MOVE
          DL=N
          JL=TDDB.DBTOOLS.USERPDS
          JM=JOBCARDM
          PG=KTD1COPY
          PQ=1
          SQ=1
          TV=7E0151
          SUB
END
```

Example of the MOVE facility

This example will generate a job to move all dataspaces that have more than 15 extents to a volume in Profile XYZQ. The job stream will be copied to member (XTNTMOVE) in the library 'KEEP.DASD.JOBS'.

```
DS
     XTNTS>15
     MOVE
          DL=N
          JL=TDDB.DB2DASD.USERPDS
          JM=JOBCARDM
          PG=DSN1COPY
          PQ=ALLO2
          SQ=ALLO
          SF=15
          TV=XYZQ
          PRNT
          PDSCOPY TO= KEEP.DASD.JOBS(XTNTMOVE)
END
```

Example of a volume MOVE

This example generates a job to move all data spaces on a volume.

```
VL
     VOL=TSO006
     MOVE
          JL=TDDB.DB2DASD.USERPDS
          JM=JOBCARD
          PQ=SMME
          SQ=SMME
          SF=1
          IC=YES
          DV=D
          TN=SYSDA
          CB=VE
          CA=ZE
          DL=Y
          PG=KTD1COPY
          IJ=Y
          PRNT
          PDSCOPY TO= KEEP.DASD.JOBS(VOL1MOVE)
END
```

Introduction to the PRNT Facility

Overview

This unit contains information about the use of the PRNT command in batch.

Background

The PRNT command serves the same general purpose it serves online. However, it is an essential command in batch. Use the PRNT command to print one or more batch reports. You must specify **PRNT** in batch in order to receive your printed output. To use the PRNT command, you must code it in your batch JCL.

PRNT output

The PRNT Utility produces two reports:

- The SYSPRINT report

  This report is a summary of the input commands, any error messages, and a page index for the second report, written to REPORTS DD.

- The REPORTS DD report

  This report contains the output from all the MOVE and PRNT jobs.

  If a REPORTS DD statement is not included in your batch JCL, all output will be produced on SYSPRINT.

Commands for Batch Operations

Overview

This unit contains information about batch job commands. The commands are in alphabetical order by command name:

- PDSCOPY
- PDSEDIT
- PDSEXEC
- PDSLIST

Background about the commands for batch operations

These batch job commands are not created by !DB/DASD If you want to use them in your batch job, you must explicitly code them in your batch JCL following the SYSIN statement.

Command descriptions

The following units include a brief description of each command and show the command syntax. Some units also include examples that show report samples or usage.

Requirements for operands and parameters

Any operands that are listed with a batch command are required unless labeled as optional. Include required operands in your batch JCL statements. Optional parameters for a command are shown in brackets [ ].

PDSCOPY Command

Description

Use the PDSCOPY command to copy the generated JCL to a user-specified destination. This feature is useful for using a job-scheduling package instead of submitting the jobs as they are generated.

Use PDSCOPY after the batch facility has generated a member in the User PDS. The command must immediately follow the PRNT or SUB command in your JCL input.

Command Value	Operands and Parameters	Additional Information
PDSCOPY	FROM=*data_set_name(member_name)*	Use fully-qualified data set names without quotes. If the command is too long to fit on one line, type a comma at the end of the first line to indicate line continuation. More information about the use of the comman appears later in this unit. The default data set for both parameters is the User PDS. If you omit the FROM parameter, the newly created member (*userid*Q) becomes the default.
	TO=*data_set_name(member_name)*	
	[MOD]	This optional parameter causes !DB/DASD to concatenate the contents of the member specified by the FROM parameter to any contents already in the member specified by the TO parameter. If MOD is omitted, then the contents of the member specified by the FROM parameter replaces any existing contents of the member specified by the TO parameter.

Use of the comma as a continuation character

If a command is too long for a command line, you indicate that the line continues by using a comma in one or more of these positions:

- Before the word *FROM*
- Before the word *TO*

The comma can occur in any numeric position on the line when used as specified here.

PDSCOPY examples

These examples show the use of the PDSCOPY command. The examples also show where to position commas if the command is too long to fit on a single line.

This example subits a job to copy the contents of the user PDS member CORIU to data set TARGET.DATA.DEV(CORI). The example concatenates the contents of member CORIU to the existing contents of member CORI, as specified by the MOD parameter. The data set name is not specified on the FROM command since the user PDS is the default data set for the FROM command:

```
SUB
PDSCOPY FROM=(CORIU),
TO=TARGET.DATA.DEV(CORI) MOD
```

This example copies member USERIDQ from the !DB/DASD user PDS to member UTILGEN1 in the !DB/DASD user PDS:

```
PDSCOPY, FROM=(USERIDQ), TO=(UTILGEN1)
```

This example copies the member that was just generated into a different data set:

```
PDSCOPY, TO=TSTDS.TMP.PDS(CPYMBR)
```

This example copies the member that was just generated into a different data set and adds its contents to the end of the original member:

```
PDSCOPY, TO=TSTDS.TMP.PDS(CPYMBR) MOD
```

PDSEDIT Command

Description

Use the PDSEDIT command to invoke the ISPF Editor and an ISPF edit macro on a specified member.

Command Value	Operands and Parameters	Additional Information
PDSEDIT	*data_set_name(member_name)*	Use a fully-qualified data set name without quotes. The default data set is the User PDS. If the member name is omitted, the member that was just created becomes the default.
	MAC(macro_name)	Specify the name of an edit macro.

PDSEDIT example

```
PDSEDIT DSETNAME(MBRNAME) MAC(MACRONAM)
```

PDSEXEC Command

Description

Use the PDSEXEC command to execute the member that was just created. Use this command if you include the NOEXEC command in the batch job and follow it with the PDSEDIT command. The PDSEXEC command has no operands or parameters.

Example of using the PDSEXEC command

This example shows how you can use the PDSEXEC command to execute the member you just created.

```
DS
     XTNTS>10
     MOVE
          PQ=ALLO
          SQ=ALLO
          NOEXEC
          SUB
          PDSEDIT MAC(EDITMAC1)
          PDSEXEC
END
```

This will generate a job stream to move all data sets which are on more than 10 extents. The job stream will be edited using EDITMAC1 (a user-defined edit macro) and then the revised job stream will be submitted.

PDSLIST Command

Description

The PDSLIST command lists a PDS member.

Command Value	Operands and Parameters	Additional Information
PDSLIST	*data_set_name(member_name)*	Use a fully-qualified data set name without quotes. If the operand is omitted, the data set name defaults to the User PDS, and the member name defaults to the job stream that was just created.

PDSLIST example

```
PDSLIST DSETNAME(MBRNAME)
```

The data set name defaults to the User PDS and the member name defaults to the job stream that was just generated.

DD Statements for the Batch Utility

Overview

This unit discusses the DD statements that you provide for the batch utility.

Definitions for DD statements

The following chart lists the definitions for the DD statements.

DD Statement	Type	Function
DSDXPDS	Required	Refers to the Extract PDS
DSDXLPDS	Required	Refers to the Log PDS
DSDXOPDS	Required	Refers to the User PDS
REPORTS	Optional	Places the reports in this file rather than in SYSPRINT; the output file characteristics are: RECFM=FBA LRECL=133 (The SYSPRINT destination will contain a command input list, error messages, and a page directory of the reports on this file.)
SFXMLIB	Optional	Serves to find ISPF error messages that are issued from the common online and batch utility modules (Refers to the MSGS data set containing the messages members distributed with !DB/DASD.)

Definitions for DD statements (continued)

The following chart continues to list the definitions for DD statements.

DD Statement	Type	Function
SFXZPARM	Optional	Refers to the load library that contains the initialization parameter module (normally DSNZPARM+) for DB2. This module is loaded by !DB/DASD in order to obtain the VSAM Catalog name for the SYSIBM data sets, such as SYSDBASE. The !DB/DASD utility will function without the initialization parameter module, but none of the SYSIBM data sets will be physically accessible.
SYSERROR	Optional	Specifies an output file for diagnostic information; output file characteristics are: RECFM=FBA LRECL=133 (If an ABEND occurs in the utility, this file will contain any reports that were printed.)
SYSIN	Required	Contains input commands for the batch utility to read; file characteristics are: RECFM=FB LRECL=80 (KTDBUTIL, the batch utility program, is executed from the SYSIN stream.)
SYSPRINT	Required	Output file characteristics are: RECFM=FBA LRECL=133

Definitions for DD statements (continued)

The following chart completes the definitions for DD statements.

DD Statement	Type	Function
SYSPROC	Required	Refers to library containing the CLIST KTDDSUTL. RECFM=FBA LRECL=133
SYSTSIN	Required	Contains terminal input commands for the utility to read
SYSTSPRT	Required	Specifies the terminal output file
UTILCMDS	Required	Refers to the CNTL library containing the commands vocabulary for the utility

Chapter 15. Defining Recall Options

Introduction

This chapter provides information on accessing the Recall Option panel. It contains background information about the recall option and tells you how to set recall options for recalling migrated data sets.

Chapter contents

Overview of the Chapter 306
The Recall Option Panel 307
Changing the Values on the Recall Options Panel 308

Overview of the Chapter

Overview

This chapter tells you how to set the recall options for recalling migrated data sets.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then locate the page number of the units that you need for your task.

	Recall Options Panel	Description of Values
	p.307	p.308
Accessing the Recall Options Panel	√	
Changing the values on the Recall Options Panel	√	√

The Recall Option Panel

Overview

This unit tells you how to access the Recall Option panel, shows you what the Recall Option panel looks like, and tells you how to change the values on the panel.

Accessing the Recall Option panel

Follow these steps to access the Recall Option Panel from the !DB/DASD Primary Menu.

Step	Action
1	On the the !DB/DASD Primary Menu, type **R** in the Select Function field.
2	Press Enter. **Result:** The system displays the Recall Option panel.

The Recall Option panel

This is an example of the Recall Option panel.

```
RECALL OPTION------------------   D B / D A S D - DBID=DB2C -----------------
Cmd ===>
                   R E C A L L    O P T I O N

       Recall can severly impact processing time.  DB/DASD
       uses the information you enter on this panel to determine
       the action to take when it encounters data sets that
       have been Migrated.


             RECALL FROM TAPE ===> Y   (Y/N)

             RECALL FROM DASD ===> Y   (Y/N)

              PROMPT PER DSET ===> Y   (Y/N)  For above Migration
                                              Levels Marked Yes



     Press ENTER to continue.     Press PF15 to cancel Option.
```

Changing the Values on the Recall Options Panel

Overview

This unit contains information about the Recall Options panel, definitions for the fields on the panel, and information on changing the values.

Background

The recall options let you specify whether or not !DB/DASD prompts you when you want to perform a function on a data set that has been migrated.

Field definitions

The following list contains the definitions of the fields on the Recall Options panel.

Recall from tape Specify **Y** if you want to recall data sets migrated to tape.

Specify **N** if you do not want to recall data sets migrated to tape.

Recall from DASD Specify **Y** if you want to recall data sets migrated to dasd.

Specify **N** if you do not want to recall data sets migrated to dasd.

Prompt per DSET Specify **Y** if you want !DB/DASD to prompt you each time it encounters a data set that has been migrated.

Specify **N** if you do not want !DB/DASD to prompt you before recalling a migrated data set.

Changing the values for recall options

When you enter a value, !DB/DASD checks the value for validity and redisplay the panel showing the new value.

To save the modified options, press End.

To cancel the changes made without saving, type **CANCEL** on the command line and press Enter.

Chapter 16. Defining Clusters

Introduction

This chapter provides information on accessing the Define Cluster panel. It contains background information and tells you how to define VSAM linear data sets.

Chapter contents

Overview of the Chapter 310
The Define Cluster Panel 311
Changing the Values on the Define Cluster Panel 312

Overview of the Chapter

Overview

This chapter tells you how to define VSAM linear data sets. This facility is provided from the Define Cluster panel.

Determining units to use

Review the descriptions of tasks in the left column to locate the row for the task appropriate for you. Then locate the page number of the units that you need for your task.

	Define Cluster Panel	Description of Values
	p.311	p.312
Accessing the Define Cluster Panel	√	
Changing the values on the Define Options Panel	√	√

The Define Cluster Panel

Overview

This unit tells you how to access the Define Cluster panel and shows you what the Define Cluster panel looks like

Accessing the Define Cluster panel

Follow these steps to access the Define Cluster panel from the !DB/DASD Primary Menu.

Step	Action
1	On the the !DB/DASD Primary Menu, type **U** in the Option field.
2	Press Enter. **Result**: The system displays the Define Cluster panel.

Example of the !DB/DASD Define Cluster panel

This is an example of the Define Cluster panel.

```
DEFINE CLUSTER ----------------   D B / D A S D - DBID=DB2C -----------------
Cmd ===>
                          D E F I N E    C L U S T E R

               VCAT ===>              (VCAT name)
                 DB ===>              (Database name)
              SPACE ===>              (Space name)
               PART ===> 1            (Partition Number)
               PQTY ===> 0            (Primary allocation)
               SQTY ===> 0            (Secondary allocation)
         ALLOC UNITS ===>             (CYL, TRK, REC, KB, MB)

            VOLUME 1 ===>              2 ===>              3 ===>
                   4 ===>              5 ===>              6 ===>

    Press ENTER to continue.      Press PF15 to cancel DEFINE.
```

Changing the Values on the Define Cluster Panel

Overview

This unit contains information about the Define Cluster panel, definitions for the fields on the panel, and information on changing the values.

Background

Use this panel to define linear data sets for DB2 or any other VSAM data set.

Field definitions

The following list contains the definitions of the fields on the Define Cluster panel.

Note: The Define Cluster panel does not validate any of the values you enter.

VCAT VCAT name

DB Database name (8 characters)

SPACE Index or table space name (8 characters)

PART Partition (Default=1)

PQTY Primary quantity

SQTY Secondary quantity

ALLOC UNITS The unit of measure for allocating space (for example, tracks cylinders, megabytes)

VOLUME *x* The name of the volume where the linear data set is to reside

Changing the values for define cluster

When you enter a value, !DB/DASD checks the value for validity and redisplay the panel showing the new value.

To save the modified options, press End.

To cancel the changes made without saving, type **CANCEL** on the command line and press Enter.

Chapter 17. Problem Resolution

Introduction

The chapter contains an introduction to resources available and instructions for responding to error and problem messages and providing a diagnostic report to Candle Customer Support.

Chapter contents

Overview of the Chapter 314
Support for Resolution of Problems 315
Determining the Level of Your !DB/DASD System 316
Providing Information to Aid in Problem Diagnosis 317
Using the Automated Trace Facility 318

Overview of the Chapter

Organization of information in this chapter

The chapter provides an overview of how to resolve problems that can occur when using software. It includes the resources available, an explanation of the ABEND diagnostic report, and instructions on how to contact Candle Support Service if you need assistance in diagnosing the problem.

Organization of information and your needs

Review the chart to select information appropriate for the task you want to perform.

	Support	Aid in Diagnostics
	p.315	p.317
Review resources available to resolve problems	√	
Review the information you need to provide to Candle Customer Support for help to diagnose a problem		√

Support for Resolution of Problems

Overview

This unit provides an introduction to the primary sources of assistance for resolution of problems: online Help (including examples), and Candle Customer Support.

Online Help available to resolve problems

If an error or problem occurs, !DB/DASD provides an error message that is displayed in the upper right corner of the menu or panel. A number precedes the short text of error message. Type **HELP** on the command line, or press the appropriate function key, to display the long text for the message.

Example of online information available to resolve problems

The chart lists two examples of the levels of detail of online information available from !DB/DASD. The example is typical of the error messages that include instructions on how to recover from the error.

Initial Display When the Error Occurs	Display When You Use the HELP Command
Invalid select command.	Type ? in select field to display valid selects options.

Assistance available from Candle Customer Support

If the error message instructs you to call Candle Customer Support or if you encounter a problem requiring assistance, call Candle Customer Support. See “Introduction” on page 345 for contact information. Every effort will be made to resolve your problem immediately.

If Candle Customer Support asks you to provide a copy of your system PDS, see the unit “Providing Information to Aid in Problem Diagnosis” on page 317.

Determining the Level of Your !DB/DASD System

Overview

This unit provides information to assist you in determining the level of your !DB/DASD system.

Procedure to determine the maintenance level of your system

The maintenance level of your !DB/DASD system is displayed on the !DB/DASD Primary Menu. Follow these steps to determine the maintenance level from another !DB/DASD panel.

Step	Action
1	To obtain the maintenance level of the !DB/DASD system you are using, type **MAINT** on the command line of a !DB/DASD panel.
2	Press Enter. **Result:** !DB/DASD displays the maintenance level of the system you are using.

Procedure to determine the maintenance level of your !DB/Tools

Follow these steps to determine the maintenance level of all of the installed !DB/Tools

Step	Action
1	To obtain the maintenance level of every installed component of !DB/Tools, type **MAINT?** on the command line of a !DB/DASD panel.
2	Press Enter. **Result:** !DB/DASD displays the maintenance level of the !DB/Tools you have installed.

Providing Information to Aid in Problem Diagnosis

Providing a copy of the activity log

Before you call Candle Customer Support regarding a product ABEND, please print a copy of the activity log. Printing the activity log allows you to have on hand the information Candle Customer Support needs and speeds up the resolution of the problem. Usually, Candle Customer Support asks you to fax the hard copy of the activity log.

Follow these steps to print the activity log.

Step	Action
1	On the !DB/DASD Primary Menu, type **H** in the Option field.
2	Press Enter. **Result:** The system displays the Admin Menu.
3	On the Admin Menu, type **2** in the Select field. **Result:** The system displays the Log Activity List panel.
4	Move the cursor to the line with the ABEND whose log you want to print.
5	Type **P** in the Select field.
6	Press Enter. **Result:** The system displays a pop-up that allows you to specify print options.
7	Type the print options you want.
8	Press Enter. **Result:** The system processes the print request and prints the activity log at the destination you specified.

Using the Automated Trace Facility

Overview

This unit describes the automated trace facility and provides instructions for its use.

Background about the automated trace

A trace facility is provided that can capture information useful to Candle personnel in resolving problems. Snapshots of storage and register values are written to a file at strategic times during the execution of !DB/DASD

Note: !DB/DASD ATF is resource intensive. Use it only when working with Candle personnel to resolve a problem.

Prerequisite to using the automated trace facility in batch

In order to use the automated trace facility in batch, add the following DD statement to your batch JCL:

```
//KTCTRACE DD SYSOUT=*
```

Using the automated trace facility in batch

All DEBUG commands used in batch processing must be used within primary commands. This example opens KTCTRACE and turns on the trace facility.

```
PL      (Primary Command)
 DEBUGON
 PRNT
END     (Primary Command)
```

Tracing begins and continues until !DB/DASD encounters a DEBUGOFF command. All trace information is written to the trace data set.

Using the automated trace facility online

Follow these steps to use the automated trace facility.

Step	Action

1	Issue the command **DEBUGON** from the command line. Optionally include a limit counter on the number of program traces. For example:
	
	`CMD===> DEBUGON 100    (100 traces performed)`
	
	or
	
	`CMD===> DEBUGON        (default limit is 500)`
	
	Result: The system turns on the trace facility.

2	Tracing continues until: • The specified trace limit is reached, or • You enter the command **DEBUGOFF** on the command line
3	When the trace facility is turned off either through expiration of the trace limit or entry of **DEBUGOFF**, !DB/DASD writes trace information to the output class you have specified for the field SYSOUT Hold Class on Housekeeping's !DB/Tools Global Configuration Information panel.

Appendix A. Using the Dynamic SQL Facility in !DB/DASD

Introduction

This chapter provides information about accessing data with SQL from !DB/DASD. The chapter contains information on executing statements entered directly on the SQL Input panel, executing retrieved statements, and executing statements stored in a PDS member. It also includes information on testing SQL statements.

Chapter contents

Overview of the Chapter 322
Overview of the SQL Input Panel 324
Accessing the SQL Input Panel 326
Using Uppercase and Lowercase 327
Guidelines for SQL Statements Entered Directly 328
Executing Statements Entered Directly 329
Executing Retrieved Statements 330
Recovery from Errors 331
Keyboard Mapping and SQL Statements Stored in a PDS Member 332
Guidelines for SQL Statements Stored in a PDS Member . 333
Executing Statements Stored in a PDS Member 335
Testing SQL Statements within a Program 338
Interpreting the Report Displayed by !DB/DASD 340

Overview of the Chapter

Overview

This unit contains introductory information on using !DB/DASD to interactively input and execute SQL statements. It also contains information on selecting information to match your needs.

Background

In !DB/DASD, you can interactively input and execute SQL statements. Within !DB/DASD you can:

- Input and execute statements directly on the SQL Input panel
- Retrieve and execute a previously executed statement. !DB/DASD saves up to nine of the last successfully executed SQL statements you entered and displays them on the SQL input panel.
- Execute statements stored in members of the user PDS or of another PDS
- Test SQL statements in application programs

Organization of information in this chapter

This chapter provides introductory information on the resources for learning about topics in this section.

Organization of the chapter and your needs

Review the chart to select information appropriate for the task you want to perform. Then locate the page number of the units of information that you need for your task.

	Input Panel	Accessing	Upper/Lower Case	Direct Entry	Executing Entered Stmts.	Executing Retrieved Stmts.	Error Recovery	Alt. Code Pages	SQL in PDS Member	Executing Stored SQL	Testing SQL in Program	Interpreting Report
	p.324	p.326	p.327	p.328	p.329	p.330	p.331	p.332	p.333	p.335	p.338	p.340
Review background	√	√										
Access and exit the SQL Input panel		√										
Create and execute statements in the input panel	√	√	√	√	√		√					√
Retrieve and execute statements directly in the input panel	√	√	√	√		√	√					√
Create and execute statements saved to a PDS member	√	√	√					√	√	√		√
Test SQL statements in a program	√	√	√						√		√	

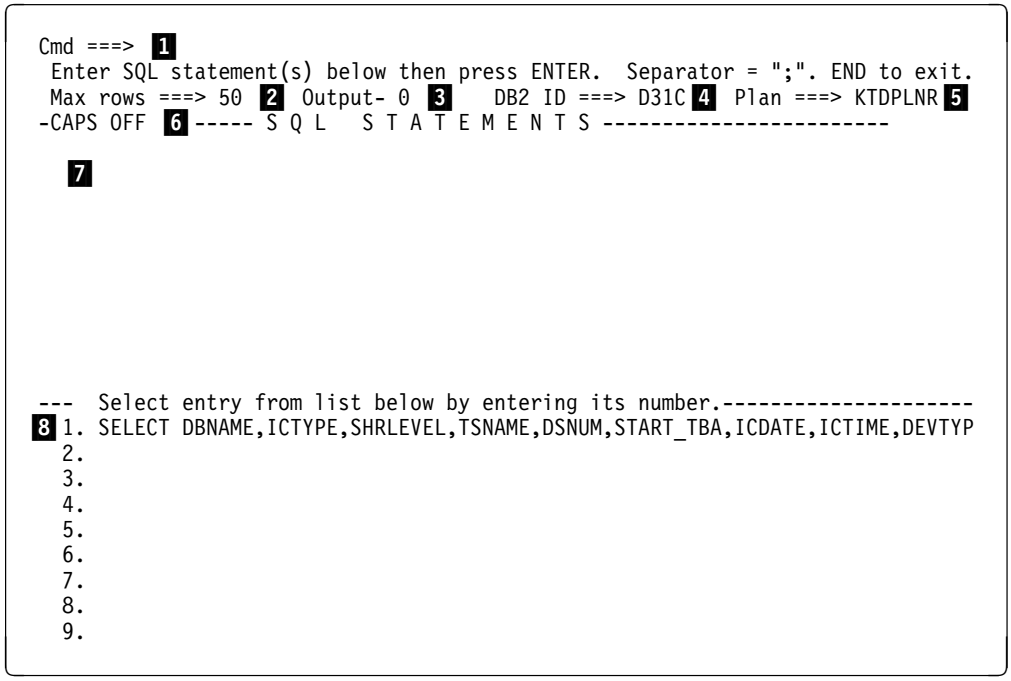
Overview of the SQL Input Panel

Overview

This unit contains information about the SQL Input panel.

Elements of the SQL Input panel

This illustration shows frequently used elements of the SQL Input panel.



Elements of the SQL Input panel (continued)

1 Location for entry of ISPF and !DB/DASD commands

2 Of the rows resulting from the execution of the SQL statement you entered, the number of rows !DB/DASD is to display. (You can change this value from its initial setting of 50 rows to any value within the program limit. The limit varies with the size of the rows.)

3 Actual number of rows displayed for the SQL statement you previously executed.

4 DB2 system ID (You can change this value if you want to access a different DB2 system.)

5 Name of the runtime plan for the statements that you will execute (The system initializes the value you enter to the plan established by your !DB/DASD installation.)

6 Area displaying the current setting for CAPS ON or CAPS OFF (if set)

7 Area where you are to enter SQL statements (or to enter the exclamation point required for some procedures)

8 Area which displays the last statement or statements that executed successfully. Up to nine statements can be displayed, with the most recently executed statement in position 1. If an error occurs, !DB/DASD displays error messages in this area of the panel.

Accessing the SQL Input Panel

Overview

This unit contains information about accessing the SQL input panel from the !DB/DASD product panels and from the Primary Menu. This unit also contains information about exiting the SQL Input panel.

Procedure for accessing the SQL Input panel

Follow these steps to access the SQL Input Panel from the !DB/DASD Primary Menu or from an object list panel.

Step	Action
1	On the !DB/DASD Primary Menu or any object list panel, type **SQL** on the command line.
2	Press Enter. **Result:** !DB/DASD displays a panel that allows you to type SQL statements and execute them.

Procedure for exiting

Follow this step to exit the SQL Input panel.

Step	Action
1	Type **END** on the command line and press Enter, or press the appropriate function key. **Result:** !DB/DASD returns you to the panel from which you accessed the SQL input panel.

Using Uppercase and Lowercase

Overview

This unit contains background about using uppercase and lowercase to enter values for SQL processing. This unit also contains information about using the CAPS command.

Background

If you want SQL to process your queries correctly, you must enter values in the appropriate case. If you enter all data in lowercase characters, problems can arise. In particular, you must be careful to enter any WHERE criteria for uppercase values in uppercase.

Commands to use

Review the following chart to understand the use of the CAPS command.

Task You Want to Perform	Command to Use
Reverse the current status—that is, change from upper to lower case or vice versa.	**CAPS** Note that when reversing the current status, you do not use an operand with the CAPS command.
Fold all entered characters to upper-case	**CAPS ON**
Maintain the case of data as it is entered. Thus, data entered as lower case remains in lower case. Data entered as upper case remains in upper case.	**CAPS OFF**

Guidelines for SQL Statements Entered Directly

Overview

This unit contains the guidelines to follow when entering SQL statements directly.

Guidelines for entry

Follow these guidelines.

- Type the statements continuously or type the statements one line at a time.
- To separate two statements on the same panel, type a semicolon (;) between statements.

Executing Statements Entered Directly

Overview

This unit contains the procedure to use to execute statements entered directly.

Procedure for executing statements entered directly

Follow these steps to execute statements entered directly.

Step	Action
1	In the first column position of the area for you to input statements, type the statement.
2	Press Enter. **Result:** !DB/DASD executes the statements.

Executing Retrieved Statements

Overview

This unit contains information on the procedure to use to execute retrieved statements. A retrieved statement is one that you have previously executed and that !DB/DASD displays on the lower portion of the Input panel.

Order of statements

When you successfully execute a statement, !DB/DASD places the statement next to the numeral 1 on the SQL Input panel. Previously executed statements move to a numeral one lower than their current position. The statement in position 9 is deleted from the list.

Procedure for executing retrieved statements

Follow these steps to execute a retrieved statement.

Step	Action
1	Type the number of the statement you want to execute in the first column of the input area.
2	Press Enter. **Result:** !DB/DASD displays the statement in the input area.
3	Optionally, edit the statement.
4	Press Enter. **Result:** !DB/DASD executes the statement.

Recovery from Errors

Overview

This unit contains information on the methods used to recover from errors.

Options for recovery from errors

When an error occurs, !DB/DASD responds with an error message. Use one of these actions to recover from the error.

Action You Can Perform	System Response
Type over the existing input statement and press Enter.	!DB/DASD re-executes the statement.
Blank out the intput statement and press Enter.	!DB/DASD redisplays the list of selectable statements.
Type **END** on the command line and press Enter or press the appropriate function key.	!DB/DASD exits the Dynamic SQL facility and returns to the panel from which you entered the SQL command.

Keyboard Mapping and SQL Statements Stored in a PDS Member

Overview

This unit provides information about variations in keyboard mapping that can affect operations on the SQL Input panel. This unit is applicable when you want to execute SQL stored in a PDS member.

The exclamation point (!) and the Dynamic SQL facility

The Dynamic SQL facility supports execution of SQL statements stored in a PDS member. To use this feature, you must type an exclamation point (!) on the SQL Input panel in column 1 of the input area. The hexadecimal code for the exclamation point is X'5A'. If you are using a terminal with, for example, a code page that supports your national language, you will need to determine the character in your code page that corresponds to X'5A' and use that character in place of the exclamation point.

Guidelines for SQL Statements Stored in a PDS Member

Overview

This unit contains information about the guidelines to follow when dynamically executing SQL statements stored in a PDS member.

Syntax of the statements stored in a PDS member

When you want to dynamically execute SQL statements stored in a PDS member, the statements should follow these syntax rules.

- Input members in SPUFI format.
- Input a maximum length of 8100 characters (not counting blanks at the beginning and end of a statement unless they are within a quoted string).
- Use any number of imbedded blanks in the statement.
- Do not input more than one select statement. (The output is unpredictable.)

Additional principles for quoted strings

You can use a quoted string as a comment or input for character fields; however, you must duplicate imbedded quotes. (!DB/DASD passes the entire string to DB2 exactly as you input it.)

Also, if you use a quoted string that is longer than a single input record, place a non-blank character in Column 72. Then, continue to type the string in the first column of the next line.

Errors resulting from statements stored in a PDS member

If the statement results in an error message, !DB/DASD issues a ROLLBACK.

Symbols required for statements in the PDS member

Review the following chart for the symbols to use for inputing SQL statements in the member of the PDS.

Task You Want to Perform	Aciton
Use a comment line.	Type **—** (two dashes) before the lines you do not want the system to read at any position. (Must be in columns 1 and 2.)
End the current statement and begin a comment line.	Type ***** (asterisk) at the beginning of the comment line. (Must be in column 1.)
End a statement.	Type **;** (semicolon) at the end of the statement.

Column positions

Review the following chart to determine the column position.

Column Position	Purpose
1-71	Data that !DB/DASD uses
72	The continuation column for statements with imbedded quoted strings
73-80	Sequence numbers

Executing Statements Stored in a PDS Member

Overview

This unit contains information about two ways to execute statements stored in a PDS member. You can execute statements in the !DB/DASD PDS or you can access a panel that allows you to specify a member in a different PDS. This unit contains instructions and background.

What PDSs can you use?

You can name any library in the PDS name field except a LOAD library. For example, you can specify any library that contains SQL, such as a CLIST library, a COBOL source library, a PL/1 source library, or a CNTL data set.

If the SQL statements you want to execute are stored in a member of the user PDS, you do not need to enter the fully qualified data set name. Instead, you can enter the member name only.

Procedure to execute a statement stored in the user PDS

Follow these steps to execute statements stored in a member of the user PDS.

Step	Action
1	On the SQL Input panel, type **!** (or the equivalent symbol) followed by the name of the member of the !DB/DASD user PDS. **Example:** If the name of the member is TEST1, then type **!TEST1** in the area of input.
2	Press Enter. **Result:** !DB/DASD reads and executes all statements.

Guidelines for using a PDS other than the user PDS

Follow these guidelines when naming the PDS to be used for the execution.

- The PDS must exist.
- Use standard TSO rules.
- If the data set name begins with your TSO prefix (not neccessarily your USERID), then you do not need to enter the name in quotes.
- If you do not use quotes, then !DB/DASD prefixes the name with your TSO prefix.

- If the name is in quotes, you must provide the fully qualified name.

Procedure to identify a PDS and member for processing

Follow these steps to select a PDS, other than the user PDS, for processing.

Step	Action
1	In the first column of the input area of the SQL Input panel, type **!**.
2	Press Enter. **Result:** !DB/DASD displays the Display PDS Members panel. That panel lists the fully qualified name of the user PDS and displays a blank field in which you can enter a member name.
3	To change the PDS name, overtype the displayed name following the guidelines above.
4	To identify the PDS member to be used for the execution, either: ● Enter the name of a PDS member in the Member field and press Enter, or ● Leave the Member name field blank and press Enter.
5	The results vary depending on your action in step 4. ● If you entered a name in the Member Name field, !DB/DASD reads and passes all statements in that member to DB2 for execution. ● If you did not type a member name, !DB/DASD displays a list of members for the PDS you identified. Take the action in Step 6.
6	Identify the member you want to proess by typing one of these selects next to its name on the list: ● Type **S** to execute a specific member. ● Type **D** to delete the member. ● Type **E** or **N** to edit the member. ● Type **P** to print the member.

Testing SQL Statements within a Program

Overview

This unit contains information about testing SQL statements you have imbedded in a program.

Using the ISPF Editor to edit a member

Follow these steps to access the ISPF Editor.

Step	Action
1	On the SQL Input panel, type **!** in the first column position of the area to input statements.
2	Press Enter. **Result:** !DB/DASD displays the panel that allows you to specify the name of the member of the !DB/DASD user PDS.
3	Type the name of the library you want to access.
4	Press Enter.
5	Type **E** in the select field for the name of the member you want to edit.
6	Press Enter. **Result:** !DB/DASD displays the contents of the member.

Procedure to edit and test statements

Follow these steps to use the ISPF Editor to specify a set of lines to be edited and tested.

Step	Action
1	Use the ISPF Editor to specify a set of lines you want to test. • A single line Type **Q** in the sequence number field of the line containing the statement you want to test. • Multiple lines Type **QQ** in the sequence number fields of the first and last lines of the totality of the statements you want to test.
2	Optionally, edit the statements.
3	To execute (test) the statements, type **KTDSQL** on the member's command line.
4	Press Enter. **Result:** The result varies depending on the result of the test. • If DB2 finds an error in the statement, !DB/DASD displays a panel with error messages. • If the statement is correct, !DB/DASD displays the results.
5	If the error message panel is displayed, press Enter to return to the ISPF Editor. You can edit and reexecute the statement or statements until no errors occur.

Interpreting the Report Displayed by !DB/DASD

Overview

This unit contains information on interpreting the report displayed by !DB/DASD.

Interpreting the output

!DB/DASD follows these conventions in displaying output from the SQL statements you execute.

Item Displayed	Source
Label for the column	Column name or label (if defined)
Field width of the column	The shortest of these values: • Field length • Length of label or of the name of the column • 36 characters (If a column consists of more than 36 characters, the system displays only 36.)

Displaying the output

Use these methods to display other columns of output that will not fit on the screen.

- Display the rows of data on the panel by scrolling.
- Display columns of data that may not be visible by shifting to the right or left. (!DB/DASD moves a full page at a time, but it always breaks the display on the boundary of a column and not in the middle of a column.)

Difference between statements executed directly and stored

Output from SQL statements that you have stored varies from statements that you have entered directly in the following two ways:

- Output from stored SQL is displayed only after the input statements have been processed.
- Output after the first 80,000 characters is ignored.

Appendix B. Data Set History

As well as the summary history information, !DB/DASD uses a DB2 table to keep a history of all DB2 data spaces. During each extract, !DB/DASD adds to this table. All of the data space information from the Data Sets display is kept in this table, along with the date and time of the extract. The table contains one row for each data space extract.

COL NAME	TYPE	LENGTH	DESCRIPTION
RUNTIME	Timestamp	10	Date and Time of Extract
DBNAME	Character	8	Database Name
SPNAME	Character	8	Data Space Name
PART#	Smallint	2	Partition Number
RELVL	Smallint	2	Relative Vol. of data set
DSTYP	Character	1	T(Tablesp) I(Indexsp)
ASSGN	Integer	4	Data Set Assigned Number
VCATNM	Character	8	VCAT Name
STGRP	Character	8	Storage Group Name
PSWD	Character	8	Data Set Password
STTYP	Character	1	I(Implicit) E(Explicit)
RSRVD	Character	1	Reserved Status
PQTY	Integer	4	Primary Quantity
SQTY	Integer	4	Secondary Quantity
#EXTS	Integer	4	Number of Extents
TLSPC	Integer	4	Tracks Allocated
USED	Integer	4	Tracks Used
VLSR1	Character	6	Volume Serial

Using the Data Set History Table to produce reports

This table can be used to produce reports using QMF or standard SQL. For example, to determine how a particular database has grown through time, use:

```
SELECT DBNAME, SPNAME, PART#, #EXTS, TLSPC, USED, VLSR1
FROM CDB.DSPHIST WHERE DBNAME= 'ABCDEF' AND SPNAME= 'IJKLMNO'
```

Appendix C. Candle Customer Support

Introduction

Candle Corporation offers a comprehensive maintenance and support plan to ensure you realize the greatest value possible from your Candle software investments. We have more than 200 technicians worldwide, committed to providing you with prompt resolutions to your support requests.

Customer Support hours of operation are from 5:30 A.M. to 5:00 P.M., Pacific Time. In the event of an after-hours or weekend emergency, Candle's computerized call management system ensures that a technician will return your call within one hour. For customers located outside of North America, after-hours and weekend support is provided by Candle Customer Support locations in the United States.

Electronic Support

Candle provides information and support services using

- Candle's home page at **www.candle.com**. You can use the Candle Web site to
  - open problem records
  - access maintenance information
  - order products or maintenance
  - access IBM compatibility information
  - download fix packs for distributed products
  - read news and alerts
  - scan a list of scheduled Candle education classes
- Candle Electronic Customer Support (CECS), an electronic customer support facility. You can access this facility through the IBM Global Network. You can use CECS to
  - open problem records
  - search our database for solutions to known problems
  - look for answers to commonly asked questions
  - read news and alerts
  - scan a list of scheduled Candle education classes

Both CECS and the Candle Web site are available 24 hours a day, 7 days per week.

Telephone Support

Our support network consists of product specialists who work with you to solve your problem.

Candle uses an online problem management system to log and track all support requests. Your request is immediately routed to the appropriate technical resource.

When you call to report a problem, please have the following information:

- your Candle personal ID (PID) number
- the release level of the Candle product
- the release level of IBM or other vendor software
- identifying information and dates of recently applied maintenance to your Candle product or IBM product
- a detailed description of the problem (including the error message) and the events preceding the problem
- a description of any unusual events that occurred before the problem

Customer Support Phone Numbers

	Telephone	Fax
North America	(800) 328-1811	
	(310) 535-3636	(310) 727-4204
Europe		
Belgium/Luxembourg	+32 (0) 3 270 95 60	+32 (0) 3 270 95 41
France	+33 (0) 1 53 61 60 60	+33 (0) 1 53 61 06 16
Germany/Switzerland/ Austria	+49 (0) 89 54 554 333	+49 (0) 89 54 554 170
Italy - Freephone	800 780992	
Netherlands	+31 (0) 30 600 35 50	+31 (0) 30 600 35 10
Scandinavia	+46 (0)8 444 5940	+46 (0)8 623 1855
U.K.	+44 (0)161 437 5224	+44 (0)161 437 5225
(Southern Europe, Middle East and South Africa Agents call U.K.)		
Asia Pacific - English Hub		+61 2 9954 1818
Australia	+61 2 8912 9898	
Hong Kong	800 908 457	
India	+61 2 8912 9898	
Indonesia	0018 03061 2061	
Malaysia	1800 803 459	
New Zealand	0800 449 596	
Philippines	1800 1612 0096	
Singapore	800 616 2075	
Thailand	0018 00612 1045	
Asia Pacific - Japanese Hub	+81 3 3595 7150	+81 3 3595 7110
Asia Pacific - Korean Hub	+82 2 552 8744	+82 2 552 8746
Asia Pacific - Mandarin Hub	+88 62 2739 3223	+88 62 2378 5993
Asia Pacific e-mail address: ap_support@candle.com		

When your local support office is unavailable, you can contact Candle's North America support center. If USADirect® service is available in your country, use the 800 telephone number. If USADirect service is not available, ask your international operator for assistance in calling Candle's local (310) number.

Incident Documentation

You may be asked to send incident documentation to the Candle Customer Support Center. On the outside of all packages you send, please write the incident number given to you by the Customer Support representative.

Send tapes containing the incident information to the following address, unless directed otherwise by your Customer Support representative:

Candle Customer Support
Candle Support Center, *Incident number*
201 North Douglas Street
El Segundo, CA 90245

Send all other relevant documentation, such as diskettes or paper documentation, to the address provided by your Customer Support representative.

Ensuring Your Satisfaction with Customer Support

Candle Customer Support is committed to achieving high customer satisfaction ratings in all areas. These include

- connecting you to a support representative promptly
- providing you with the appropriate fixes
- answering support questions
- filling your shipping orders
- supplying documentation

If you have a concern that has not been resolved to your satisfaction, you can open a complaint ticket. All tickets are logged and tracked to ensure responsiveness and closure. Using the ticket information, a manager will contact you promptly to resolve your problem.

Special Characters

!DB/Tools DB2 Configuration Information panel
!DB/Tools Global Configuration Information panel
? select 116, 132, 140, 145, 148
? select option 135
[special character 332
OF data setS
  on Display DB2 Volumes panel 114
  on Volume History display 127
OF DATA SETS field 114, 127
OF DSETS field 110
  on DB2DASD Summary History panel 110
OF EXTENTS
  on Display DB2 Volumes panel 114
  on Volume History display 127
OF EXTENTS field 114, 127
OF SPACES field 134, 147
  on Display DB2 Databases panel 134
  on VCAT display 147
OF TRACKS field 114, 127
OF TRACTS
  on Display DB2 Volumes panel 114
  on Volume History display 127
OF VOLS field 110
  on DB2DASD Summary History panel 110
OF XTS field 147
  on VCAT display 147
#EXTS column
  on data set history table 343
#S sort 148
#V sort 145
#VOLS field 144
  on Display Storage Groups panel 144
#X sort 148
#XTS field 130, 134
  on Display DB2 Databases panel 134
  on Display Multivol Dset panel 130
% ALLO USED field 110
  on DB2DASD Summary History panel 110
% DS USED field 130, 138, 150
  on Display DB2 Spaces panel 138
  on Display Multivol Dset panel 130
% USED field
  on Display DB2 Databases panel 134
% VOL ALLO field 114, 127
  Display DB2 Volumes panel 114
  Volume History display 127
% VOL USED field 114, 127
  Display DB2 Volumes panel 114
  Volume History display 127
%A sort 116
%DS USED field
  on SMS Info display 151
%DSET USED field 123
  on Migrated Display DB2 Spaces panel 123
%KTC command 50
%U sort 116, 131, 135, 140
%USED field 134

Numerics

1J (One Job Options) 291
1J=a command 291

A

A (insert after this volume) select 278
A select 145, 148
ABT (abort) command 278
ABT command
  Volumes In Profile Display 278
accessing !DB/DASD
  directly 50
  from OMEGAMON II for DB2 51
  prerequisites and guidelines 49
Activity Log 274, 275
  used by customer support 317
Activity Log panel 274
  fields 275
  selects 275
administration 259
Adobe portable document format 13
ADRDSSU 224
  DUMP 223
  RESTORE 235, 236

AL sort 116, 131, 135, 140, 148
AL/DSET filter 117, 125, 133, 135, 136, 141, 149
  on Display DB2 Databases panel 136
  on Display DB2 Spaces panel 141
  on Display DB2 Volumes panel 117
  on Display Multivol Dset panel 133
  on Display VCATS panel 149
  on Migrated Display DB2 Spaces panel 125
ALLO filter 117, 125, 133, 135, 136, 141, 149, 154
  on Display DB2 Databases panel 136
  on Display DB2 Spaces panel 141
  on Display DB2 Volumes panel 117
  on Display Multivol Dset panel 133
  on Display VCATS panel 149
  on Migrated Display DB2 Spaces panel 125
ALLO MB field 110
  on DB2DASD Summary History panel 110
ALLO TRACKS field 130, 134, 138, 150
  on Display DB2 Databases panel 134
  on Display DB2 Spaces panel 138
  on Display Multivol Dset panel 130
ALLO TRKS field 119, 123, 142, 147
  on Data Space Extents display 143
  on Migrated Display DB2 Spaces panel 123
  on SMS Info display 151
  on VCAT display 147
Allocated Tracks field
  on Data Space Extents display 143
ALLOCVL% filter
  on Display DB2 Volumes panel 117
Alter Options 182
ASSGN column
  on data set history table 343
asterisk in SQL statements 334
ATF 318
Automated Trace Facility 318
AVAIL TRACKS field 114, 127
  Display DB2 Volumes panel 114
  on Volume History display 127
Average number of extents field
  on Display DB2 Databases panel 134

B

B (browse) 275
B (insert before this volume) select 278
Batch Automated Trace Facility 318
batch jobs
  DD statements 301
batch jobstream 285, 286
batch trace facility 318
batch uitilities
  commands
  PDSEDIT 298
batch utilities
  Build Batch Jobstream 285, 286
  commands
    data sets 288
    databases 288
    multi-volume data sets 288
    storage groups 288
    summary information 288
    VCATS 288
    volumes 288
  DD statements 301, 302, 303
  panels 286
  PDSCOPY 296
  PDSEXEC 299
  PRNT faciltiy 294
  sample JCL 285
batch utility 284, 285
  After Options command (CA) 290
  batch utility JCL 292
    NOEXEC command 292
  Before Options command (CB) 290
  command syntax 289
  commands
    operands and parameters 295
    PDSCOPY command 296
    PDSEDIT command 298
    PDSEXEC command 299
    PDSLIST command 300
  DD statements 301
  Delete Options command (DL) 290
  Device Type command (DV) 290
  filter statements 289
  Image Copy command (IC) 290
  Jobcard Member Library command (JL) 290
  MOVE 290, 292
  MOVE example 292
  print job 292
  submit job 292

BookManager 17
browse (B) select 275
Build Batch Jobstream Panels 286

C

CAN command 115, 124, 131, 135, 139, 145, 148, 152
  on Display DB2 Databases panel 135
  on Display DB2 Spaces panel 139
  on Display DB2 Volumes panel 115
  on Display Multivol Dset panel 131
  on Display SMS Info panel 152
  on Display VCATS panel 148
  on Migrated Display DB2 Spaces panel 124
Candle Electronic Customer Support (CECS) 345
CAPS command 327
Catalog
  DUMPing 221
  MOVing 159
  RESTORing 233
CATALOG field 144
  on Display Storage Groups panel 144
CATALOG PREFIX field
  on the !DB/Tools DB2 Configuration Information panel 271
CB=ab command 290
CLIST Library
  on the !DB/Tools Global Configuration Information panel 267
CLISTS 72
CNTL Data Set field
  on the !DB/Tools Global Configuration Information panel 267
CNTL Library
  UTILCMDD 303
COLLECTION ID PREFIX field
  on the !DB/Tools DB2 Configuration Information panel 271
columns
  fields/columns 106
command syntax 289
commands
  %KTC 50
  ABT
    Volumes In Profile Display 278
  batch utility 288
    syntax 289
commands *(continued)*
  CAN
    on Display DB2 Databases panel 135
    on Display DB2 Spaces panel 139
    on Display DB2 Volumes panel 115
    on Display Multivol Dset panel 131
    on Display SMS Info panel 152
    on Display VCATS panel 148
    on Migrated Display DB2 Spaces panel 124
  DB2DASD Summary History panel 110
  DELETE
    on Migrated Display DB2 Spaces panel 124
  DO
    on Display DB2 Databases panel 135
    on Display DB2 Spaces panel 139
    on Display DB2 Volumes panel 115
    on Display Multivol Dset panel 131
    on Display SMS Info panel 152
    on Display Storage Groups panel 145
    on Display VCATS panel 148
    on Migrated Datasets panel 124
  DUMP
    on Display DB2 Databases panel 135
    on Display DB2 Spaces panel 139
    on Display DB2 Volumes panel 115
    on Display Multivol Dset panel 131
    on Display SMS Info panel 152
  FILT
    on Display DB2 Databases panel 135
    on Display DB2 Spaces panel 139
    on Display DB2 Volumes panel 115
    on Display Multivol Dset panel 131
    on Display SMS Info panel 152
    on Display Storage Groups panel 145
    on Display VCATS panel 148
    on Migrated Display DB2 Spaces panel 124
  HDELETE
    on Migrated Display DB2 Spaces panel 124
  HRECALL
    on Migrated Display DB2 Spaces panel 124
  LOCATE
    on Display DB2 Databases panel 135
    on Display DB2 Spaces panel 139
    on Display DB2 Volumes panel 115
    on Display Multivol Dset panel 131
    on Display SMS Info panel 152

commands *(continued)*
LOCATE *(continued)*
on Display Storage Groups panel 145
on Display VCATS panel 148
on Migrated Display DB2 Spaces panel 124
MOVE
on Display DB2 Databases panel 135
on Display DB2 Spaces panel 139
on Display DB2 Volumes panel 115
on Display Multivol Dset panel 131
on Display SMS Info panel 152
PDSLIST 300
PRNT
DB2DASD Summary History panel 110
on Display DB2 Databases panel 135
on Display DB2 Spaces panel 139
on Display DB2 Volumes panel 115
on Display Multivol Dset panel 131
on Display SMS Info panel 152
on Display Storage Groups panel 145
on Display VCATS panel 148
on Migrated Display DB2 Spaces panel 124
on Volume History display 127
on XTS on <volumeid.dataspace> panel 143
RESTORE
on Display DB2 Databases panel 135
on Display DB2 Spaces panel 139
on Display DB2 Volumes panel 115
on Display Multivol Dset panel 131
on Display SMS Info panel 152
SORT
on Display DB2 Databases panel 135
on Display DB2 Volumes panel 115
on Display SMS Info panel 152
on Display Storage Groups panel 145
on Display VCATS panel 148
SQL
CAPS 327
KTDSQL 339
Q and QQ 339
ROLLBACK 333
UNUSED
on Display DB2 Volumes panel 115
Commands Before Options 290
comments
using in SQL statements 334
compares
values 101
COMPRESS option 174
compression, specifying 174
conventions, documentation 14
Copy Program 173, 291
Copy Program command (PG) 291
COPY TO DEVICE field 173
CR sort 145
create a profile
using an existing profile 280
CREATOR field 144
on Display Storage Groups panel 144
cross-product switching
selecting 48
CT sort 145
customer support 317, 345

D

D (delete) 275
D (delete) select 278
D select 110, 116, 132, 136, 149, 152
DASD as target location, specifying 173
dashes in SQL statements 334
Data Det Type field
on Display DB2 Spaces panel 138
data display
display options 108
types 106, 107
data set command (DS) 288
DATA SET CONTAINING DSN1COPY field
on the !DB/Tools DB2 Configuration Information panel 271
DATA SET CONTAINING DSNHDECP field
on the !DB/Tools DB2 Configuration Information panel 271
DATA SET CONTAINING DSNTIAD field
on the !DB/Tools DB2 Configuration Information panel 271
DATA SET CONTAINING DSNTIAUL field
on the !DB/Tools DB2 Configuration Information panel 271
DATA SET CONTAINING DSNZPARMS field
on the !DB/Tools DB2 Configuration Information panel 271
data set history
from data sets display
how to access 343

Data set type field
on Display Multivol Dset panel 130
on Migrated Display DB2 Spaces panel 123
on SMS Info display 151
data sets
dumping groups of 220
migrated
display 243
recalling 244
moving groups of 158
number on volume 114, 127
Orphan
deleting 248, 249
restoring groups of 232
sort 166
table spaces 106
Widow 250
deleting 252
Data Space Extents 142
Data Space Name field
on SMS Info display 151
DATABASE field 134
on Display DB2 Databases panel 134
Database Name field
on Data Space Extents display 143
on Display DB2 Databases panel 134
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on Migrated Display DB2 Spaces panel 123
on Volume Extents display 119
databases
dumping 116
databases command (DB) 288
date
most recent that the table space was used 123
DATE field 110, 275
on DB2DASD Summary History panel 110
DAYS filter 125
on Migrated Display DB2 Spaces panel 125
DAYS UNUSED field 123
on Migrated Display DB2 Spaces panel 123
DAYSMIG filter 125, 133, 141
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Migrated Display DB2 Spaces panel 125
DB (databases) command 288
DB filter 125, 133, 135, 136, 141, 154
on Display DB2 Databases panel 136
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
DB filter *(continued)*
on Display SMS Info panel 154
on Migrated Display DB2 Spaces panel 125
DB sort 120, 131, 135, 140
DB2
when you must have active 49
DB2 Catalog
DUMPing 221, 233
MOVing 159
DB2 Commands 178
DB2 DSNEXIT DATA SET field
on the !DB/Tools DB2 Configuration Information panel 271
DB2 DSNLOAD DATA SET field
on the !DB/Tools DB2 Configuration Information panel 271
DB2 ID field 275
DB2 LOCATION NAME field
on the !DB/Tools DB2 Configuration Information panel 270
DB2 RUNLIB DATA SET field
on the !DB/Tools DB2 Configuration Information panel 271
DB2 SUBSYSTEM ID field
on the !DB/Tools DB2 Configuration Information panel 270
DB2 system ID 63
DB2 VERSION field
on the !DB/Tools DB2 Configuration Information panel 270
DB2 Volumes panel 113
DB2DASD History Detail panel 112
DB2DASD Summary History panel 109
commands 110
display detail 111
fields 110
select options 110
!DB/DASD
administration 259
and MAINT command 316
maintenance level 316
!DB/DASD panels
Help for 40
DBNAME column
on data set history table 343
DBNAME field 118, 123, 130, 138, 142, 150
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on Migrated Display DB2 Spaces panel 123
on SMS Info display 151

DBRM Libary field
on the !DB/Tools Global Configuration Information panel 267
!DB/Tools
and MAINT? command 316
maintenance level 316
!DB/Tools DATABASE field
on the !DB/Tools DB2 Configuration Information panel 271
!DB/Tools DB2 Configuration Information panel 269
!DB/Tools DB2 Configuration Information 269
KTBPHODB 269
!DB/Tools Global Configuration Information panel 266
!DB/Tools Global Configuration Information 266
DC filter 154
on Display SMS Info panel 154
DD statement
for batch 301
SYSIN
batch utility 302
DD statements
in !DB/DASD batch utility JCL 301
DSDXLPDS 301
DSDXPDS 301
DSDXUPDS 301
REPORTS 301
SFXMLIB 301
SFXZPARM 302
SYSERROR 302
SYSIN 302
SYSPRINT 302
SYSPROC 303
SYSTSIN 302
SYSTSPRT 302
UTILCMDS 303
DEBUGON/DEBUGOFF command 318
Define Cluster options 312
Define Cluster panel 311, 312
accessing
example of 311
from the primary menu 311
DEFINE statements 258
DELETE command 124
on Migrated Display DB2 Spaces panel 124
delete migrated data sets
procedure to follow 245
using the HDELETE command 245
DELETE Option 175, 226, 290
DELETE statements 258
delete(D) select 275
detail display
DB2DASD Summary History panel 111
DEV TYPE field
on Migrated Display DB2 Spaces panel 123
DEVC TYPE field 123
device location, specifying 173
device type, specifying 290
DFHSM 122
display a profile
Display DB2 Databases
commands 135
fields 134
select options 136
sorts 135
Display DB2 Databases panel 134
Display DB2 Spaces
commands 139
filters 117, 135
select options 135, 140
sorts 135, 140
Display DB2 Spaces panel 137
commands 138
fields 138
Display DB2 Volumes panel
commands 115
fields 114
select options 116
sorts 116
display migrated data sets 243
Display Mulitvol Dset panel
commands 131
sorts 131
Display Multivol Dset panel 129
fields 130
select options 132
Display SMS Info panel 150
commands 152
fields 150
select options 152
sorts 152
Display Storage Groups panel 144
commands 145
fields 144
filters 146

Display Storage Groups panel *(continued)*
select options 145
sorts 145
Display VCATS panel 147
commands 148
fields 147
select options 148
sorts 148
displays
Migrated Data Sets 122
Summary History 109
Volume History 126
volumes 113
DL=a command 290
DM field
Display DB2 Volumes panel 114
DO command 115, 124, 131, 135, 139, 145, 148, 152
on Display DB2 Databases panel 135
on Display DB2 Spaces panel 139
on Display DB2 Volumes panel 115
on Display Multivol Dset panel 131
on Display SMS Info panel 152
on Display Storage Groups panel 145
on Display VCATS panel 148
on Migrated Datasets panel 124
documentation conventions 14
documentation set 16
documentation, online 17
DS (data sets) command 288
DSDXLPDS 301
in !DB/DASD batch utility JCL 301
DSDXOPDS 301
DSDXPDS 301
in !DB/DASD batch utility JCL 301
DSDXUPDS
in !DB/DASD batch utility JCL 301
DSETS
on Display VCATS panel 149
DSETS field 117
DSETS filter 149
on Display DB2 Volumes panel 117
DSHIST 344
DSN1COPY 173
DSN1COPY Options 172
DSNTIAD PLAN NAME field
on the !DB/Tools DB2 Configuration Information panel 270
DSNTIAUL PLAN NAME field
on the !DB/Tools DB2 Configuration Information panel 270
DSNZPARM 302
DSNZPARMS MEMBER NAME field
on the !DB/Tools DB2 Configuration Information panel 271
DSTYP column
on data set history table 343
dump
table spaces 132, 140
VCAT data sets 149
DUMP command 135, 139, 152
on Display DB2 Databases panel 135
on Display DB2 Spaces panel 139
on Display DB2 Volumes panel 115
on Display Multivol Dset panel 131
on Display SMS Info panel 152
DUMP Options 223
DUMP Program 224
DUMPing
*ERROR data sets 221
groups of data sets 220
individual data sets 220
migrated data sets 221
the DB2 Catalog 221
widows 221
DV=a command 290
dynamic SQL
PDSs to use
Dynamic SQL Facility
See SQL

E

E (edit) command 275
electronic customer support 345
END ADR field 142
on Data Space Extents display 143
on Volume Extents display 119
END EDR field 118
End key 69
ending a session 59
Ending Address field
on Data Space Extents display 143
on Volume Extents display 119
erase a profile 281

*ERROR data sets 114, 127, 164, 222, 234
DUMPing 221
MOVing 159
RESTORing 233
*ERROR DSETS field 110
on DB2DASD Summary History panel 110
errors
recovering from SQL 331
example
MOVE facility 292, 293
PDSCOPY 296
PDSEDIT 298
PDSEXEC 299
PDSLIST 300
exclamation point
used in SQL 332
Exclude 170
Exclude Database command (XD) 291
Exclude Table Space command (XS) 291
exiting !DB/DASD 53
exits, user 282
Extent Number field
on Data Space Extents display 143
on Volume Extents display 119
extents
filter
on Display DB2 Volumes panel 117
number on volume 114, 127
number used on volume filter 117
on Display VCATS panel 149
EXTENTS field 117
EXTENTS filter 125, 133, 135, 136, 141, 149
on Display DB2 Databases panel 136
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Migrated Display DB2 Spaces panel 125
extents, listing on volume 116
EXTRACT 34
for !DB/DASD displays 106
summary information for
on History Detail 112
Extract Description field
on the !DB/Tools DB2 Configuration Information panel 270
extract for !DB/DASD 49
EXTRACT ID field
on the !DB/Tools DB2 Configuration Information panel 270
extract PDS 36

F

features
changes 19
new 19
fields
CATALOG PREFIX
on the !DB/Tools DB2 Configuration Information panel 271
CLIST Library 267
on the !DB/Tools Global Configuration Information panel 267
CNTL Data Set 267
on the !DB/Tools Global Configuration Information panel 267
COLLECTION ID PREFIX
on the !DB/Tools DB2 Configuration Information panel 271
DATA SET CONTAINING DSN1COPY
on the !DB/Tools DB2 Configuration Information panel 271
DATA SET CONTAINING DSNHDECP
on the !DB/Tools DB2 Configuration Information panel 271
DATA SET CONTAINING DSNTIAD
on the !DB/Tools DB2 Configuration Information panel 271
DATA SET CONTAINING DSNTIAUL
on the !DB/Tools DB2 Configuration Information panel 271
DATA SET CONTAINING DSNZPARMS
on the !DB/Tools DB2 Configuration Information panel 271
DB2 DSNEXIT DATA SET
on the !DB/Tools DB2 Configuration Information panel 271
DB2 DSNLOAD DATA SET
on the !DB/Tools DB2 Configuration Information panel 271
DB2 LOCATION NAME
on the !DB/Tools DB2 Configuration Information panel 270
DB2 RUNLIB DATA SET
on the !DB/Tools DB2 Configuration Information panel 271
DB2 SUBSYSTEM ID
on the !DB/Tools DB2 Configuration Information panel 270

fields *(continued)*
DB2 VERSION
on the !DB/Tools DB2 Configuration Information panel 270
DBRM Library 267
on the !DB/Tools Global Configuration Information panel 267
!DB/Tools DATABASE
on the !DB/Tools DB2 Configuration Information panel 271
DSNTIAD PLAN NAME
on the !DB/Tools DB2 Configuration Information panel 270
DSNTIAUL PLAN NAME
on the !DB/Tools DB2 Configuration Information panel 270
DSNZPARMS MEMBER NAME
on the !DB/Tools DB2 Configuration Information panel 271
Extract Description
on the !DB/Tools DB2 Configuration Information panel 270
EXTRACT ID
on the !DB/Tools DB2 Configuration Information panel 270
HIGH LEVEL QUALIFIER#2 267
on the !DB/Tools Global Configuration Information panel 267
LOAD Library 267
on the !DB/Tools Global Configuration Information panel 267
MAX BLKSIZE for VIO 268
on the !DB/Tools Global Configuration Information panel 268
MAX PCT 278
MSGS Data Set 267
on the !DB/Tools Global Configuration Information panel 267
MVS ID
on the !DB/Tools DB2 Configuration Information panel 270
on the !DB/Tools DB2 Configuration Information panel 271
REAL CATALOG PREFIX
on the !DB/Tools DB2 Configuration Information panel 270
SKELS DATA SET 267
on the !DB/Tools Global Configuration Information panel 267
SYSOUT HOLD CLASS 268
on the !DB/Tools Global Configuration Information panel 268
fields *(continued)*
TABLES DATA SET 267
on the !DB/Tools Global Configuration Information panel 267
TEMP DISK SYMBOLIC NAME 268
on the !DB/Tools Global Configuration Information panel 268
UTIL DATA SET 268
on the !DB/Tools Global Configuration Information panel 268
VIO SYSMBOLIC NAME 268
on the !DB/Tools Global Configuration Information panel 268
fields/columns
OF data setS
on Display DB2 Volumes panel 114
on Volume History display 127
OF DSETS
on DB2DASD Summary History panel 110
OF EXTENTS
on Display DB2 Volumes panel 114
on Volume History display 127
OF SPACES
on Display DB2 Databases panel 134
on VCAT display 147
OF TRACTS
on Display DB2 Volumes panel 114
on Volume History display 127
OF VOLS
on DB2DASD Summary History panel 110
OF XTS
on VCAT display 147
#EXTS
on data set history table 343
#VOLS
on Display Storage Groups panel 144
#XTS
on Display DB2 Databases panel 134
on Display Multivol Dset panel 130
% ALLO USED
on DB2DASD Summary History panel 110
% DS USED
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
% USED
on Display DB2 Databases panel 134
% VOL ALLO
on Display DB2 Volumes panel 114
on Volume History display 127
% VOL USED
on Display DB2 Volumes panel 114

fields/columns *(continued)*
% VOL USED *(continued)*
on Volume History display 127
%DEVC TYPE
on Migrated Display DB2 Spaces panel 123
%DS USED
on SMS Info display 151
%DSET USED
on Migrated Display DB2 Spaces panel 123
ALLO MB
on DB2DASD Summary History panel 110
ALLO TRACKS
on Display DB2 Databases panel 134
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
ALLO TRKS
on Data Space Extents display 143
on Migrated Display DB2 Spaces panel 123
on SMS Info display 151
on VCAT display 147
ASSGN
on data set history table 343
AVAIL TRACKS
on Display DB2 Volumes panel 114
on Volume History display 127
Catalog
on Display Storage Groups panel 144
CREATOR
on Display Storage Groups panel 144
DATE
on DB2DASD Summary History panel 110
DAYS UNUSED
on Migrated Display DB2 Spaces panel 123
DB2DASD Summary History panel 110
DBNAME
on data set history table 343
on Display DB2 Databases panel 134
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on Migrated Display DB2 Spaces panel 123
on SMS Info display 151
DM
on Display DB2 Volumes panel 114
DSTYP
on data set history table 343
fields/columns *(continued)*
END ADR
on Data Space Extents display 143
on Volume Extents display 119
*ERROR DSETS
on DB2DASD Summary History panel 110
GROUP
on Display Storage Groups panel 144
IX
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on SMS Info display 151
LAST REF DATE
on Migrated Display DB2 Spaces panel 123
MGMT CLASS
on SMS Info display 151
MIGRAT DSETS
on DB2DASD Summary History panel 110
NO. #XTS
on Display DB2 Spaces panel 138
NO. XTS
on SMS Info display 151
PART#
on data set history table 343
PQTY
on data set history table 343
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on Migrated Display DB2 Spaces panel 123
PSWD
on data set history table 343
PT
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on SMS Info display 151
RELVL
on data set history table 343
RSRVD
on data set history table 343
RUNTIME
on data set history table 343
SBNAME
on data set history table 343
SPACE
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on Migrated Display DB2 Spaces panel 123
on SMS Info display 151

fields/columns *(continued)*
SQTY
on data set history table 343
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on Migrated Display DB2 Spaces panel 123
STGRP
on data set history table 343
STOR CLASS
on SMS Info display 151
STRT ADR
on Data Space Extents display 143
on Volume Extents display 119
STTYP
on data set history table 343
TIME
on DB2DASD Summary History panel 110
TLSPC
on data set history table 343
TYPE
on Migrated Display DB2 Spaces panel 123
USED
on data set history table 343
USED MB
on DB2DASD Summary History panel 110
USED TRACKS
on Display DB2 Databases panel 134
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
USED TRACTS
on Display DB2 Volumes panel 114
on Volume History display 127
USED TRKS
on Data Space Extents display 143
on VCAT display 147
on Volume Extents display 119
VCAT
on VCAT display 147
VCATNM
on data set history table 343
VLSR1
on data set history table 343
VOLSER
on Display DB2 Spaces panel 138
on Display DB2 Volumes panel 114
on Display Multivol Dset panel 130
on SMS Info display 151
on Volume History display 127
fields/columns *(continued)*
VOLUME
on Display Storage Groups panel 144
XT#
on Data Space Extents display 143
on Volume Extents display 119
XTS/DSET
on DB2DASD Summary History panel 110
on Display DB2 Databases panel 134
figures
DB2DASD Summary History panel 109
Display DB2 Databases 134
Display DB2 Spaces panel 137
Display DB2 Volumes 113
Display Display Storage Groups panel 144
Display Multivol Dset panel 129
Display SMS Info 150
Filter Menu 94
History Detail display 112
Migrated Datasets display 122
VCAT Display 147
Volume History display 126
Volume Profile Panel - List of Utility Profiles 277
Volumes In Profile Panel 278
VTOC display 120
XTS on <volumeid.dataspace> 142
XTS on Display Extents panel 118
FILT 94
FILT command 135, 139, 152
on Display DB2 Databases panel 135
on Display DB2 Spaces panel 139
on Display DB2 Volumes panel 115
on Display Multivol Dset panel 131
on Display SMS Info panel 152
on Display Storage Groups panel 145
on Display VCATS panel 148
on Migrated Display DB2 Spaces panel 124
filter statements 289
batch utility 289
filters 87
AL/DSET
on Display DB2 Databases panel 136
on Display DB2 Spaces panel 141
on Display DB2 Volumes panel 117
on Display Multivol Dset panel 133
on Display VCATS panel 149
on Migrated Display DB2 Spaces panel 125
ALLO
on Display DB2 Databases panel 136

filters *(continued)*
ALLO *(continued)*
on Display DB2 Spaces panel 141
on Display DB2 Volumes panel 117
on Display Multivol Dset panel 133
on Display VCATS panel 149
on Migrated Display DB2 Spaces panel 125
allocated tracks on volume percent
on Display DB2 Volumes panel 117
compares
values 101
DAYS
on Migrated Display DB2 Spaces panel 125
DAYSMIG
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Migrated Display DB2 Spaces panel 125
DB
on Display DB2 Databases panel 136
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Display SMS Info panel 154
on Migrated Display DB2 Spaces panel 125
DC
on Display SMS Info panel 154
DSETS
on Display DB2 Volumes panel 117
on Display VCATS panel 149
EXTENTS
on Display DB2 Databases panel 136
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Display VCATS panel 149
on Migrated Display DB2 Spaces panel 125
extents, number used on volume
on Display DB2 Volumes panel 117
MC
on Display SMS Info panel 154
number used tracks on volume
on Display DB2 Volumes panel 117
percent of allocated space used
on Display DB2 Volumes panel 117
percent of volume used
on Display DB2 Volumes panel 117
percent tracks on volume
on Display DB2 Volumes panel 117
filters *(continued)*
PRIQTY
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Migrated Display DB2 Spaces panel 125
SC
on Display SMS Info panel 154
SECQTY
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Migrated Display DB2 Spaces panel 125
SG
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Display SMS Info panel 154
on Display Storage Groups panel 146
on Migrated Display DB2 Spaces panel 125
SP
on Display SMS Info panel 154
on Migrated Display DB2 Spaces panel 125
STORTP
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Display SMS Info panel 154
on Migrated Display DB2 Spaces panel 125
TYPE
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Display SMS Info panel 154
on Migrated Display DB2 Spaces panel 125
US/DSET
on Display DB2 Databases panel 136
on Display DB2 Spaces panel 141
on Display DB2 Volumes panel 117
on Display Multivol Dset panel 133
on Display VCATS panel 149
on Migrated Display DB2 Spaces panel 125
USED
on Display DB2 Databases panel 136
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Display VCATS panel 149
on Migrated Display DB2 Spaces panel 125

filters *(continued)*
USED%
on Display DB2 Databases panel 136
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Migrated Display DB2 Spaces panel 125
VC
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Display SMS Info panel 154
on Display VCATS panel 149
VC%
on Migrated Display DB2 Spaces panel 125
VOL
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Display SMS Info panel 154
volume serial
on Display DB2 Volumes panel 117
XT/DSET
on Display DB2 Databases panel 136
on Display DB2 Spaces panel 141
on Display DB2 Volumes panel 117
on Display Multivol Dset panel 133
on Display VCATS panel 149
on Migrated Display DB2 Spaces panel 125
find 81
freespace
included in extents list 116
from Volume Profile panel 278
FUNCTION field 275

G

GROUP field 144
on Display Storage Groups panel 144

H

H select 116
HDELETE command
on Migrated Display DB2 Spaces panel 124
Help 73
for !DB/DASD panels 40
for ISPF 43
Help *(continued)*
for messages 44
HIGH LEVEL QUALIFIER#2 field
on the !DB/Tools Global Configuration Information panel 267
history
data set 343
DB2DASD Summary History panel 109
displaying for a volume 116
History Detail Report 112
History Detail Report 112
housekeeping
administration 259
HRECALL command 124, 244
on Migrated Display DB2 Spaces panel 124

I

I (insert) select 278
IC=ab command 290
ID
DB2 system 63
Image Copy 173, 178, 179
Image Copy Options 290
Include 170
Individual data set options 169
input panel, SQL
accessing 326
description 324
exiting 326
using uppercase and lowercase 327
ISPF
Help for 43
ISPF facilities
HELP 73
KEYS 71
locate 81
PANELID 72
PFSHOW 71
PRNT 74
scroll amount 77
scrolling PF keys 76
SORT command 78
split screen 72
TSO commands 72
IX field 130, 138, 150
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on SMS Info display 151

J

JBCRDMDL member 255
JCL
  generation
    model jobcard 255
  model statements 256
  sample 285
JCL DD Statements
  in !DB/DASD batch utility JCL 301
    DD statements 301
    DSDXLPDS 301
    DSDXPDS 301
    DSDXUPDS 301
    REPORTS 301
    SFXMLIB 301
    SFXZPARM 302
    SYSERROR 302
    SYSIN 302
    SYSPRINT 302
    SYSPROC 303
    SYSTSIN 302
    SYSTSPRT 302
    UTILCMDS 303
JCLMODEL member 256
JL=a command 291
JM (Jobcard Member) 291
JM=a command 291
Job Step Placement 177
Jobcard 180, 227, 238
Jobcard Member command (JM) 291

K

KEYS 71
KTBPHODB 269
KTCTRACE 318
KTD1COPY 173
KTDSQL SQL command 339

L

LAST REF DATE field 123
  on Migrated Display DB2 Spaces panel 123
left bracket
  using in SQL 332
LLOVL% field 117
LOAD Library field
  on the !DB/Tools Global Configuration Information panel 267
locate 81
  fing 81
LOCATE command
  on Display DB2 Databases panel 135
  on Display DB2 Spaces panel 139
  on Display DB2 Volumes panel 115
  on Display Multivol Dset panel 131
  on Display SMS Info panel 152
  on Display Storage Groups panel 145
  on Display VCATS panel 148
  on Migrated Display DB2 Spaces panel 124
LOCATE (L) command 115, 124, 131, 135, 139, 145, 148, 152
Log Activity List panel 275
Log PDS 36
Log PDS member 274
logging process description 274

M

M (move) select 278
M select 116, 132, 136, 140, 152
M select option 135
Macro Facility 83
MAINT command 316
MAINT? command 316
maintenance level
  determining 316
  MAINT command 316
  MAINT? command 316
maintenance requirements for !DB/DASD 36
Management Class field
  on SMS Info display 151
MAX BLKSIZE for VIO
  on the !DB/Tools Global Configuration Information panel 268
MAX PCT field
MC filter 154
  on Display SMS Info panel 154
MEMBER field 275
menu
  Administration
    using 262

messages
Help for 44
MGMT CLASS field 150
on SMS Info display 151
MIGRAT DSETS field 110
on DB2DASD Summary History panel 110
migrated data sets 110, 114, 127, 164, 222, 234
deleting 245
display 243
DUMPing 221
MOVing 159
not included in XTS/DSET calculation 110
recalling 244
RESTORing 233
Migrated Data Sets panel 122
commands 124
fields 123
model jobcard
JBCRDMDL member 255
substitution variables 255
model statements
JCLMODEL member
DEFINE statements 258
DELETE statements 258
editing the member 258
format 256
MOVE 290
batch utility 290
in batch 284
table spaces 132, 140
table spaces on a volume 116
MOVE command 135, 139, 152
on Display DB2 Databases panel 135
on Display DB2 Spaces panel 139
on Display DB2 Volumes panel 115
on Display Multivol Dset panel 131
on Display SMS Info panel 152
MOVE facility
After Options command (CA) 290
Before Options command (CB) 290
commands 291
Delete Options command (DL) 290
Device Type command (DV) 290
example 292
Image Copy command (IC) 290
Jobcard Member Library command (JL) 290
print job 292
submit job 292
MOVE faciltiy
example 293
MOVE options 172
Primary Quantity
Size Options 160
Secondary Quantity
Size Options 160
Size Options 160
MOVE profile 161
MOVE Size Options 169
MOVE utility 256
MOVE Volume Options 169
MOVE Volumes Options 167
MOVing
*ERROR data sets 159
groups of data sets 158
individual data sets 158
migrated data sets 159
the DB2 Catalog 159
widows 159
MSGS Data Set field
on the !DB/Tools Global Configuration Information panel 267
multi-volume data sets command (MV) 288
MVS ID field
on the !DB/Tools DB2 Configuration Information panel 270

N

ND sort 120
NO. #XTS field 138
on Display DB2 Spaces panel 138
NO. XTS field
on SMS Info display 151
non-DB2 data sets
identifying 120
Number of Allocated Tracts field
on VCAT display 147
NUMBER OF DSETS option 175
Number of Extents field
on Display DB2 Databases panel 134
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on SMS Info display 151
on VCAT display 147
Number of Table Spaces field
on Display DB2 Databases panel 134
on VCAT display 147

Number of Tracks Allocated field
on Display DB2 Databases panel 134
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
Number of Tracks field
on SMS Info display 151
Number of Tracks Used field
on Display DB2 Databases panel 134
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
Number of Used Tracts field
on VCAT display 147
Number of Volumes in the Storage Group field
on Display Storage Groups panel 144

O

object list panels 63
OMEGAMON II for DB2, accessing
!DB/DASD 51
ONE JOB Option 175, 177, 291
One Job Option command (1J) 291
online documentation 17
online Help
resolving problems 315
Options
Define Cluster 312
Recall Options 308
orphan data sets
deleting 248, 249
description 246
Orphans
DB2 system status 49
Orphans facility 246
Orphans panel 247
Output PRNT 294
output, displaying SQL 341

P

PANELID 72
panels 275
DB2DASD History Detail 112
DB2DASD Summary History 109
!DB/Tools DB2 Configuration
Information 269
!DB/Tools Global Configuration
Information 266
panels *(continued)*
Define Cluster 311
Define Cluster panel 311, 312
Display DB2 Databases 134
Display DB2 Spaces 137
Display DB2 Volumes 113
Display Multivol Dset 129
Display SMS Info 150
Display Storage Groups 144
Display VCATS 147
KTBPHODB 269
KTDPFILT 94
KTDPMENU 54
Log Activity List 275
Migrated Datasets 122
object list
overview 63
Orphans 247
Recall Option 307
Recall Option panel 307
Recall Options panel 308
SQL input
accessing 326
description 324
exiting 326
using uppercase and lowercase 327
TSO Command Processor 50
Volume History 126
Volume Profile 277
Volumes in Profile 278
VTOC Infor <volumeid> 120
Widows 251
XTS on <volume.dataspace> 142
XTS on <volumeid.dataspace> 142
XTS on Display Extents panel 118
panels, !DB/DASD
Help for 40
PART# column
on data set history table 343
Partiion Number field
on SMS Info display 151
Partition Number field
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
PDS member
changing names 335
PDSCOPY command 296
PDSEDIT command 298

PDSEXEC command 299
PDSLIST command 300
%, with CLIST
  percent 49
Percent of allocated tracks field
  on Display DB2 Databases panel 134
Percent of Tracks Used field
  on SMS Info display 151
Percent of Used Allocated Tracks field
  on Display DB2 Spaces panel 138
  on Display Multivol Dset panel 130
PF keys
  END 69
  scrolling 76
PFSHOW 71
PG (Copy Program) 291
PG=a command 291
pop-up overlays 69
portable document format, Adobe 13
PQ (Primary Quantity) 291
PQ sort 131, 135, 140
PQ=a command 291
PQTY column
  on data set history table 343
PQTY field 123
  on Display DB2 Spaces panel 138
  on Display Multivol Dset panel 130
  on Migrated Display DB2 Spaces panel 123
PQTY TRKS field 130, 138
Primary Quantity
  Move Size Option 160
Primary Quantity command (PQ) 291
Primary Quantity field
  on Display DB2 Spaces panel 138
  on Display Multivol Dset panel 130
  on Migrated Display DB2 Spaces panel 123
Primary Qyantity 291
primary size factor 160
PRIQTY filter 125, 133, 141
  on Display DB2 Spaces panel 141
  on Display Multivol Dset panel 133
  on Migrated Display DB2 Spaces panel 125
PRNT 69, 74, 110, 294
  command in batch 292
  in batch 284
PRNT command 135, 139, 152
  DB2DASD Summary History panel 110
  on Display DB2 Databases panel 135
  on Display DB2 Spaces panel 139
  on Display DB2 Volumes panel 115
PRNT command *(continued)*
  on Display Multivol Dset panel 131
  on Display SMS Info panel 152
  on Display Storage Groups panel 145
  on Display VCATS panel 148
  on Migrated Display DB2 Spaces panel 124
  on Volume History display 127
  on XTS on <volumeid.dataspace> panel 143
PRNT facility 294
Process Member Menu 157, 181, 195, 197
profile, utility 161
profiles
  creating 280
  description 277
  displaying 277
  erasing 281
  selecting 278
  updating 279
PSWD column
  on data set history table 343
PT field 130, 138, 150
  on Display DB2 Spaces panel 138
  on Display Multivol Dset panel 130
  on SMS Info display 151
PT sort 131, 135, 140

Q

Q and QQ SQL commands 339
QMF 344

R

R select 116, 132, 136, 149, 152
REAL CATALOG PREFIX field
  on the !DB/Tools DB2 Configuration Information panel 270
recall migrated data sets
  procedure to follow 244
  using HRECALL command 244
Recall Option panel 307
  accessing
    example of 307
    from the primary menu 307
Recall Options 308
Recall Options panel 308

RE-EXEC field 275
re-execute (X) select 275
RELVL column
  on data set history table 343
reports 301
  batch utility
    on REPORTS DD Statement commands 294
    SYSPRINT 294
  History Detail Report 112
  in !DB/DASD batch utility JCL 301
  interpreting 340
REPORTS DD statement 294
requirements for batch commands 295
RESTORE
  table spaces 132, 140
  table spaces on a volume 116
  VCAT data sets 149
RESTORE command 135, 139, 152
  on Display DB2 Databases panel 135
  on Display DB2 Spaces panel 139
  on Display DB2 Volumes panel 115
  on Display Multivol Dset panel 131
  on Display SMS Info panel 152
RESTORE Options 235
RESTORE Program 236
RESTORing
  *ERROR data sets 233
  groups of data sets 232
  individual data sets 232
  migrated data sets 233
  the DB2 Catalog 233
  widows 233
ROLLBACK command 333
RSRVD column
  on data set history table 343
RUNTIME column
  on data set history table 343

S

S select 84, 116, 136, 145, 148, 152
SC filer 154
SC filter
  on Display SMS Info panel 154
scroll amount 77
scrolling PF keys 76
Secondary Quantity
  Move Size Option 160
Secondary Quantity command (SQ) 291
Secondary Quantity field
  on Display DB2 Spaces panel 138
  on Display Multivol Dset panel 130
  on Migrated Display DB2 Spaces panel 123
secondary size factor 160
SECQTY filter 125, 133, 141
  on Display DB2 Spaces panel 141
  on Display Multivol Dset panel 133
  on Migrated Display DB2 Spaces panel 125
select options
  on Display DB2 Volumes panel 116
semicolon in SQL statements 334
session
  beginning a new 57
  commands 57
  ending 59
  exiting 60
  in !DB/DASD 57
  sessions menu
    accessing 58
    using 60
  switching to another session 60
SF (Size Factor) 291
SF=a command 291
SFXMLIB 301
  in !DB/DASD batch utility JCL 301
SFXZPARM
  in !DB/DASD batch utility JCL 302
SG filter 125, 133, 141, 146, 154
  on Display DB2 Spaces panel 141
  on Display Multivol Dset panel 133
  on Display SMS Info panel 154
  on Display Storage Groups panel 146
  on Migrated Display DB2 Spaces panel 125
SG sort 145
SG (storage groups) command 288
size
  of new table spaces 160
size factor 160, 291
Size Factor command (SF) 291
Size Options 169
SKELS DATA SET field 267
  on the !DB/Tools Global Configuration Information panel 267
SMS Info fields 150

SORT command 78, 152
on Display DB2 Databases panel 135
on Display DB2 Volumes panel 115
on Display SMS Info panel 152
on Display Storage Groups panel 145
on Display VCATS panel 148
SORT (D) command 115, 131, 135, 139, 145, 148
sorting data sets 166
SP filter 125, 133, 141, 154
on Display SMS Info panel 154
on Migrated Display DB2 Spaces panel 125
SP sort 116, 131, 135, 140
SPACE field 118, 123, 130, 138, 142, 150
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on Migrated Display DB2 Spaces panel 123
on SMS Info display 151
! special character 332
specifying device location 173
split screen 72
SPNAME column
on data set history table 343
SQ (Secondary Quantity) 291
SQ sort 131, 135, 140
SQL
accessing the input panel 326
commands
KTDSQL 339
Q and QQ 339
description of the input panel 324
displaying output 341
differences 341
entering statements directly 328
executing statements
entered directly 329
retrieved 330
exiting the input panel 326
interpreting reports 340
keyboard mapping 332
recovery from errors 331
statements
changing the PDS member 335
column positions 334
executing those in a different PDS 337
executing those stored in a PDS member 335
procedure for editing and testing 339
storing in a PDS member 333
symbols required in a PDS member 334
testing single and multiple lines 339
SQL *(continued)*
statements *(continued)*
testing within a program 338
using in !DB/DASD 321–341
using the exclamation point 332
using the left bracket 332
using uppercase and lowercase 327
SQL, dynamic
PDSs to use
SQTY column
on data set history table 343
SQTY field 123
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on Migrated Display DB2 Spaces panel 123
SQTY TRKS field 130, 138
ST sort 120
statements
SQL
changing the PDS member 335
column positions 334
differences in displaying output 341
displaying output 341
entering directly 328
executing those entered directly 329
executing those in a different PDS 337
executing those retrieved 330
executing those stored in a PDS member 335
interpreting reports 340
procedure for editing and testing 339
storing in a PDS member 332, 333
symbols required in a PDS member 334
testing single and multiple lines 339
testing within a program 338
STGRP column
on data set history table 343
STOP AT COMMIT field 174
STOR CLASS field 150
on SMS Info display 151
Storage Class field
on SMS Info display 151
storage group command (SG) 288
Storage Group Creator ID field
on Display Storage Groups panel 144
Storage Groups Name field
on Display Storage Groups panel 144
Storage Management Subsystem (SMS) 114

STORTP filter 125, 133, 141, 154
on Display DB2 Spaces panel 141
on Display Multivol Dset panel 133
on Display SMS Info panel 154
on Migrated Display DB2 Spaces panel 125
STRT ADR field 118, 142
on Data Space Extents display 143
on Volume Extents display 119
STTYP column
on data set history table 343
SU (summary information) command 288
SUB command 292
summary information command (SU) 288
switching
between sessions 58
in !DB/DASD 57
switching to another session 60
symbols, use of 15
syntax
batch utility commands 289
SYSERROR
in !DB/DASD batch utility JCL 302
SYSIN
in !DB/DASD batch utility JCL 302
SYSIN DD statement
batch utility 302
SYSOUT HOLD CLASS field
on the !DB/Tools Global Configuration Information panel 268
SYSPRINT
in !DB/DASD batch utility JCL 302
SYSPRINT DD Statement 294
SYSPRINT report 294
SYSPROC 303
in !DB/DASD batch utility JCL 303
system maintenance
level of 316
version 316
System PDS 36
SYSTSIN 303
in !DB/DASD batch utility JCL 302
SYSTSPRT 303
SYSTSPRT DD
in !DB/DASD batch utility JCL 302

T

table space
determining the size of new 160
used tracks in 130
volume 138
Table space name field
on Display DB2 Spaces panel 138
on Display Multivol Dset panel 130
on Migrated Display DB2 Spaces panel 123
table spaces
data sets 106
dumping 132, 140
moving 132, 140
moving on volume 116
restoring 132, 140
restoring to a volume 116
table spaces on volume
filter 117
TABLES DATA SET field
on the !DB/Tools Global Configuration Information panel 267
tape as target location, specifying 173
Tape Copy Option 176
tape device, specifying 176
Tape Name 291
Tape Name command (TN) 291
telephone support 346
TEMP DISK SYMBOLIC NAME field
on the !DB/Tools Global Configuration Information panel 268
testing
SQL statements
multiple lines 339
procedure 339
single line 339
testing SQL statements 338
TIME field 110, 275
on DB2DASD Summary History panel 110
TLSPC column
on data set history table 343
TN (Tape Name) 291
TN=a command 291
To Volume command (TV) 291
trace facility 318
TSO Command Processor panel 50
TSO commands 72
TV=a command 291

TY sort 131, 135, 140
TYPE field 123
  on Migrated Display DB2 Spaces panel 123
TYPE filter 125, 133, 141, 154
  on Display DB2 Spaces panel 141
  on Display Multivol Dset panel 133
  on Display SMS Info panel 154
  on Migrated Display DB2 Spaces panel 125

U

UNUSED command 115
  on Display DB2 Volumes panel 115
update a profile 279
US sort 116, 131, 135, 140, 148
US/DSET field 117
US/DSET filter 125, 133, 135, 136, 141, 149
  on Display DB2 Databases panel 136
  on Display DB2 Spaces panel 141
  on Display DB2 Volumes panel 117
  on Display Multivol Dset panel 133
  on Display VCATS panel 149
  on Migrated Display DB2 Spaces panel 125
USED column
  on data set history table 343
USED field 117
USED filter 125, 133, 135, 136, 141, 149
  on Display DB2 Databases panel 136
  on Display DB2 Spaces panel 141
  on Display DB2 Volumes panel 117
  on Display Multivol Dset panel 133
  on Display VCATS panel 149
  on Migrated Display DB2 Spaces panel 125
USED MB field 110
  on DB2DASD Summary History panel 110
used tracks
  number in the table space 130
USED TRACKS field 114, 127, 130, 134, 138
  on Data Space Extents display 143
  on Display DB2 Databases panel 134
  on Display DB2 Spaces panel 138
  on Display Multivol Dset panel 130
  on Volume Extents display 119
USED TRACTS
  on Display DB2 Volumes panel 114
  on Volume History display 127
USED TRKS field 119, 142, 147
  on Data Space Extents display 143
  on VCAT display 147
USED TRKS field *(continued)*
  on Volume Extents display 119
USED% field 117
USED% filter 125, 133, 135, 136, 141
  on Display DB2 Databases panel 136
  on Display DB2 Spaces panel 141
  on Display DB2 Volumes panel 117
  on Display Multivol Dset panel 133
  on Migrated Display DB2 Spaces panel 125
USED= field 55
USEDVL% field 117
USEDVL% filter
  on Volume History display 117
user exits 282
User PDS 36
USERID field 275
using in input stream 289
UTIL DATA SET
  on the !DB/Tools Global Configuration Information panel 268
UTILCMDD 303
UTILCMDS 303
  in !DB/DASD batch utility JCL 303
utilities
  MOVE 256
  Widows 256
UTILYD member 285

V

V select 136
value compares 101
variables
  in JCL 255
  in model jobcard 255
VC filter 125, 133, 141, 149, 154
  on Display DB2 Spaces panel 141
  on Display Multivol Dset panel 133
  on Display SMS Info panel 154
  on Display VCATS panel 149
VC sort 148
VC (VCATS) command 288
VC% filter
  on Migrated Display DB2 Spaces panel 125
VCAT data sets
  dumping 149
  restoring 149

VCAT field 147
  on VCAT display 147
VCAT Name field
  on VCAT display 147
VCATNM column
  on data set history table 343
VCATS command (VC) 288
VIO SYMBOLIC NAME field
  on the !DB/Tools Global Configuration Information panel 268
VL sort 116, 131, 135, 140
VL (volumes) command 288
VLSR1 column
  on data set history table 343
VOL field 117
VOL filter 133, 141, 154
  on Display DB2 Spaces panel 141
  on Display DB2 Volumes panel 117
  on Display Multivol Dset panel 133
  on Display SMS Info panel 154
VOLSER field 114, 127, 130, 138, 150
  on Display DB2 Spaces panel 138
  on Display DB2 Volumes panel 114
  on Display Multivol Dset panel 130
  on SMS Info display 151
  on Volume History display 127
Volume Extents 118
Volume Extents display 120
VOLUME field 144
  on Display Storage Groups panel 144
Volume for Data Set field
  on SMS Info display 151
Volume History display 126
  select options 116
Volume History panel 126
  commands 127
  fields 127
Volume of the data set field
  on Display Multivol Dset panel 130
Volume of the table space field
  on Display DB2 Spaces panel 138
Volume Options 169
Volume Profile panel 277
  example of 278
  selecting a profile 278
Volume Profile Panel - List of Utility Profiles 277
Volume Serial field
  on Display Storage Groups panel 144
volume serial filter 117
volumes
  data sets on multiple 129
volumes command (VL) 288
Volumes In Profile panel 278
  commands 278
  creating a profile 280
  erasing a profile 281
  selects 278
  updating a profile 279
Volumes Options 167
VSAM Catalog 302
VSAM Catalog Name field
  on Display Storage Groups panel 144
VTOC Display 120
VTOC Info <volumeid> panel 120
  sorts 120

W

widow data sets 114, 127
  deleting 252
  description 250
widows 164, 222, 234
  DUMPing 221
  MOVing 159
  RESTORing 233
Widows facility 250
Widows panel 251
Widows utility 256
windows
  in !DB/DASD 57
  sessions 57

X

X (re-execute) 275
X select 116, 132, 140, 152
X select option 135
XD (Exclude Database) 291
XD sort 135
XD=a command 291
XS (Exclude Table Space) 291
XS=a command 291
XT sort 116, 120, 131, 135, 140
XT# field 118, 142
  on Data Space Extents display 143
  on Volume Extents display 119

XT/DSET field 117
XT/DSET filter 125, 133, 135, 136, 141, 149
  on Display DB2 Databases panel 136
  on Display DB2 Spaces panel 141
  on Display DB2 Volumes panel 117
  on Display Multivol Dset panel 133
  on Display VCATS panel 149
  on Migrated Display DB2 Spaces panel 125
XTS on <volume.dataspace> panel 142
  fields 142
XTS on <volumeid> panel
XTS on Display Extents panel 118
  fields 118
XTS/DSET field 110, 134
  on DB2DASD Summary History panel 110
  on Display DB2 Databases panel 134
xyxpanel 113

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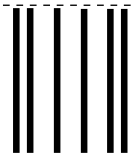

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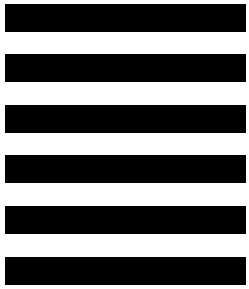

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