

# **Basic User's Guide**

**!DB®/WORKBENCH 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. 5,999,705; Improved Message Queuing Based Network Computing Architecture, Patent Pending; User Interface for System Management Applications, Patent Pending.

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### Preface

The *!DB/WORKBENCH Basic User's Guide* gives you information and direction on how to start using !DB@/WORKBENCH for DB2, how to use the fundamentals of object list management and displaying data, how to work with the data, and how to use !DB/WORKBENCH commands and macros.

The individuals who can benefit from this guide include

- database administrator
- storage administrator
- DB2 systems programmer
- security administrator
- applications programmer

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### How this guide is organized

This guide is organized into four main sections.

- The “*Getting Started*” section is comprised of three chapters that
  - Introduce you to !DB/WORKBENCH
  - Explain how you access and exit !DB/WORKBENCH
  - Show you how to use online Help with this guide
- The “*Introducing Fundamentals*” section contains three chapters that
  - Explain how you use the Primary Menu and object list panels
  - Allow you to use selection lists from object list panels
  - Discuss using the ISPF facilities within !DB/WORKBENCH
- The “*Displaying Data*” section is organized into five chapters that
  - Introduce you to the display features of !DB/WORKBENCH
  - Give you an overview of the object list panels
  - Explain methods for displaying data
  - Show you how to filter object lists and use the filtered display
  - Guide you in the methods for displaying the data from the DB2 catalog

- The “*Working with Data*” section includes five chapters that
  - Introduce you to the operations (such as commands and selects) that you can perform on data
  - Identify the methods you use to work with data
  - Explain the methods you use to generate statements for objects
  - Give you information on using ALTER commands and selects
  - Provide guidance on how you use the !DB/WORKBENCH macros
- This guide also contains an index. (A complete glossary is provided with the *!DB/WORKBENCH Reference Manual*.)

# Conventions

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## Introduction

Certain conventions have been followed to add to the usability of this document. Examples are given for each convention.

---

## Conventions used in this guide

This guide uses the following conventions.

- |                           |                                                                                                                                                                                                                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Commands</b>           | All command names are in uppercase. This includes commands for TSO, DB2, and !DB/WORKBENCH, such as the ALIAS command.                                                                                                                                                                                  |
| <b>Percent (%) sign</b>   | A percent (%) sign is shown in front of all CLISTS mentioned in the written instructions for optimum performance. However, the use of the % is optional. For example, the CLIST KTC is preceded by the %, such as %KTC.                                                                                 |
| <b>Function keys</b>      | This guide does not refer to specific function keys, such as F10. Because these function keys are user-defined, the guide instructs you to enter the command on the command line.<br><br><b>Example:</b> Type <b>RETURN</b> on the command line and press Enter, or press the appropriate function key. |
| <b>Keyed data</b>         | When you are given instructions to key data, the data to be keyed will be in bold, such as <b>RETURN</b> .                                                                                                                                                                                              |
| <b>Panels and figures</b> | The panels and figures in this document are representations. Actual product panels may differ.                                                                                                                                                                                                          |
| <b>Revision bars</b>      | Revision bars (l) appear on the left margin to identify new or updated material.                                                                                                                                                                                                                        |
| <b>Variables</b>          | If the data is a variable, the data will be in an italic font, such as <i>databasename</i> . The variable name will not necessarily be the correct number of characters allowed by the system, but instead be a descriptive name.                                                                       |

# Adobe Portable Document Format

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## 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.

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## 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](http://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 Set

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### Introduction

Candle provides a complete set of documentation for !DB/WORKBENCH. 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/WORKBENCH.

<b>Document Number</b>	<b>Document Name</b>	<b>Description</b>
TI51-5840	<i>!DB/Tools Installation and Customization Guide</i>	Gives the requirements and instructions to install all the !DB@/Tools for DB2.
TW54-5847	<i>!DB/WORKBENCH Basic User's Guide</i>	Contains information on <ul style="list-style-type: none"><li>● accessing, using, and exiting !DB/WORKBENCH</li><li>● online Help</li><li>● Primary Menu and object list panels</li><li>● selection lists from object list panels</li><li>● ISPF facilities within this product</li><li>● displaying data and filtering object lists</li><li>● operations on data</li><li>● !DB/WORKBENCH macros</li></ul>
TW54-5848	<i>!DB/WORKBENCH Advanced User's Guide</i>	Contains information on <ul style="list-style-type: none"><li>● SQL and DB2 commands</li><li>● managing the system</li><li>● creating objects</li><li>● running utilities</li><li>● running batch operations</li><li>● JCL.</li></ul>

<b>Document Number</b>	<b>Document Name</b>	<b>Description</b>
TW53-5849	<i>!DB/WORKBENCH Reference Manual</i>	Contains information on <ul style="list-style-type: none"> <li>● commands and selects in online and batch</li> <li>● methods for filtering and sorting</li> <li>● accessing data from the DB2 catalog</li> <li>● accessing data from the extract</li> <li>● problem resolution</li> <li>● abend codes and error messages</li> </ul>

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### Online documentation for BookManager

In addition to the printed versions, !DB/WORKBENCH documentation is available in BookManager format. Subsequent maintenance releases of the product between major releases will contain updated BookManager 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:

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

### Version 500 Changes

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#### Overview

This section describes what is different between !DB/WORKBENCH and previous versions of !DB/WORKBENCH.

#### Differences in this release

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

DB2 Version 6 contains enhancements for

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

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





# Getting Started



# Chapter 1. An Introduction to Using !DB/WORKBENCH

---

## Introduction

This chapter contains prerequisites for using !DB/WORKBENCH and an overview of how you can use !DB/WORKBENCH to automate and optimize your DB2 operations. The chapter also provides different approaches you can use to find the information you want— whether you are a first-time user or an experienced user of !DB/WORKBENCH.

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## Before You Begin to Use This Guide

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### Prerequisite actions before you begin to use this guide

Before you begin to perform the instructions in this guide, you must have completed these actions:

- Installation procedures
- Extract procedures

For instructions for these procedures, see *!DB/Tools Installation and Customization Guide*.

## Resources for Learning Topics in This Section

---

### Overview

This unit lists resources available in this guide for getting started with !DB/WORKBENCH.

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### Resources in this guide

The chart lists resources within this section “Getting Started.”

<b>Information You Want</b>	<b>Resources Available</b>
Introduction to how !DB/WORKBENCH can help you perform your job and how to find information that matches your needs	This chapter
Instructions for accessing !DB/WORKBENCH	“Accessing and Exiting !DB/WORKBENCH” on page 53
Instructions for using online Help and an overview of how to use Help and this guide to find the information you want	“Using Online Help with this Guide” on page 63

## Overview of the Chapter

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### Background about !DB/WORKBENCH

!DB/WORKBENCH lets you use the power of DB2 even if you have not become an expert in using DB2. With !DB/WORKBENCH, you can perform complex tasks with DB2 without extensive keying of statements or without constant research into the syntax of DB2 commands.

!DB/WORKBENCH lets you choose from a variety of functions and begin successfully using these functions as you learn !DB/WORKBENCH and DB2.

Because of the flexibility of !DB/WORKBENCH, this guide and online Help contain extensive information. The guide and Help, however, are organized so that you can find the information you need for the features in !DB/WORKBENCH that you want to use.

!DB/WORKBENCH is designed to let you do your work in the way you prefer. In the same sense, this guide and online Help are organized to let you use information in the way you prefer—whether you are an experienced user of DB2 and !DB/WORKBENCH or have not used !DB/WORKBENCH before.

---

### Organization of information in the chapter

The chapter focuses on two broad topics: a brief introduction to the power that !DB/WORKBENCH offers and to the guide and online Help for !DB/WORKBENCH. Because you can use !DB/WORKBENCH and the information that supports it in multiple ways, this chapter includes different perspectives for beginning to use !DB/WORKBENCH. For example, it provides guidelines if you prefer to begin using products and look at sources only if you have a question or if you are a new user and want introductory information.

## Organization of information and your needs

Review the chart to select the units in this chapter that serve your needs and preferences for using information.

	!DB/WORKBENCH	This Guide	Primary Menu	Quick Start	New User	Experienced User	Task	Display	Statements	RI Data	Productivity	Access	System Management	Problems
	p.24	p.29	p.31	p.33	p.36	p.38	p.40	p.46	p.43	p.41	p.45	p.47	p.48	p.50
If you prefer to begin using products and look at information only for resolution of questions	√	√	√											
If you prefer quick-reference information	√	√		√										
If you are a new user of !DB/WORKBENCH	√	√			√									
If you are an experienced user of !DB/WORKBENCH	√	√				√								
If you have a task to perform	√	√					√							
If you want to display data	√	√					√	√						
If you need to generate statements using !DB/WORKBENCH	√	√					√		√					
If you want to use referential data										√				
If you are looking for aids to productivity	√	√					√				√			
If you want to access functions or other products	√	√					√					√		
If you need to perform a task to manage your system	√	√					√						√	
If you are resolving a problem	√	√					√							√

## Introduction to !DB/WORKBENCH

---

### Overview

This unit discusses the variety of features available with !DB/WORKBENCH and the tasks you can perform using !DB/WORKBENCH.

---

### Licensing requirements

You must have a !DB/WORKBENCH license on every central processing unit (CPU) where you run !DB/WORKBENCH.

---

### Learning to use DB2 while maintaining productivity

!DB/WORKBENCH provides the technical power of DB2 without laborious keying, but it also helps you to learn more about DB2 while you are using its functions. !DB/WORKBENCH provides extensive online Help for specific information about the menus and panels you are using.

!DB/WORKBENCH also provides extended Help available from most panels. Extended Help includes a glossary and index, and overviews of commands, selects, filters, and windows. This guide also provides resources for learning DB2 and includes information for beginning and experienced users and quick reference materials in chapters.

---

### Accessing the !DB/WORKBENCH extract or the DB2 catalog

With !DB/WORKBENCH, you can use the !DB/WORKBENCH extract of catalog information for fast access to the DB2 catalog without impact on DB2 performance. Further, you can use the extract even if DB2 is not available. You have the choice of direct access to the DB2 catalog using the Interactive Display Menu when you need it, and you can control who uses the DB2 catalog. You also can use facilities within !DB/WORKBENCH to return to previous versions of the extract so that you can rebuild the objects.



---

## Displaying DB2 objects and information about objects with !DB/WORKBENCH

To display objects in DB2, you need to generate SQL statements and format the display. With !DB/WORKBENCH, however, you can select an object list panel from the Primary Menu, and the system displays a report showing the object and related data about the object. For example, you can display DB2 objects, such as databases, table spaces, tables, and indexes as well as packages and plans.

You can make a more specific request for data by entering a command or select on an object list panel. For example, you can use a command to display statistics or a select to display the column associated with the object you selected.

---

## Displaying and managing referential data

Using commands and selects, you can display referential data and relationships. You can define referential relationships directly by using the A (Alter) select with tables or by using the RFO command to generate ALTER statements using existing referential relationships as a source for values in the statements.

---

## Controlling objects for displays or processing

Without entering extensive statements, you can use !DB/WORKBENCH filters to control the objects the system displays or processes. You can filter using the name of an object, a status for an object, a selection using a numerical value for an object, or a combination of these three. With names for objects, you can use special characters such as the \* (asterisk); with numerical values for objects, you can use option codes, such as > or < =.

You can use filtering to control what is displayed; therefore, you also control which objects are processed using commands. For example, you can use filtering to display tables that share the same characters in their names and then use the DROP command to generate DROP statements for those tables only.

---

## Controlling objects for displays

With the exception of the All panel, each object list panel available from the !DB/WORKBENCH Primary Menu supports sorting of a variety of columns of data. By using sorting, you can focus on the objects you want to see instead of reviewing lengthy lists of objects.

## Reducing repetitive tasks

!DB/WORKBENCH provides an extensive facility for creating macros. You can combine commands, selects, filters, sorts, and utilities you frequently use in macros. You can then invoke the macros on the object list panel to automate these tasks.

---

## Generating CREATE statements and defining table spaces or index spaces

You can use the Create Menu to generate CREATE statements for databases, table spaces, tables, indexes, and storage groups. You can set up simple, segmented, or partitioned table spaces. You also have options to let DB2 manage the datasets or to manage them yourself. If you have not previously created the table space, you can generate the required AMS DEFINE statements using functions available when creating a table space.

---

## Generating statements for objects with !DB/WORKBENCH

To generate statements to manage objects with DB2, you need to key extensive statements. With !DB/WORKBENCH, you can enter a select or command with existing objects displayed on the panel and generate the statements you need. For example, you can use commands and selects in !DB/WORKBENCH to generate such statements as CREATE, ALTER, DROP, INSERT, and GRANT statements for one object or all objects listed on the panel.

You can then perform such tasks as invoking the statements or editing them if necessary. You can also delete or print the statements. With some commands and selects, you can accumulate the statements made on a panel with those on another panel and build the set of statements you need.

---

## Using SQL dynamically

With !DB/WORKBENCH, you can generate some SQL statements using commands or selects or you can enter SQL statements directly on an input panel. If an error exists when you execute the statement, !DB/WORKBENCH displays DB2 messages indicating the problem.

---

## Using DB2 commands

With !DB/WORKBENCH, you can use DB2 commands. You can generate commands and invoke them without exiting !DB/WORKBENCH.

---

---

## Using DB2 utilities within !DB/WORKBENCH

With !DB/WORKBENCH, you can use DB2 utilities for table spaces, index spaces, and storage groups. By using these functions, you can generate JCL and utility control statements for the DB2 utilities.

---

## Using batch processing

!DB/WORKBENCH supports batch processing. You can run DB2 utilities in batch as well as online. You can also use filters and selected commands in batch.

---

## Reducing tasks required to maintain the system

!DB/WORKBENCH provides a variety of methods for maintaining the system. For example, you can customize and maintain the system using options available from the Housekeeping option. You can display, grant, or revoke authorizations from the Authorizations menu.

You can display and manage the system initialization parameters using the DSNZPARMS menu, and you can use the online Help for the facility for detailed (and immediately available) information about DSNZPARMS keywords. You can use DASD space estimator when creating table spaces or indexes or as needed.

!DB/WORKBENCH logs executed statements and submitted jobs to a log PDS. This log is useful for auditing and for recovering from problems.

---

## Accessing !DB/QUICKCHANGE® for DB2 from !DB/WORKBENCH

You can access options to manage change or easily restore a !DB/QUICKCHANGE session by typing **QK** on the !DB/WORKBENCH Primary Menu. In addition, you can access !DB/QUICKCHANGE by selecting an ALTER or MIGRATE option on designated object list panels. If QK is not displayed as an option on the Primary Menu, you do not have the product installed.

## Using multiple !DB/WORKBENCH sessions as a window for database management

You can use multiple !DB/WORKBENCH sessions at one time and you can switch from one session to another using a command. For example, you can have simultaneous active sessions for databases, table spaces, tables, and plans.

---

## Memory requirements for running !DB/Tools

Candle® Corporation recommends a TSO and batch region size of at least 4MB for any !DB/Tools product. Candle Corporation recommends 6MB in these conditions:

- You are using !DB/WORKBENCH and !DB/QUICKCHANGE.
- The data for your organization consists of an extremely large number of objects.

## Introduction to Finding the Information You Want

---

### Overview

The unit shows how you can use the devices in the guide to increase your productivity and to avoid looking through information that does not match your needs.

---

### Background information about terms in this guide

This guide is organized in small, task-based units containing one or more pages. Each unit has its own title (such as the title of this unit “Introduction to Finding the Information You Want”) and its own overview so you can reduce the amount you read to determine whether the unit has information that matches your needs.

A chapter consists of a series of units on the same, specific topic. A section consists of a series of chapters that deal with the same, broad topic. A tab with the title of the section also precedes the section so that you can locate sections easily. If you need background knowledge to be able to perform tasks in a section, the background will be in the chapter that begins the section.

---

### Using devices in the guide to locate information

The chart shows which device to use to locate the type of information you want.

<b>Task You Want to Perform</b>	<b>Device to Use</b>
Evaluate ways that you can use !DB/WORKBENCH to meet your needs	Skim the table of contents. (In this guide, the table of contents includes titles of units so you can see the tasks covered in a chapter.)
Locate instructions for performing a task	Skim the table of contents for the task.
	Skim the index for the name of the task.
Locate quick reference	Skim the titles of the chapters in the table of contents of the <i>!DB/WORKBENCH Reference Manual</i> .

---

**Using this guide to determine if information matches your needs**

The chart lists which device in the guide to use to determine if information matches your needs.

<b>Task You Want to Perform</b>	<b>Device to Use</b>
Determine which chapter in a section matches your needs	Skim the unit “Resources for Learning about Topics in this Section” (included in the beginning pages of the first chapter within a section).
Determine if background is required for a chapter in a section	Read the introduction for the chapter or the beginning page of each chapter.
Determine if a chapter matches your needs or if you have to perform prerequisites before you can use the instructions in a chapter	Read the introduction and table of contents for the chapter (located on the first page of each chapter).
Determine which unit in a chapter matches your needs or if you need to use several units to perform a task	Skim the unit “Overview of the Chapter” (located in the beginning pages of each chapter).

## Finding Sources about Options on the !DB/WORKBENCH Primary Menu

### Overview

This unit provides sources for finding information in this guide if you want to use options on the !DB/WORKBENCH Primary Menu.

### Background about the ! and !DB/WORKBENCH

In most cases, when the system displays the name *!DB/WORKBENCH* on a panel, it displays the ! (exclamation point). Variations in keyboards and in keyboard mapping can produce other characters, such as the [ (left bracket), in place of the ! (exclamation point).

The only effect on operation occurs if you enter an ! (exclamation point) when using the dynamic SQL facility within !DB/WORKBENCH. If you need information on using the ! (exclamation point), see the chapter “Using the Dynamic SQL Facility in !DB/WORKBENCH” in *!DB/WORKBENCH Advanced User's Guide*.

### Options available from the !DB/WORKBENCH Primary Menu

The illustration shows the options available on the !DB/WORKBENCH Primary Menu. The list on the next page shows the source of information for the options. For example, if you want to use the options identified with **7**, see the section “Creating Objects” in *!DB/WORKBENCH Advanced User's Guide*.

```

PRIMARY MENU ----- DB/WORKBENCH --- DB2=DB31-----
Cmd ==>                                                    99/07/10 08:08

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

  D Databases              ZP DSNZPARM Information 5
  S Tablespaces            ES Estimate Tablespace size 6
  T Tables                 EX Estimate Indexspace size
  C Columns                CR Create new objects 7
  I Indexes                H Housekeeping options 8
1 A All                    ? Display Subsystem Select 9
  V Views                  QK DB/QUICKCHANGE Management 10
  P Plans
  K Packages
  L Aliases
  R Procedures
  G Storage Groups        SQL Dynamic SQL 13
2 Z Authorizations

Global Commands:
  Q IDF Query 11
  - DB2 commands 12

Extract ID ==> DB2 3      Last Extract was run on 07/06/99 at 14:37
                          Version: 500 Maint. Level: 9502 PSP: 0
----- (C) Copyright CANDLE Corp. 1993 - 1999 -----

```

---

## Sources for options on the !DB/WORKBENCH Primary Menu

The following list shows the sources of information for options on the Primary Menu.

- 1** The section “Displaying Data” on page 127 or the section “Working with Data” on page 233
- 2** The chapter “Using Authorizations to Manage the System” in *!DB/WORKBENCH Advanced User's Guide*
- 3** The unit “Prerequisites and Guidelines for Accessing !DB/WORKBENCH” on page 55, the unit “Overview of the !DB/WORKBENCH Primary Menu” on page 86; and the chapter “Using Online Help with this Guide” on page 63
- 4** The unit “Using Selection Lists to Access Multiple !DB/WORKBENCH Sessions” on page 107
- 5** The chapter “Using the DSNZPARMs Facility” in *!DB/WORKBENCH Advanced User's Guide*
- 6** The chapter “Using the DASD Estimators” in *!DB/WORKBENCH Advanced User's Guide*
- 7** The section “Creating Objects” in *!DB/WORKBENCH Advanced User's Guide*
- 8** The chapter “!DB/WORKBENCH Housekeeping Options” in *!DB/WORKBENCH Advanced User's Guide*
- 9** The unit “Overview of the !DB/WORKBENCH Primary Menu” on page 86 and “Using Online Help with this Guide” on page 63
- 10** The unit “Accessing !DB/QUICKCHANGE” on page 262
- 11** The chapter “Displaying Data from the DB2 Catalog” on page 213
- 12** The section “Using SQL and DB2” in *!DB/WORKBENCH Advanced User's Guide*
- 13** The chapter “Using the Dynamic SQL Facility in !DB/WORKBENCH” in *!DB/WORKBENCH Advanced User's Guide*



## Finding Quick-Reference Style Information

---

### Overview

This unit covers sources to use if you prefer quick reference style information.

---

### Quick reference on commands and selects

The section “Quick Start” in *!DB/WORKBENCH Reference Manual* contains these materials on commands and selects.

Information You Want	Source to Use
Brief explanation of a command or select	“Dictionary of Commands and Selects for Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i>
Object list panels that support the command or select	“Commands and Selects Available from Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i>
Commands and selects that display panels that provide additional functions	“Summary of Methods for Display” in <i>!DB/WORKBENCH Reference Manual</i>

---

**Quick reference on filtering**

The section “Quick Start” in *!DB/WORKBENCH Reference Manual* contains these materials on filters.

<b>Information You Want</b>	<b>Source to Use</b>
Types of filters available	“Methods for Filters—Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i>
Object list panels that support the filter	“Filters Available from Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i>
Authorizations panels that support filters	“Methods for Filters—Authorizations” in <i>!DB/WORKBENCH Reference Manual</i>

---

**Quick reference on sorts**

The section “Quick Start” in *!DB/WORKBENCH Reference Manual* contains these materials on sorts.

<b>Information You Want</b>	<b>Source to Use</b>
Types of sorts available	“Methods for Sorting” in <i>!DB/WORKBENCH Reference Manual</i>
Object list panels that support the filter	“Sorts Available from Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i>

---

**Quick reference on objects and the extract or the DB2 catalog**

The section “Quick Start” in *!DB/WORKBENCH Reference Manual* contains these materials on displaying objects from the DB2 extract or the DB2 catalog.

<b>Information You Want</b>	<b>Source to Use</b>
Methods you can use to display different objects	“Summary of Methods for Display” in <i>!DB/WORKBENCH Reference Manual</i>
Objects displayed from the extract or DB2 catalog	“Data Available from Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i>
Objects displayed by commands and selects	“Displaying Data from the DB2 Catalog” on page 213

---

**Quick reference for advanced operations**

The section “Quick Start” in *!DB/WORKBENCH Reference Manual* contains these materials on advanced operations.

<b>Information You Want</b>	<b>Source to Use</b>
Batch processing	“Online Commands and Selects Available in Batch” in <i>!DB/WORKBENCH Reference Manual</i>
Creating or altering objects	“Values Used When Creating or Altering Objects” in <i>!DB/WORKBENCH Reference Manual</i>

## Finding Sources When You Begin to Use !DB/WORKBENCH

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### Overview

This unit lists sources if you are using !DB/WORKBENCH for the first time.

---

### Information if you are a new user of !DB/WORKBENCH

If you have never used !DB/WORKBENCH before, review the chart for sources that are available to help you use the product successfully while you increase your experience.

Information You Want	Source to Use
Detailed instructions for beginning to use !DB/WORKBENCH	The section with the tab “Introducing Fundamentals” on page 79
Introduction to aids within !DB/WORKBENCH that can help you access lists of functions available on an object list panel	The chapter “Using Selection Lists from Object List Panels” on page 99
Quick reference information such as brief definitions of commands and selects and charts showing the commands and selects available on object list panels	The chapters in <i>!DB/WORKBENCH Reference Manual</i> : <ul style="list-style-type: none"> <li>● “Commands and Selects Available from Object List Panels”</li> <li>● “Dictionary of Commands and Selects for Object List Panels”</li> </ul>

### Organization of the guide if you are a new user of !DB/WORKBENCH

Although you can use the guide in any order that matches your needs, many sections have as a prerequisite that you be familiar with displaying data using !DB/WORKBENCH. Because of the background that the section “Displaying Data” on page 127 contains, you can increase your speed in using other sections if you use the section “Displaying Data” after you complete the section “Introducing Fundamentals” on page 79. Both of the sections are meant to be used while you work with !DB/WORKBENCH.

If you start a chapter and decide you have missed essential background, see the introductory pages of the chapter, which include reminders (with page numbers) of essential background covered earlier in the guide.

---

**Commands, selects, and procedures that have values to enter**

If a command or select (such as the ones that generate ALTER or BIND statements) or a procedure (such as the procedure required when using the Create Menu) requires that you enter values, the guide lists the values that are prerequisite at the beginning of the information for the command, select, or procedure. In this way, you do not access a function and then discover you have not determined all the values needed for your system.

The settings and ranges of numbers required for fields in !DB/WORKBENCH are the values used in DB2. With !DB/WORKBENCH, you can see the values possible in the field by typing **HELP** on the command line and pressing Enter, or by pressing the appropriate function key. (If you are creating or altering data, you can also plan all values needed by using the chapter “Values Used When Creating or Altering Objects” in *!DB/WORKBENCH Reference Manual*.)

## Finding Sources If You Have Used !DB/WORKBENCH Before

### Overview

This unit lists sources if you have used !DB/WORKBENCH before and are looking for devices to increase your productivity.

### Information if you are an experienced user of !DB/WORKBENCH

If you are an experienced user of !DB/WORKBENCH, review the chart for reminders of aids to productivity available with the guide or online Help.

Task You Want to Perform	Source to Use
Locate prerequisites and procedures for a specific command, select, or procedure	Table of contents for the guide Index for the guide
Locate the values accepted by !DB/WORKBENCH when you create or alter data	Online Help for the menu or panel The chapter “Values Used When Creating or Altering Objects” in <i>!DB/WORKBENCH Reference Manual</i> (The chapter also lists defaults used by !DB/WORKBENCH.)
Locate the values accepted by !DB/WORKBENCH on a specific menu or panel	Online Help for the menu or panel
Review the filters available in !DB/WORKBENCH to determine the best way to display specific objects or authorizations	The chapters in <i>!DB/WORKBENCH Reference Manual</i> <ul style="list-style-type: none"> <li>● For objects, chapter “Methods for Filters—Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i></li> <li>● For authorizations, chapter “Methods for Filters—Authorizations” in <i>!DB/WORKBENCH Reference Manual</i></li> </ul>

---

**Information if you are an experienced user of !DB/WORKBENCH (continued)**

If you are an experienced user of !DB/WORKBENCH, review the chart for reminders of aids to productivity available with the guide or online Help.

<b>Task You Want to Perform</b>	<b>Source to Use</b>
Review the availability of commands, selects, filters, or sorts on object list panels (for example, if you are planning macros)	The titles of chapters listed in the table of contents
Use and develop macros	“Using !DB/WORKBENCH Macros” on page 321
Use and develop batch programs	“Introduction to !DB/WORKBENCH JCL and Batch” in <i>!DB/WORKBENCH Advanced User's Guide</i>

## An Introduction for Finding Sources to Specific Tasks

---

### Overview

This unit introduces a series of units on tasks that are commonly performed when using !DB/WORKBENCH.

---

### Background

The tasks listed do not represent all of the information available in the guide and online Help or all of the possible functions in !DB/WORKBENCH. They do, however, provide an introduction to functions and to the support for these functions provided by the guide and online Help.

If you want to perform a task that is not listed in these units, see either of these devices:

- The table of contents in the front of the book
  - The index in the back of the book
- 

### Tasks covered in subsequent units

These tasks are covered in the subsequent units:

- “Finding Sources for Displaying Data” on page 41
- “Finding Sources about Aids to Productivity” on page 46
- “Finding Sources on Generating Statements” on page 43
- “Finding Sources for Access to Functions and Products” on page 47
- “Finding Sources for Managing the System” on page 48
- “Finding Sources to Resolve Problems” on page 50



## Finding Sources for Displaying Data

---

### Overview

This unit provides sources of information for tasks commonly performed when displaying data. (You can also use the book table of contents or the index as a way to determine other sources for displaying data.)

---

### Displaying data

Review the chart for sources of information about displaying data in this guide and with online Help.

Task You Want to Perform	Source to Use
Interpret the objects displayed on the object list panels	Online Help for the specific panel The chapter “Overview of Object List Panels” on page 145
	The chapter “Overview of Object List Panels” on page 145
Manage the display of objects and of information about objects	The chapter “Methods for Displaying Data” on page 169 The chapters in <i>!DB/WORKBENCH Reference Manual</i> : <ul style="list-style-type: none"> <li>● “Methods for Sorting”</li> <li>● “Sorts Available from Object List Panels”</li> <li>● “Commands and Selects Available from Object List Panels”</li> <li>● “Dictionary of Commands and Selects for Object List Panels”</li> </ul>
Use sorting to organize the display based on criteria you enter	The unit “Using SORT Commands” on page 123 The chapters in <i>!DB/WORKBENCH Reference Manual</i> : <ul style="list-style-type: none"> <li>● “Sorts Available from Object List Panels”</li> <li>● “Methods for Sorting”</li> </ul>

---

**Displaying data (continued)**

This chart continues the sources of information about displaying data in this guide and with online Help.

<b>Task You Want to Perform</b>	<b>Source to Use</b>
Display a subset of the objects based on criteria you enter	The chapter “Filtering Object Lists” on page 191 The unit “Filters Available from Object List Panels” on page 57
Display referential data	The unit “Display of Information for Tables with Referential Data” on page 189

## Finding Sources on Generating Statements

---

### Overview

This unit provides sources for common tasks required when generating statements (such as ALTER, BIND, CREATE, LOAD DATA, and REBIND statements). It also includes information about two types of statements—ALTER and CREATE. (You can also use the book table of contents or the index to locate instructions for a specific statement.)

---

### Generating statements

!DB/WORKBENCH generates statements for a variety of DB2 functions. You generate the statements by using a command or select with the object; you do not have to type extensive text.

Task You Want to Perform	Source to Use
Review a list of all statements that you can generate with !DB/WORKBENCH and locate instructions for generating the statements	The unit “Generating Statements from an Object List Panel” on page 243
Review instructions for such tasks as invoking, printing, or accumulating statements you have generated	The chapter “Introduction to Operations on Data” on page 235

---

**Generating CREATE or ALTER statements**

Several options exist when you create or alter data. The chapter “Values Used When Creating or Altering Objects” in *!DB/WORKBENCH Reference Manual* is applicable to all options.

<b>Task You Want to Perform</b>	<b>Source to Use</b>
Alter objects with referential data	The chapter “Using ALTER Commands and Selects” on page 295 The unit “Generating ALTER Statements to Control Referential Integrity” on page 280
Alter objects displayed on the object list panel	The chapter “Using ALTER Commands and Selects” on page 295
Create objects using objects displayed on the object list panel as a model	The chapter “Methods for Generating Statements for Objects” on page 277
Create objects by a variety of methods and set up required VSAM datasets	The section “Creating Objects” in <i>!DB/WORKBENCH Advanced User's Guide</i>

## Finding Sources for Referential Data

---

### Overview

This unit provides sources of information for accessing and using referential (RI) data.

---

### Methods for working with RI data

With !DB/WORKBENCH, you have these options for working with RI data.

Task You Want to Perform	Source to Use
Alter objects with referential data	The chapter “Using ALTER Commands and Selects” on page 295  The unit “Generating ALTER Statements to Control Referential Integrity” on page 280
Display referential data	The unit “Display of Information for Tables with Referential Data” on page 189
Use utilities with referential data	The chapter “Accessing RI Data to Use with Utilities” in <i>!DB/WORKBENCH Advanced User's Guide</i>
Run a new extract with referential data	The chapter “!DB/WORKBENCH Housekeeping Options” in <i>!DB/WORKBENCH Advanced User's Guide</i> (Automatically included as part of the !DB/WORKBENCH Catalog Extract.)

## Finding Sources about Aids to Productivity

---

### Overview

This unit provides sources of information for methods to increase your productivity.

---

### Increasing speed of access

With !DB/WORKBENCH, you can use quick access to increase your speed of access to functions.

Quick Access You Want to Use	Source to Use
Options on the !DB/WORKBENCH Primary Menu	The unit “Methods to Access Selections from the Primary Menu” on page 89
Selects on an object list panel	The unit “Methods to Use Selects for Object List Panels” on page 93
Sorts	The unit “Using SORT Commands” on page 123
Utilities	The chapter “Introduction to DB2 Utilities and Options” in <i>!DB/WORKBENCH Advanced User's Guide</i>

---

### Increasing productivity

With !DB/WORKBENCH, you can avoid repetitive tasks online and offline.

Task You Want to Perform	Source to Use
Build macros to perform a series of tasks online	The chapter “Using !DB/WORKBENCH Macros” on page 321
Create batch programs to perform a series of tasks offline	The section “Running Batch and Using JCL” in <i>!DB/WORKBENCH Advanced User's Guide</i>

## Finding Sources for Access to Functions and Products

---

### Overview

You can access the !DB/QUICKCHANGE product and certain functions outside of !DB/WORKBENCH without leaving !DB/WORKBENCH. This unit covers sources of information for these types of access.

---

### Accessing !DB/QUICKCHANGE from !DB/WORKBENCH

You can access !DB/QUICKCHANGE by entering a select on the object list panel. For information about accessing !DB/QUICKCHANGE, see the unit “Accessing !DB/QUICKCHANGE” on page 262.

---

### Accessing functions outside of !DB/WORKBENCH

Within !DB/WORKBENCH, you can access catalog data and functions that allow you to change the catalog data (once you invoke DB2 to execute the statements).

Functions You Want to Access	Source to Use
DB2 catalog data	The chapter “Displaying Data from the DB2 Catalog” on page 213
DB2 commands	The chapter “Using DB2 Commands in !DB/WORKBENCH” in <i>!DB/WORKBENCH Advanced User's Guide</i>  For DISP, START, WSTRT, WSTOP, and STOP only, the unit “Generating DB2 Commands from the Object List Panel” on page 266
DB2 utilities	The section “Running Utilities” in <i>!DB/WORKBENCH Advanced User's Guide</i>
SQL	The chapter “Using the Dynamic SQL Facility in !DB/WORKBENCH” in <i>!DB/WORKBENCH Advanced User's Guide</i>

## Finding Sources for Managing the System

---

### Overview

This unit contains sources for using and managing the extract and the extract ID and other functions available with !DB/WORKBENCH. (You can also use the table of contents or the index to locate other information about managing your system.)

---

### Using the extract ID and the extract

!DB/WORKBENCH uses an extract of the DB2 catalog to provide speed in access to data. The chart lists several tasks that you can perform with extracts.

The last two tasks in the chart require authorizations.

<b>Task You Want to Perform</b>	<b>Source to Use</b>
Change your extract ID by using the ? option available on the !DB/WORKBENCH Primary Menu	Online Help from the Primary Menu
	The unit “Overview of the !DB/WORKBENCH Primary Menu” on page 86
Examine information about the extract in !DB/WORKBENCH	The unit “Prerequisites and Guidelines for Accessing !DB/WORKBENCH” on page 55
Run a new extract	The chapter “!DB/WORKBENCH Housekeeping Options” in <i>!DB/WORKBENCH Advanced User's Guide</i>
Select and display the extract history	The chapter “!DB/WORKBENCH Housekeeping Options” in <i>!DB/WORKBENCH Advanced User's Guide</i>



---

**Managing the system**

The chart lists several tasks that you can perform with !DB/WORKBENCH. (The last four tasks require authorizations.)

<b>Task You Want to Perform</b>	<b>Source to Use</b>
Display your authorization for an object	Online Help (Access the online Help from the selection list by entering ? in the select field for an object. Then, choose the word “Authorizations.”)
	The unit “Methods of Display Available on More than One Panel” on page 173
Display and use the Authorizations Menu	The chapter “Using Authorizations to Manage the System” in <i>!DB/WORKBENCH Advanced User's Guide</i>
Display and use DSNZPARMs	The chapter “Using the DSNZPARMs Facility” in <i>!DB/WORKBENCH Advanced User's Guide</i>
Display and use profiles	The chapter “!DB/WORKBENCH Housekeeping Options” in <i>!DB/WORKBENCH Advanced User's Guide</i>
Update authorization information	The chapter “!DB/WORKBENCH Housekeeping Options” in <i>!DB/WORKBENCH Advanced User's Guide</i>

---

**Using statistical data in the tables in the STATDBAS table space**

The chart lists the source to use for information on using the statistical data and managing the tables in the STATDBAS table space.

<b>Task You Want to Perform</b>	<b>Source to Use</b>
Use statistical data available in the STATDBAS table space and manage the size of the tables in the table space	The chapter “Managing Statistics in the STATDBAS Table Space” in <i>!DB/WORKBENCH Advanced User's Guide</i>

## Finding Sources to Resolve Problems

---

### Overview

This unit lists tasks to resolve a problem that may occur when using !DB/WORKBENCH.

---

### Resolving problems

The chart lists sources for solutions to problems. (Solutions using the Housekeeping options can require authorization.)

<b>Task You Want to Perform</b>	<b>Source to Use</b>
Display additional information about an error message	The unit “Displaying Online Information about Messages” on page 120  The chapter “Problem Resolution” in <i>!DB/WORKBENCH Reference Manual</i>
Display online Help	The unit “Displaying Online Help Information” on page 119
Display the Log PDS	The chapter “!DB/WORKBENCH Housekeeping Options” in <i>!DB/WORKBENCH Advanced User's Guide</i>
Display panel IDs	The unit “Display of Additional Information” on page 121
Recover from an error in using selects	The unit “Displaying Online Help Information” on page 119
Restore an old copy of the DB2 catalog (Lazarus facility)	The chapter “!DB/WORKBENCH Housekeeping Options” <i>!DB/WORKBENCH Advanced User's Guide</i>
Review instructions for contacting Candle Customer Support	The chapter “Problem Resolution” in <i>!DB/WORKBENCH Reference Manual</i>
Review instructions for using the Log PDS	The chapter “Problem Resolution” in <i>!DB/WORKBENCH Reference Manual</i>

---

**Additional resources for resolving problems**

The *!DB/WORKBENCH Reference Manual* contains these additional resources:

- “ABENDS with !DB/WORKBENCH”
- “Error Messages with !DB/WORKBENCH”



## Chapter 2. Accessing and Exiting !DB/WORKBENCH

---

### Introduction

This chapter contains information on prerequisites and procedures for accessing !DB/WORKBENCH, including instructions for accessing !DB/WORKBENCH from OMEGAMON II for DB2. It also contains instructions for exiting !DB/WORKBENCH.

### Chapter contents

Overview of the Chapter .....	54
Prerequisites and Guidelines for Accessing !DB/WORKBENCH .....	55
Accessing !DB/WORKBENCH Directly .....	56
Accessing !DB/WORKBENCH from the Product Selection Menu .....	57
Accessing !DB/WORKBENCH from OMEGAMON II .....	58
Accessing !DB/WORKBENCH from the OMEGAMON II CUA Interface .....	60
Exiting !DB/WORKBENCH .....	62

## Overview of the Chapter

### Overview

This chapter contains instructions for accessing !DB/WORKBENCH. You can access !DB/WORKBENCH in the following ways:

- By direct command
- From the !DB/Tools product selection menu
- From the CUA interface of OMEGAMON II
- From the primary option menu for OMEGAMON II

### Finding the information you need

In the left column, locate the task appropriate for you. Then locate the page numbers of the units that you need for your task.

	Prerequisites	!DB/WORKBENCH	Product Selection Menu	OMEGAMON	OMEGAMON (CUA)	Exiting
	p.55	p.58	p.56	p.57	p.60	p.62
Access !DB/WORKBENCH directly	√	√				
Access !DB/WORKBENCH from the Product Selection Menu	√		√			√
Access !DB/WORKBENCH from OMEGAMON II for DB2	√			√		
Access !DB/WORKBENCH from the CUA interface for OMEGAMON II for DB2	√				√	
Exit !DB/WORKBENCH						√

## Prerequisites and Guidelines for Accessing !DB/WORKBENCH

---

### Overview

This unit includes prerequisites and guidelines for accessing !DB/WORKBENCH directly or from OMEGAMON II for DB2.

---

### Prerequisites

Before you follow the instructions in this chapter, be sure that the !DB/Tools CLIST library is allocated in the SYSPROC concatenation. If you plan to access !DB/WORKBENCH from OMEGAMON II for DB2, be sure the CLISTs for OMEGAMON II for DB2 are also allocated in the SYSPROC concatenation. For more information about installation of !DB/Tools, see the *!DB/Tools Installation and Customization Guide*.

You must also have the required levels of authority for using !DB/WORKBENCH, such as the ECP and ECX authorizations. For more information, see appendix D of the *!DB/Tools Installation and Customization Guide*.

---

### Extract ID information

If you are accessing !DB/WORKBENCH, you need to know the extract ID for the database subsystem. (The extract ID is the logical DB2 subsystem ID. You can create the extract ID either at installation or by using the Housekeeping option.) For information about installation and extract procedures, see the *!DB/Tools Installation and Customization Guide*.

---

### A reminder about extracts and !DB/WORKBENCH

Extracts for !DB/WORKBENCH differ from extracts for !DB/EXPLAIN. !DB/EXPLAIN allows multiple extracts and permits masking. In contrast !DB/WORKBENCH,

- supports only one extract, the extract for the DB2 subsystem.
  - does not permit masking to limit the DB2 catalog data (such as, the plans or packages selected).
- 

### A reminder about using a CLIST

For improved performance when accessing a CLIST, use a “%” in front of a CLIST name.

---

## Accessing !DB/WORKBENCH Directly

---

### Overview

Use this unit if you do not have any of the other !DB/Tools or if you want to access !DB/WORKBENCH without using the !DB/Tools Product Selection Menu. Be sure you have also reviewed the unit “Prerequisites and Guidelines for Accessing !DB/WORKBENCH” on page 55.

---

### Accessing the product directly

Follow these steps to access !DB/WORKBENCH directly.

Step	Action
1	Type the appropriate value on the command line. <ul style="list-style-type: none"> <li>● If you are on the TSO Command Processor panel (option 6 from the standard ISPF/PDF primary option menu), type <b>%KTW</b>.</li> <li>● If you are on any other ISPF panel, type <b>TSO %KTW</b>.</li> </ul>
2	Press Enter. <b>Result:</b> The system displays the !DB/WORKBENCH Primary Menu.



## Accessing !DB/WORKBENCH from the Product Selection Menu

---

### Overview

Use this unit if you want to access !DB/WORKBENCH using the Candle !DB/Tools Product Selection Menu. Be sure you have also reviewed the unit “Prerequisites and Guidelines for Accessing !DB/WORKBENCH” on page 55.

---

### Accessing !DB/WORKBENCH from the Product Selection Menu

Follow these steps to access !DB/WORKBENCH using the Candle !DB/Tools Product Selection Menu.

Step	Action
1	Type the appropriate value on the command line: <ul style="list-style-type: none"> <li>● If you are on the TSO Command Processor panel (option 6 from the standard ISPF/PDF primary option menu), type <b>%KTC</b></li> <li>● If you are on any other ISPF panel, type <b>TSO %KTC</b></li> </ul>
2	Press Enter. <b>Result:</b> The system displays the Candle !DB/Tools Product Selection Menu.
3	Type <b>1</b> 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. <b>Result:</b> The system displays the !DB/WORKBENCH Primary Menu.

## Accessing !DB/WORKBENCH from OMEGAMON II

---

### Overview

Use this unit if you want to access !DB/WORKBENCH and you are currently using OMEGAMON II for DB2 under ISPF. Be sure you have also reviewed the unit “Prerequisites and Guidelines for Accessing !DB/WORKBENCH” on page 55.

---

### Requirements for accessing !DB/WORKBENCH from OMEGAMON II for DB2 under ISPF

To access !DB/WORKBENCH from the primary option menu for OMEGAMON II for DB2, make sure that the CLIST you invoked from option 3 on the primary option menu is in an allocated CLIST library. If this CLIST is not allocated, the system displays a Help panel instead of the !DB/Tools Product Selection Menu.

To correct the problem, be sure the CLIST is allocated so it is accessible to OMEGAMON II for DB2. If necessary, see Appendix C of the *!DB/Tools Installation and Customization Guide* for more information about the CLIST that OMEGAMON II for DB2 uses when you use option 3 on the primary option menu.

---

### Accessing !DB/WORKBENCH from OMEGAMON II for DB2 under ISPF

Follow these steps to access !DB/WORKBENCH if you are currently using OMEGAMON II for DB2 under ISPF.

Step	Action
1	On the primary options menu for OMEGAMON II for DB2, type <b>3</b> in the OPTION field.
2	Press Enter. <b>Result:</b> The system displays the !DB/Tools Product Selection Menu.
3	Type <b>1</b> 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. <b>Result:</b> The system displays the !DB/WORKBENCH Primary Menu.

### **If a problem occurs when accessing from the primary option menu**

If you access !DB/WORKBENCH from the primary option menu and if the system displays a help panel instead of the !DB/Tools Product Selection Menu, see the appendix *Requirements for Access to !DB/Tools From OMEGAMON II for DB2* in the *!DB/Tools Installation and Customization Guide*.

## Accessing !DB/WORKBENCH from the OMEGAMON II CUA Interface

---

### Overview

Use this unit if you want to access !DB/WORKBENCH and you are currently using the CUA interface for OMEGAMON II for DB2. Be sure you have also reviewed the unit “Prerequisites and Guidelines for Accessing !DB/WORKBENCH” on page 55.

---

### Requirements for accessing !DB/WORKBENCH from the CUA interface

If you are using the default function key for the CUA/TSO option available from the CUA interface of OMEGAMON II for DB2, you can use the default function key to display a pop-up to log in to TSO and then access ISPF.

For general information about the CUA interface of OMEGAMON II for DB2, see the *OMEGAMON II for DB2 User's Guide*.

---

### Accessing !DB/WORKBENCH from the CUA interface for OMEGAMON II for DB2

After you have logged into TSO and accessed ISPF, follow these steps to access !DB/WORKBENCH.

Step	Action
1	Type the appropriate value on the command line: <ul style="list-style-type: none"> <li>● If you are on the TSO Command Processor panel (option 6 from the standard ISPF/PDF primary option menu), type <b>%KTC</b></li> <li>● If you are on any other ISPF panel, type <b>TSO %KTC</b></li> </ul>
2	Press Enter. <b>Result:</b> The system displays the Candle !DB/Tools Product Selection Menu.
3	Type <b>1</b> 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. <b>Result:</b> The system displays the !DB/WORKBENCH Primary Menu.

---

## **Toggling between !DB/WORKBENCH and OMEGAMON II for DB2**

If you access !DB/WORKBENCH using this method, you can use the default function key while in !DB/WORKBENCH to toggle between the OMEGAMON II and !DB/WORKBENCH sessions.

## Exiting !DB/WORKBENCH

---

### Defiitions for the RETURN command

You can use the !DB/WORKBENCH configuration options (available in Housekeeping) to control the operation of the RETURN command in a user's profile. You can define the RETURN command to function in two ways:

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

---

### Exiting the product

The following procedure assumes that your user configuration has RETURN defined to exit !DB/WORKBENCH.

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

Step	Action
1	Return to the Primary Menu for !DB/WORKBENCH.
2	Press End. <b>Result:</b> The result varies based on your previous action: <ul style="list-style-type: none"> <li>● If you accessed !DB/WORKBENCH from OMEGAMON II for DB2, the system ends all other sessions and returns to OMEGAMON II (either the CUA panel or the primary options menu for OMEGAMON II).</li> <li>● If you accessed !DB/WORKBENCH directly, the system exits !DB/WORKBENCH.</li> </ul>

## Chapter 3. Using Online Help with this Guide

---

### Introduction

This chapter explains how to use online Help and describes the general and specific information available from Help. It also compares the information available in online Help with the information available in this guide.

### Chapter contents

Overview of the Chapter . . . . .	64
Using Online Help for !DB/WORKBENCH . . . . .	65
Online Help and Types of Information . . . . .	68
Selecting the Best Source of Information for Your Needs . . . . .	70
Obtaining Information about Accessing Multiple Sessions . . . . .	72
Obtaining Information about Commands and Selects . . . . .	73
Obtaining Information about Filtering . . . . .	76

## Overview of the Chapter

### Organization of information in the chapter

This chapter contains instructions for using the online Help. It gives an overview of the types of general information that Help provides about such topics as commands, selects, and filters. This chapter also shows how to use the supporting devices in the Help, such as the index to Help panels.

The chapter shows how you can select the information you need in the form (whether online or in this guide) you prefer.

### Organization of information and your needs

Review the chart to select information for the task you want to perform.

	Using Help	Information	Introduction	Windows	Commands/selects	Filters
	p.65	p.68	p.70	p.72	p.73	p.76
Review instructions for accessing Help and using a typical Help panel	√					
Review types of online information		√				
Determine when to use online Help and this guide			√			
Select sources for accessing multiple sessions				√		
Select sources for commands and selects					√	
Select sources for filtering						√



## Using Online Help for !DB/WORKBENCH

---

### Overview

This unit provides an overview of using the online Help for !DB/WORKBENCH. It describes the elements of a Help panel and explains how to access additional Help information from a Help panel.

---

### Background about !DB/WORKBENCH and online Help

In !DB/WORKBENCH, you can use online Help to access general information (such as how to use filtering) and specific information (such as the contents of a field on the Authorization panel for databases).

---

### Accessing online Help for a menu or panel

Follow this step to access online Help.

Step	Action
1	On a menu or panel, type <b>HELP</b> on the command line and press Enter, or press the appropriate function key.  <b>Result:</b> The system displays the Help panel for the menu or panel.

## Elements of an online Help panel in !DB/WORKBENCH

The illustration shows frequently used elements of a Help panel.

```

Cmd ==>

----- HELP FOR DATABASE SELECTS -----
Press END to return, ENTER to continue
or TAB to highlighted text and press ENTER to display more information.

OUT DDL (O)      Use this select to generate the DDL control statements
                 necessary to create the listed objects. The system displays
                 the PROCESS MEMBER MENU.

PLANS (P)        Use this select to list the plans associated with the
                 database. The system displays the PLANS OBJECT LIST
                 panel.

QUERY (Q)        Use this select to perform an interactive query against the
                 DB2 catalog for the database. The system displays the
                 INTERACTIVE DISPLAY MENU.

TABLE SPACES (S) Use this select to display the table spaces associated with
                 this database.

-----
GLOSSARY  INDEX  COMMANDS  FILTERS  WINDOWS  SELECTS  <-PREV  MORE->
                 4                5                6

```

- 1** Title of the topic for the Help panel
- 2** Directions for using the Help panel
- 3** A reference phrase you can tab to and select for more information (A reference phrase appears in highlighted capital letters.)
- 4** Options for information about !DB/WORKBENCH
- 5** Selection to display the previous Help panel on the topic (if any)
- 6** Selection to display the next Help panel on the topic (if any)

---

## Displaying panels from the Help panel

The chart lists options for displaying panels from a Help panel.

<b>Task You Want to Perform</b>	<b>Action</b>
Display the previous Help panel	Place the cursor on the word <i>PREV</i> and press Enter.
Display the next Help panel	Press Enter.
	Place the cursor on the word <i>MORE</i> and press Enter.
Display the !DB/WORKBENCH menu or panel that you were using when you first displayed a Help panel	Type <b>END</b> on the command line and press Enter, or press the appropriate function key.

*!DB/WORKBENCH Reference Manual.*

## Online Help and Types of Information

---

### Overview

This unit describes specific and general information available with online Help.

---

### Specific product information and Help panels

The best source for specific information about a menu or panel is the online Help. For example, if you are entering values on a menu or panel, its associated Help panel will show the values that are accepted in the fields. Also, if you want more information about fields on an object list panel, the associated online Help panel for the object list panel provides the best immediate source.

---

### About the online glossary and index of Help panels

The chart briefly describes the contents and use of the online glossary and index of Help panels.

Items on Panel	Description	Additional Information
GLOSSARY	List of basic terms, each preceded by a keyword (a letter and a number)	You can display <ul style="list-style-type: none"> <li>● a definition (by entering a keyword on the command line)</li> <li>● another part of the list (by entering the first letter of the term you want)</li> </ul>
INDEX	A list of the topics covered by online Help	You can display <ul style="list-style-type: none"> <li>● a Help panel for a topic (by positioning the cursor on the item and pressing Enter)</li> <li>● another part of the list (by pressing Enter to page through the index)</li> </ul>

---

### If you prefer a printed glossary

If you prefer to use a printed glossary instead of an online glossary, a printed version of the glossary is provided in

---

### About the general information available on Help panels

The chart briefly describes the general information available from each Help panel about commands, filters, windows, and selects.

Items on Panel	Description	Additional Information
COMMANDS	Shows all commands available with !DB/WORKBENCH	If you select the item <i>COMMAND TO PANELS</i> , the system displays charts showing available commands. (You can also access information about each command.)
FILTERS	Shows how to use filters and a list of the filters for all panels	
WINDOWS	Shows how to access multiple sessions in !DB/WORKBENCH	
SELECTS	Shows all selects available with !DB/WORKBENCH	If you select the item <i>SELECT TO PANELS</i> , the system displays charts showing available selects. (You can also access information about each select.)

## Selecting the Best Source of Information for Your Needs

---

### Overview

This unit helps you to determine whether online Help or the guide is the best source of information for your needs.

---

### Sources to perform specific tasks

If you want to perform a specific task such as binding packages or plans, the best source of information varies. Review the chart for examples of the source to use.

Information You Want	Source to Use
Guidance on a specific value to enter in a field on a menu or panel	Online Help for the menu or panel
Prerequisites for using commands, selects, utilities, and procedures	This guide
Directions and instructions for a specific menu or panel	Online Help
Overview of methods that you can use to perform tasks and of the procedures you perform	This guide

---

### Sources to perform general tasks

If you want to perform a general task that combines different functions, the best source is the guide. For example, the guide includes these chapters:

- “Using !DB/WORKBENCH Macros” on page 321
- “Introduction to !DB/WORKBENCH JCL and Batch” in *!DB/WORKBENCH Advanced User's Guide*

---

**Source to provide an overview**

If you want background or an overview of choices or of the system, the best source is the guide. The chart provides examples of these overviews.

<b>Type of Overview</b>	<b>Example in Guide</b>
How !DB/WORKBENCH displays objects	The chapter “Introduction to Display” on page 129
The object list panels accessible from the !DB/WORKBENCH Primary Menu	The chapter “Overview of Object List Panels” on page 145
The commands and selects that generate statements (such as ALTER, BIND, or CREATE statements)	The chapter “Introduction to Operations on Data” on page 235
What selection lists are available within !DB/WORKBENCH	The chapter “Using Selection Lists from Object List Panels” on page 99

## Obtaining Information about Accessing Multiple Sessions

---

### Overview

This unit lists the two sources of information for accessing multiple sessions.

---

### Sources for accessing multiple sessions

The chart lists sources to use if you want to access multiple sessions. (The difference between the two sources is that the guide contains greater detail and examples.)

Information You Want	Source
Instructions for accessing multiple sessions with !DB/WORKBENCH	Online Help (by selecting WINDOWS from a Help panel)
	The unit “Using Selection Lists from Object List Panels” on page 99



## Obtaining Information about Commands and Selects

---

### Overview

This unit compares the sources available on using commands and selects. The unit includes details about what part of the Help to access for the information you want.

---

### Sources on how to use commands and selects

The chart identifies sources of information for using commands and selects.

Information You Want	Source
How to enter a command	Online Help (by selecting COMMANDS from a Help panel)
How to enter a select	Online Help (by selecting SELECTS from a Help panel)
How to enter commands and selects (including fast paths)	Units in the chapter “Using the Primary Menu and Object List Panels” on page 81
Which commands or selects display the objects you want	The chapter “Methods for Displaying Data” on page 169
Which commands or selects access the function or generate the statements you want	The chapter “Introduction to Operations on Data” on page 235
How to use commands and selects in macros	The chapter “Using !DB/WORKBENCH Macros” on page 321
How to enter a command	Online Help (by selecting COMMANDS from a Help panel)
How to enter a select	Online Help (by selecting SELECTS from a Help panel)
How to use commands in batch processing	The chapter “Command Dictionary for Batch” in <i>!DB/WORKBENCH Advanced User's Guide</i>

---

**Sources on definitions and availability of commands**

The chart identifies sources of information for the definitions and availability of commands.

<b>Information You Want</b>	<b>Source</b>
Definitions of all commands available on the object list panels accessible from the !DB/WORKBENCH Primary Menu	Online Help (by selecting COMMANDS from a Help panel)
	The chapter “Dictionary of Commands and Selects for Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i>
Definitions of commands available on a specific object list panel	Online Help (from the selection list displayed when you enter DO on the command line of an object list panel)
Availability of commands on the object list panels accessible from the !DB/WORKBENCH Primary Menu	Online Help (by selecting COMMANDS from any Help panel and then selecting the reference phrase <i>COMMAND TO PANELS</i> )
	The chapter “Commands and Selects Available from Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i>

---

**Sources on definitions and availability of selects**

The chart identifies sources of information about the definitions and availability of selects.

<b>Information You Want</b>	<b>Source</b>
Definitions of all selects available on the object list panels accessible from the !DB/WORKBENCH Primary Menu	Online Help (by selecting SELECTS from a Help panel)
	The chapter “Dictionary of Commands and Selects for Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i>
Definitions of selects available on a specific object list panel	Online Help (from the selection list displayed when you enter ? on the Select field on an object list panel)
Availability of selects on the object list panels accessible from the !DB/WORKBENCH Primary Menu	Online Help (by selecting SELECTS from any Help panel and then selecting the reference phrase <i>SELECT TO PANELS</i> )
	The chapter “Commands and Selects Available from Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i>

## Obtaining Information about Filtering

---

### Overview

The unit compares the sources available for using filters and for determining their definitions and availability. It explains what part of Help to access for the information you want.

---

### Sources on how to use filters

The chart identifies sources for using filters.

Information You Want	Source
How to use filters	Online Help (by selecting FILTERS from a Help panel)
	The chapter “Filtering Object Lists” on page 191
Examples of filters in macros	The chapter “Using !DB/WORKBENCH Macros” on page 321
Examples of filters in batch	The chapter “JCL for Utilities, Batch Jobs, and Extracts” in <i>!DB/WORKBENCH Advanced User's Guide</i>

---

**Sources on definitions and availability of filters**

The chart identifies sources to use for definitions and for lists showing availability of filters.

<b>Information You Want</b>	<b>Source</b>
Definitions of all filters (except for authorizations) available on the object list panels accessible from the !DB/WORKBENCH Primary Menu	Online Help (by selecting FILTERS from a Help panel and pressing Enter to page through the panels.)
Overview of all methods and values available for filtering (except authorizations)	The chapter “Methods for Filters—Authorizations” in <i>!DB/WORKBENCH Reference Manual</i>
Overview of all methods and values available for filtering authorizations	The chapter “Methods for Filters—Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i>
Availability of filters (except for authorizations) on the object list panel accessible from the !DB/WORKBENCH Primary Menu	The chapter “Filters Available from Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i>



# Introducing Fundamentals





# Chapter 4. Using the Primary Menu and Object List Panels

---

## Introduction

This chapter introduces you to the elements of the !DB/WORKBENCH Primary Menu and common methods of using the menu. It also contains an introduction to the elements of a panel and how to use typical object list panels.

## Chapter contents

About the Topics in This Section . . . . .	82
Overview of the Chapter . . . . .	84
Background Information for Using !DB/WORKBENCH . . . . .	85
Overview of the !DB/WORKBENCH Primary Menu . . . . .	86
Methods to Access Selections from the Primary Menu . . . . .	89
Overview of Object List Panels . . . . .	90
Commands for Working with the User PDS . . . . .	92
Methods to Use Selects for Object List Panels . . . . .	93
Methods to Use Commands for Object List Panels . . . . .	96
Commands and Selects and Object List Panels . . . . .	97
Methods to Recover from Errors in Processing . . . . .	98

## About the Topics in This Section

---

### Overview

This unit lists the sources of information you can consult to learn about the fundamentals for using !DB/WORKBENCH. It discussed the resources in this guide and in !DB/WORKBENCH online Help.

---

### Resources in this guide

This major section of the guide introduces you to the fundamentals for operating !DB/WORKBENCH. The chart directs you to the resources within the *Introducing Fundamentals* section. “Introducing Fundamentals.”

Information You Want	Resource Available
General information and procedures for using the !DB/WORKBENCH Primary Menu and the panels that list objects in the catalog extract	This chapter
Overview of selection lists and instructions for accessing the selection lists available in !DB/WORKBENCH (The selection lists list options available from the object list panel, such as commands, selects, filters, or sorts.)	“Using Selection Lists from Object List Panels” on page 99
A quick review of ISPF functions that are used frequently within !DB/WORKBENCH	“Using ISPF Facilities within !DB/WORKBENCH” on page 113

---

## Resources in the online Help

With !DB/WORKBENCH, the online lists of options and the online Help provide specific information that you need for the task you want to perform. For example, online Help provides information explaining how to use specific commands.

To access Help, type **HELP** on the command line and press Enter, or press the appropriate function key. The illustration shows the Help panel for the SORT commands.

```

Cmd ==>

----- HELP FOR SORTS -----
Press END to return, ENTER to continue
or TAB to highlighted text and press ENTER to display more information.

Description      This menu lists all of the sort options for the object list.

Column          Type the number in front of the column you want to sort
                against.

Order           If you want the objects in ascending order (A to Z and 1 to
                9), type A.

                If you want the objects in descending order (Z to A and 9 to
                1), type D.

-----
GLOSSARY  INDEX  COMMANDS  FILTERS  WINDOWS  SELECTS

```

---

## Resources available for quick reference

As you begin to use commands and selects, you can find these chapters useful as a quick reference: “Commands and Selects Available from Object List Panels” in *!DB/WORKBENCH Reference Manual* and “Dictionary of Commands and Selects for Object List Panels” in *!DB/WORKBENCH Reference Manual*.

## Overview of the Chapter

---

### Organization of information in the chapter

The chapter contains introductory information about the !DB/WORKBENCH Primary Menu and about typical object list panels. In both cases, the information is presented in this order:

- An illustration showing frequently used elements
- Information about methods for accessing selections available from the menu or panel

---

### Organization of information 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.

	Background	Primary Menu	Selection	Panel	Selects	Commands	Combination	Errors
	p.85	p.86	p.89	p.90	p.93	p.96	p.97	p.98
Use the !DB/WORKBENCH Primary Menu	√	√	√					
Use functions on an object list panel	√			√	√	√	√	
Apply a function to a specific object				√	√			
Apply a function to all objects				√		√		
Apply a function to a specific object and another function to all objects				√			√	
Review options for recovering from an error								√

## Background Information for Using !DB/WORKBENCH

---

### ISPF conventions and !DB/WORKBENCH

In most cases, !DB/WORKBENCH follows ISPF conventions. For example, !DB/WORKBENCH scrollable panels use a standard ISPF format.

!DB/WORKBENCH, however, does not follow all ISPF conventions. In most cases, with !DB/WORKBENCH, you do not need to press Tab to move to the next field because !DB/WORKBENCH automatically skips to the next field.

---

### Objects displayed by the system

When objects are displayed by the system, you may only see a portion of the entire DB2 system. Review the chart to determine the conditions that influence the display of information.

Condition	Information Displayed
If your installation has established a !DB/WORKBENCH exit or is using the exit supplied by Candle	Those objects that belong to the databases that you are allowed to see
If all databases are excluded	Message indicating that you cannot use !DB/WORKBENCH

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

---

### Speed of display of objects in the system

If you have a large system and want to display a list of all the objects in your system, !DB/WORKBENCH can display the list in the time it normally takes to switch from one ISPF panel to another. This speed is possible because these lists do not access DB2.

## Overview of the !DB/WORKBENCH Primary Menu

### Overview

This unit introduces the elements of the !DB/WORKBENCH Primary Menu and reviews the two methods to change the extract ID.

### Background about methods to change the extract ID online

If you want to change the extract ID, you have two choices:

- If you want to select from a list, type a ? in the Option field and press Enter.
- If you know the extract ID you want, you can type the ID of another extract in the Extract ID field and press Enter.

### Elements of the Primary Menu

The illustration shows frequently used elements of the primary menu.

```

1 PRIMARY MENU ----- DB/WORKBENCH --- DB2=2DB31----- 3
Cmd ==> 4                                     99/07/07 13:30
5
Option ==> 6                                (Use /"x" to establish a window) 7
  D Databases                                ZP DSNZPARM Information
  S Tablespaces                              ES Estimate Tablespace size
  T Tables                                   EX Estimate Indexspace size
  C Columns                                  CR Create new objects
  I Indexes                                  H Housekeeping options
9 A All                                     8 ? Display Subsystem Select
  V Views                                    11 QK DB/QUICKCHANGE Management
  P Plans
  K Packages
  L Aliases
  R Procedures
  G Storage Groups
  Z Authorizations
  Q IDF Query
  - DB2 commands
  SQL Dynamic SQL

  Global Commands:
  Q IDF Query
  - DB2 commands
  SQL Dynamic SQL

Extract ID ==> DB2 10                        Last Extract was run on 07/06/98 at 14:37
Version: 500 Maint. Level: 9502 PSP: 0
----- (C) Copyright CANDLE Corp. 1993 - 1999 -----
    
```

---

**Elements of the Primary Menu (continued)**

The list defines the frequently used elements of the primary menu.

- 1** Location for the title
- 2** Name of the DB2 subsystem that is current
- 3** Location for the display of short messages (if any)
- 4** Location for entry of an ISPF command
- 5** Location for the display of long messages (if any) displayed by pressing PF1 after a short message is displayed
- 6** Location for entry of the selection from the menu
- 7** Windowing instructions (For detailed instructions, see page 107.)
- 8** Option to use to display and select from available extract IDs
- 9** Available selections
- 10** Location for entry of the DB2 extract ID (You can either use the current extract ID or type the ID of another extract.)
- 11** Option to call !DB/QUICKCHANGE change management functionality or to restore a !DB/QUICKCHANGE session (if this product is installed)

### If you accidentally provide an incorrect extract ID

If you accidentally provide an incorrect extract ID in the field on the !DB/WORKBENCH Primary Menu, !DB/WORKBENCH displays a panel for the required data. If this occurs, follow these steps to display the list of available extract IDs so you can make a selection.

Step	Action
1	Type <b>END</b> on the command line and press Enter or press the appropriate function key. <b>Result:</b> !DB/WORKBENCH displays the !DB/WORKBENCH Primary Menu.
2	Type a <b>?</b> in the Option field.
3	Press Enter. <b>Result:</b> !DB/WORKBENCH displays the list of available extract IDs.



## Methods to Access Selections from the Primary Menu

---

### Overview

This unit contains information on methods to access selections from the primary menu. It includes these methods of making a selection:

- A single selection from the Primary Menu
- Simultaneous selections from the Primary Menu and a subsequent menu (quick access)

---

### Making a selection from the Primary Menu

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

Step	Action
1	Type the character for the selection you want in the Option field. <b>Example:</b> Type <b>H</b> to select Housekeeping options (Administrative Functions panel).
2	Press Enter.

---

### Making a selection from the Primary Menu and a subsequent menu (quick access)

Follow these steps to make a selection from the Primary Menu and simultaneously make a selection from the subsequent menu.

Step	Action
1	Type the character for the selection you want in the Option field, followed by a period (.), followed by the character for the selection on the second menu. <b>Example:</b> Type <b>H.1</b> to select Housekeeping options (Administrative Functions panel) and the Profile Data Administration panel.
2	Press Enter.

## Overview of Object List Panels

### Elements of a typical object list panel

Panels vary in design; however, the illustration shows frequently used elements of a typical object list panel.

```

1 DATABASES ----- DB/WORKBENCH -- 2 DB2=DB31----- 3 DATABASE 1 OF 172
4 Cmd ==> 5 Scroll ==> DATA

5
                                D A T A B A S E S
Cmds:  DO (Menu)  GM/NOGM
Sels:  ? (Menu)  A Alter   C Copies  I Indexes  K Pkgs    L All
        O Out DDL P Plans  Q Query   S Tblspcs T Tables  V Views
        Z Auths   8 Migrate

-----
  S  T  NUMBER OF  CREATED  STORAGE  BUFFER
  DATABASE Y TBLSPCS TABLES INDEXES CREATOR BY  RO SHARE GROUP POOL
-----
- WOODS01D      4    46    64 TSCN03  TSCN03      SGMISTST BP0
- WLASE         62    62    62 TSLA73  TSLA73      DB2X      BP0
- USTSSFDB      -     -     -  IDMI00  IDMI00  OWNER  SYSDEFLT BP0
6 USTSOZ12      1     1     -  TSLA66  TSLA66      SGMISTST BP0
    
```

- 1** Location for the title (The optional location for the title of the panel is centered on the second or third line.)
- 2** Name of the current DB2 system
- 3** Location for the statistics for the current list, such as the line count (The system also displays in this area any messages that occur.)
- 4** Location for entry of a !DB/WORKBENCH or ISPF command
- 5** Location for the display of long messages (if any) displayed by pressing PF1 after short message is displayed
- 6** Location for entry of a select that you want to use with an object (Each object on the panel has a select field in the column.)

---

## Common functions available from a !DB/WORKBENCH object list panel

On most !DB/WORKBENCH object list panels, you can perform these actions:

- Perform an action that affects the objects listed by entering a command on the command line.
- Perform an action that affects a selected object by entering a select (the single character for the action you want) in the Select field.
- Use ISPF functions by entering a command on the command line (such as PRINT and PANELID).

---

## Additional functions you can perform

On many of the object list panels, you can also use these functions:

- !DB/WORKBENCH switching commands (/)
- SQL commands (by using a panel for input of SQL statements)
- DB2 commands (by using a menu listing DB2 commands available within !DB/WORKBENCH)
- TSO commands

---

## If you want to return to the !DB/WORKBENCH Primary Menu

If you are on a panel and want to return to the !DB/WORKBENCH Primary Menu during a !DB/WORKBENCH session, type **RETURN** on the command line and press Enter, or press the appropriate function key.

For information about variations in the operation of the RETURN command, see “Returning to the !DB/WORKBENCH Primary Menu” on page 115.

## Commands for Working with the User PDS

---

### Overview

This unit describes two commands that enable you to edit or browse members in the user partitioned dataset (PDS).

---

### Background about the UEDIT and UBROWSE commands

!DB/WORKBENCH provides commands to permit you to view or edit members in your user PDS without exiting !DB/WORKBENCH or using a split screen. The commands are UBROWSE and UEDIT. To execute either of these commands, enter it on the command line of the object panel you are using.

---

### Format of the commands

The commands UBROWSE and UEDIT take the form:

```
UBROWSE [member | member pattern]  
UEDIT [member | member pattern]
```

where

- *member* specifies the name of the member in the user PDS you want to browse or edit
- *member pattern* is a mask that is used to create a list of members which !DB/WORKBENCH presents to you. You can then select the member or members you want to browse or edit. Review the information in the section “Specifying a Name for Filtering Objects” on page 208 for information about creating pattern masks.

If you omit the member name or member pattern mask, !DB/WORKBENCH presents a list of the entire contents of the user PDS from which you can select the member or members to work with.

## Methods to Use Selects for Object List Panels

---

### Overview

This unit includes information about using a select with one object or with multiple objects on a panel. It includes information about displaying the results of multiple selections and about canceling selections.

---

### Applying a select to one object

!DB/WORKBENCH allows you to specify the object and the function you want to use with an object. Follow these instructions to select one object.

Step	Action
1	Move the cursor to the line with the object you want.
2	Type the character for the selection you want in the Select field. <b>Example:</b> If you want to display authorizations associated with an object, type <b>Z</b> in the Select field.
3	Press Enter. <b>Result:</b> The system processes the select for the object and displays the results.

---

### Applying the same select to multiple objects

You can apply the same select to multiple objects displayed on the object list panel. You can use the S command with selects such as ones that display other objects or you can use it with the Exclude (X) select. Follow these instructions.

Step	Action
1	On the object list panel, type <b>S</b> followed by a space and the letter for a select on the command line. <b>Example:</b> On the Tables panel, type <b>S I</b> on the command line.
2	Press Enter. <b>Result:</b> For a select that displays objects, the system processes objects in the order that they are listed on the panel. It applies the select to each object, but does not display the results of processing the selects. When the system completes all processing, it displays the results of the select for the first object.

---

### Applying selects to multiple objects (quick access)

You can make multiple selections for multiple objects. For example, you can specify Details (D or T) for one object and Views (V) for another object. Follow these instructions to choose more than one select and one object.

Step	Action
1	Move the cursor to the line with the object you want.
2	Type the character for the selection you want in the Select field. <b>Example:</b> On the Table Spaces panel, type <b>D</b> in the Select field for the object you want.
3	Move the cursor to the line with the second object you want.
4	Type the character for the second selection you want in the Select field. <b>Example:</b> On the Table Spaces panel, type <b>V</b> in the Select field for the second object you want.
5	Press Enter. <b>Result:</b> The system processes objects in the order that they are listed on the panel. It applies the select to each object, but does not display the results of processing the selects. When the system completes all processing, it displays the results of the select for the first object.

---

### Example displaying the results of using multiple selects

Whether you applied the same or different selects to objects, you perform the same actions to display the results of processing the select. In the previous example, you entered two selects, such as Details (D or T) and Views (V). Follow these steps.

Step	Action
1	On the panel that the system displayed after processing the selects, type <b>END</b> on the command line and press Enter, or press the appropriate function key. <b>Result:</b> The system displays the results of processing the second select.
2	Type <b>END</b> on the command line and press Enter, or press the appropriate function key. <b>Result:</b> The system displays the original object list panel.

---

**If you do not want to complete the selections**

If you have typed selects in the Select fields on the panel and decide that you do not want to proceed, follow these instructions.

Step	Action
1	Type <b>CAN</b> on the command line.
2	Press Enter. <b>Result:</b> The system blanks out all the select characters you typed and redisplay the panel.

---

**Additional information about using multiple selects**

Before you use multiple selects, you should become familiar with the consequences to data that can occur with some selects. If you plan to use the S command to apply multiple selects and want to use a command that generates statements (such as ALTER, BIND, or CREATE statements), see “Displaying Data from the DB2 Catalog” on page 213.

---

**Additional information about availability of selects**

For information about how to display the selection list of the selects available from an object list panel, see “Using Selection Lists from Object List Panels” on page 99.

## Methods to Use Commands for Object List Panels

---

### Overview

This unit includes information about using commands with the objects listed.

---

### Applying a command to all objects listed on the panel

Follow these instructions to apply a command to all objects listed.

Step	Action
1	On the panel, type the command on the command line. <b>Example:</b> On the Tables panel, type <b>ALIAS</b> on the command line.
2	Press Enter. <b>Result:</b> The system processes the command for the objects listed.

---

### Additional information about the availability of commands

For information about how to display the selection list of the commands available from an object list panel, see “Using Selection Lists from Object List Panels” on page 99.

For detailed information about the differences in the effects of using commands and selects on data, see the unit “Introduction to Display” on page 129.



## Commands and Selects and Object List Panels

---

### Overview

This unit includes information about using a command and one or more selects together.

---

### Applying a command and selects together

Follow these instructions to apply a command to all objects and the selects to the specified object(s).

Step	Action
1	On the object list panel, type the command on the command line. <b>Example:</b> On the Tables panel, type <b>ALIAS</b> on the command line.
2	Type the character for the selection you want to use with the object in the Select field. <b>Example:</b> Type <b>D</b> in the Select field.
3	Type the character for the second selection you want to use with the second object in the Select field. <b>Example:</b> Type <b>Z</b> in the second Select field.
4	Press Enter. <b>Result:</b> The system processes the objects with the selects in the order the objects are listed on the panel. It applies the select to the object, but does not display the results of the process. The system then processes the command. When the system completes all processing, it displays the results of the select for the first object.

---

### Reminder about displaying results

To display the results of a command used with one or more selects, type **END** on the command line and press Enter, or press the appropriate function key.

## Methods to Recover from Errors in Processing

---

### Overview

This unit contains information about how to display more information about an error and methods available to recover from an error in processing of selects.

---

### Displaying more information about an error message

If there is an error in the processing of any entry, the system displays an error message in the upper right corner of the panel. The system also positions the cursor on the select that the system cannot process. Perform this step to display more information about the error.

Step	Action
1	Type <b>HELP</b> on the command line and press Enter, or press the appropriate function key.

---

### Determining the appropriate option to use to resolve the error

Review the table to determine the appropriate option.

IF you want to ...	THEN ...
Use another select for the object	Type a different select code. Press Enter.
No longer use the select	Blank out the select. Press Enter.
Process the next select	Press Enter.  <b>Result:</b> The system continues processing with the next select.

# Chapter 5. Using Selection Lists from Object List Panels

---

## Introduction

This chapter provides an introduction to the elements of frequently used selection lists available from object list panels. It also contains information about using each of these selection lists.

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## Overview of the Chapter

---

### Organization of information in this chapter

The chapter contains an introduction for using selection lists available from object list panels. The introduction to each selection list includes these items:

- An illustration showing common elements in selection lists
- Instructions about accessing each of the selection lists, about using the selection list, and about supporting information for the selection list, if applicable

---

### Selection lists covered in this chapter

This chapter covers selection lists that are available from panels within !DB/WORKBENCH. You can access selection lists that provide information about the panel:

- Commands available from the panel
- Sorts available from the panel
- Selects available from the panel
- Filtering of objects on the object list on the panel
- Additional sessions within !DB/WORKBENCH

---

### Selection lists and versions of ISPF

Selection lists are available only if you are using ISPF version 3.3 or higher. For earlier releases, the system displays the full panel.

## Overview of Selection Lists Available from a Panel

### Elements of selection lists available from panels

The selection lists in this chapter vary in appearance and in the location on the panel where they are displayed. One selection list (the selection list available for filtering) has multiple fields for entry of values for filters; however, most of the selection lists have these two elements in common.

```

DATABASES ----- DB/WORKBENCH --- DB2=DB31----- DATABASE 1 OF 98
Cmd ==>
                                D A T A B A S E S
Cmds:  DO (Menu)  GM/NOGM
Sels:  ? (Menu)  A Alter    C Copies  I Indexes  K Pkgs    L All
        O Out DDL P Plans   Q Query   S Tblspcs T Tables  V Views
        Z Auths   8 Migrate

-----
S  DATABAS  ----- NUMBER OF -----   CREATED   STORAGE  BUFFER
-----  DATABASE SELECTS -----   RSHARE  GROUP    POOL
-----
? AAAAMMM  Option ==> 1
  CANDLE   A Alter
  DADD1    C Copies
  DBBART   I Indexes
  DBCILE   K Packages
  DBGLEN   L All objects
  DBHAKAN  O Output DDL
  DBJOHNB  P Plans
  DBKAREN  Q Query
  DBKENT   S Tablespaces
  DBLMP    T Tables
  DBMARIA  V Views
  DBMHL    Z Auths
  DBNBDB3  8 Migrate
  DBTOMC
  DBTSUK3
  DB2BASE  1
  DB31COMP 1 1 2 TSNB03 TSNB03
-----

```

- 1** Location for entry of the letter or number of your choice
- 2** Additional information or choices for the panel such as the selects that are available from the panel

### If you want to return to the panel

If you have not provided any values on the selection list and you decide you do not want to perform the tasks available from the selection list, you can return to the original panel. To return to the original panel, type **END** in the Option field on the selection list and press Enter, or press the appropriate function key.

## Using Selection Lists to Access Commands Available from Panels

---

### Overview

The unit contains information about the selection lists that list all of the commands that you can use from the panel but may not be listed on the panel. It provides instruction for accessing and using the selection list.

---

### Methods for accessing the selection list

If you want to use the selection list of the commands available from the panel, follow these steps.

Step	Action
1	On the panel, type <b>DO</b> on the command line.
2	Press Enter. <b>Result:</b> The system displays a selection list that allows you to select from all commands that you can use on the panel.

---

### Method for using the selection list

If you want to select from the selection list, follow these steps.

Step	Action
1	On the selection list, type the appropriate value for the command you want in the Option field.
2	Press Enter. <b>Result:</b> The system executes the process you requested.

---

### Additional information about commands

For additional information about the operation of the commands listed on the menu, see one of the following sources:

- Online Help
- The chapters “Methods for Displaying Data” on page 169, “Methods for Working with Data” on page 257, “Methods for Generating Statements for Objects” on page 277, and “Using !DB/WORKBENCH Macros” on page 321

## Using Selection Lists to Access Sorts Available from Panels

---

### Overview

This unit contains information about the selection lists that list all of the sorts that you can use from the panel.

---

### Methods for accessing the selection list

If you want to display a selection list of the sorts that you can use with objects on the panel, follow these steps.

Step	Action
1	On the panel, type <b>DOS</b> on the command line.
2	Press Enter.  <b>Result:</b> The system displays a selection list that provides a brief explanation of each sort and allows you to choose from all the sorts that you can use on the panel.

---

### Methods for using the selection list

If you want to select from the selection list, follow these steps:

Step	Action
1	On the selection list, type the character for type of the sort in the Column field.
2	If you want to change the order of the sort, type the appropriate value in the Order field: <ul style="list-style-type: none"> <li>• Type <b>A</b> for ascending order.</li> <li>• Type <b>D</b> for descending order.</li> </ul>
3	Press Enter.  <b>Result:</b> The system sorts the data according to the <i>keyword</i> and redisplay the data on the panel.

---

### Additional information about sorts

For more information about using sorts (including about using ascending and descending sorts), see the unit “Using SORT Commands” on page 123.

## Using Selection Lists to Access Selects Available from Panels

---

### Overview

This unit contains information about the selection list of all selects that you can use with objects on the panel. The unit provides instructions for accessing and using the selection list. It also includes information about selects.

### Background

The selection list provides this information:

- All selects that you can use from the panel, but that may not be listed on the panel
- Additional text that clarifies the brief version of the text that fits on the screen (For example, the Plans and Packages panels list the word *Conns* only; the selection list lists the word *Connections*.)

### Method for accessing the selection list

If you want to use the selection list of the selects available from the panel, follow these steps. (In most cases, the selection list lists the selects on the panel. On the All panel, however, the selection list lists the selects for the type of object. For example, if you enter a question mark (?) in the select field for a table, the system displays the selection list of the selects for the Tables panel.)

Step	Action
1	On the panel, type ? in the Select field for an object.
2	Press Enter.  <b>Result:</b> The system displays a selection list that allows you to choose from all the selects that you can use on the panel.



---

**Method for using the selection list**

If you want to select from the selection list, follow these steps.

Step	Action
1	On the selection list, type the appropriate value for the select you want in the Option field.
2	Press Enter. <b>Result:</b> The system applies the select to the object.

---

**Additional information**

For additional information about the operation of the selects listed on the menu, see one of the following sources:

- Online Help
- “Methods for Displaying Data” on page 169, “Methods for Working with Data” on page 257, and “Methods for Generating Statements for Objects” on page 277 for more information about commands and selects
- “Using !DB/WORKBENCH Macros” on page 321 for more information about using commands and selects together

## Using Selection Lists to Filter Objects on the Object List

---

### Overview

The unit contains background information on the selection list for filters and the method for accessing the selection list.

---

### Background

The filter selection list allows you to limit the objects that appear on a !DB/WORKBENCH DB2 object list so the list is more useful for the tasks you want to perform. The filter selection list performs these functions:

- Displays the filters currently in effect on the panel
  - Allows you to modify filter conditions
- 

### Method for accessing the selection list

If you want to use the selection list of the filters available from the panel, follow these steps.

Step	Action
1	On the panel, type <b>FILT</b> on the command line.
2	Press Enter. <b>Result:</b> The system displays a selection list, scrollable menu of the filters currently in effect on the panel.

---

### Method for using the selection list

To successfully use the filter selection list, you need to be familiar with the types of filtering you can use. For information, see chapter “Filtering Object Lists” on page 191.

## Using Selection Lists to Access Multiple !DB/WORKBENCH Sessions

---

### Overview

!DB/WORKBENCH allows you to see data in multiple sessions and to have a window into the database. This unit contains background information about access to multiple !DB/WORKBENCH sessions, such as how the sessions work if you have !DB/QUICKCHANGE, a brief description of how the session operates, and an illustration of the selection list. The unit also includes information about accessing the menu and beginning, switching, and ending sessions.

---

### !DB/QUICKCHANGE and !DB/WORKBENCH sessions

You can have only one !DB/WORKBENCH session at a time that has !DB/QUICKCHANGE invoked. For example, if you had one session active invoking !DB/QUICKCHANGE, you could not invoke !DB/QUICKCHANGE from your current session.

---

### Background information about the selection list for !DB/WORKBENCH sessions

!DB/WORKBENCH enables you to have multiple sessions active and to switch between them. For example, you can have one session using views and another using plans. When you switch to another session, the session you were using is suspended as you left it.

The Sessions selection list performs these functions:

- Displays the status of the sessions and lists the types of sessions that you can use
- Allows you to begin a new session
- Allows you to switch to an existing session and to maintain your exact position on the panel. (If you use other methods to move to a panel or object list, !DB/WORKBENCH automatically displays the top of the list each time.)

---

### Background about availability of the forward slash (/) command

The forward slash (/) command is available online. You can not use it in batch.

## Background about extracts and the forward slash (/) command

If you want to use another extract, be sure to end all of your sessions before changing your extract ID.

## Elements of the selection list for sessions

The illustration shows the elements of the Sessions selection list for the sessions available within !DB/WORKBENCH.

```

DATABASES ----- DB/WORKBENCH --- DB2=DB31----- DATABASE 1 OF 98
Cmd ==> /                                         Scroll ==> PAGE

----- SESSIONS -----
Cmds:  D   Cmd ==>
Sels:  ?   Option ==> 1
      0   2 3 4
      Z   1 // C Main Session
-----
      2 /D Databases
      3 /S Tablespaces
SEL DATABA 4 /T Tables
-----
      5 /I Indexes
      6 /V Views
      7 /P Plans
      8 /G Storage Groups
      9 /Z Authorizations
      K /K Packages
      L /L Aliases
      R /R Procedures
-----
      DBJOHNB      2      9      3 TSL244  TSL244
-----
s  K Pkgs      L All
s  T Tables    V Views

-----
TED      STORAGE  BUFFER
      ROSHARE  GROUP   POOL
-----
63      MMMSTO  BP0
72      TSUKSTG  BP0
60      SYSDEFLT BP0
44      SYSDEFLT BP0
53A     SYSDEFLT BP0
33      SYSDEFLT BP0
02      SYSDEFLT BP0
06      SYSDEFLT BP0
      SYSDEFLT BP0

```

- 1** Location to enter the session number
- 2** Session number - the number or letter to use if you are accessing a session from the Sessions selection list (Type this number or letter in the Option field on the Sessions selection list panel.)
- 3** Session ID - the value to use if you are accessing a session from the command line on a panel (Type this value on the command line of any !DB/WORKBENCH panel or in the Option field on the Primary Menu.)
- 4** Status of the session
  - C indicates the session you are currently using
  - A indicates a session that is active but suspended
  - Q indicates a session displaying SQL output

---

## Background about the main session

The Sessions selection list presents the main session at the top of the selection list. It is designated with // (two forward slashes). The panel that is active when you first access the Sessions selection list becomes your main session. If you are on the Primary Menu when you first access the Sessions selection list, the Primary Menu becomes your main session. If you are on an object list panel or any other panel that has a command line, when you first access the Sessions selection list, that panel becomes your main session. For instance, if you are on the Tables panel when you first access the Sessions selection list, the Tables panel becomes your main session.

---

## Method for accessing the selection list

If you want to use the selection list of the additional sessions available, follow these steps.

Step	Action
1	Perform one of the following appropriate actions: <ul style="list-style-type: none"> <li>● On the !DB/WORKBENCH Primary Menu, type / (forward slash) in the Option field.</li> <li>● On any !DB/WORKBENCH panel that has a command line, type / (forward slash) in the command line.</li> </ul>
2	Press Enter. <b>Result:</b> The system displays the Sessions selection list that shows the status of each session.

---

## Method to begin or switch a session using the selection list

From the Sessions selection list, you can either begin a new session or switch to an existing session. In either case, you follow the same steps.

Step	Action
1	On the Sessions selection list, type the session number or letter in the Option field. <b>Example:</b> If you want to start or to switch to a Tables session (which has a session number of 4), type 4.
2	Press Enter. <b>Example:</b> The system suspends the session you were using, displays the Tables panel, and makes the Tables session the current session.

---

**Method to begin or switch a session from the command line**

From the command line, you can either begin a new session or switch to an existing session. For both, follow the same steps.

Step	Action
1	Perform one of the following appropriate actions: <ul style="list-style-type: none"> <li>● On the !DB/WORKBENCH Primary Menu, type the Session ID in the Option field.</li> <li>● On any !DB/WORKBENCH panel that has a command line, type the Session ID on the command line.</li> </ul> <b>Example:</b> If you want to start or to switch to a Tables session (which has a Session ID of /T), you type /T.
2	Press Enter.  <b>Example:</b> The system suspends the session you were using leaving it with an active status, displays the Tables panel, and makes the Tables session the current session.

---

**Method for returning to your main session**

You can return to your main session by performing this step.

Step	Action
1	On any !DB/WORKBENCH panel that has a command line, type // on the command line.  Press Enter.  <b>Result:</b> The system displays the main session. The system also changes the status of the session you were previously using to active, and it changes the status of the main session to current.

### Method for ending a session

To terminate a !DB/WORKBENCH session, the session must be active. In the active session, type **END** on the command line and press ENTER (or press the END key). The session terminates and you return to the main session.

---

### Method for ending all sessions

You end all sessions when you exit !DB/WORKBENCH. (The system does not maintain multiple !DB/WORKBENCH sessions after you exit !DB/WORKBENCH. You must reestablish additional sessions when you re-enter the product.)





# Chapter 6. Using ISPF Facilities within !DB/WORKBENCH

---

## Introduction

!DB/WORKBENCH uses ISPF facilities. This chapter provides a review of information about ISPF functions that are frequently used within !DB/WORKBENCH.

## Chapter contents

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Returning to the !DB/WORKBENCH Primary Menu . . . . .	115
Controlling the Operation of Scrolling . . . . .	117
Displaying Online Help Information . . . . .	119
Displaying Online Information about Messages . . . . .	120
Display of Additional Information . . . . .	121
Using SORT Commands . . . . .	123

## Performing Common Operations with !DB/WORKBENCH

---

### Overview

This unit contains instructions to create another ISPF session and to use TSO commands from within !DB/WORKBENCH.

---

### Creating another ISPF display session

You can create a second ISPF session, and you can also run !DB/WORKBENCH on each session if your TSO USERID region size has sufficient memory. Review the instructions in the chart for the actions to perform.

Task You Want to Perform	Action
Create another ISPF display session	Type <b>SPLIT</b> on the command line and press Enter, or press the appropriate function key.
Create another ISPF display session and another !DB/WORKBENCH session	Type <b>SPLIT</b> on the command line and press Enter, or press the appropriate function key.  Then start another !DB/WORKBENCH session. See “Using Selection Lists to Access Multiple !DB/WORKBENCH Sessions” on page 107.

---

### Using TSO commands from a !DB/WORKBENCH panel

You can run CLIST and other TSO commands from any !DB/WORKBENCH panel. Review the information in the chart for the actions to perform.

Task You Want to Perform	Action
Run a CLIST or another TSO command	Type <b>TSO</b> <i>commandname</i> on the command line.  Press Enter.

## Returning to the !DB/WORKBENCH Primary Menu

---

### Overview

This unit shows how you can use the END and RETURN commands to return to the !DB/WORKBENCH Primary Menu or a previous panel. It also contains information about the different ways the RETURN command can function.

---

### Variations in the operation of the RETURN command

You can use the !DB/WORKBENCH configuration option (available in Housekeeping) to control the operation of the RETURN command and define it in the profile established for the user. You can define the RETURN command to have it function in two ways:

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

---

**Returning to the !DB/WORKBENCH Primary Menu or to a previous panel**

Review the information in this chart for the action to end the current panel and return to the Primary Menu or to the previous panel. (The operation of RETURN as described in the chart assumes that your user configuration has RETURN defined to display the !DB/WORKBENCH Primary Menu. For more information on defining the RETURN command, see the section “Option 1.5: !DB/WORKBENCH Configuration Information” in *!DB/WORKBENCH Advanced User's Guide* )

<b>Task You Want to Perform</b>	<b>Action</b>
End the current panel and access the !DB/WORKBENCH Primary Menu	Type <b>RETURN</b> on the command line and press Enter, or press the appropriate function key.  <b>Result:</b> The system first processes all selections you have made on the panels you have been using and then processes the RETURN command. It then displays the !DB/WORKBENCH Primary Menu.
End the current panel and return to the previous panel that you were using	Type <b>END</b> command on the command line and press Enter, or press the appropriate function key.  <b>Result:</b> The system first processes all selections you have made on the panel and then processes the END command. It then displays the panel you were using previously.

## Controlling the Operation of Scrolling

---

### Overview

!DB/WORKBENCH uses standard functions for scrolling with ISPF. If you are not familiar with ISPF scrolling, review the information in this unit for information about scrolling backward and forward through a list, moving to the beginning or end of a list, and altering the number of lines the program uses.

---

### Scrolling backward or forward through a list

Review the instructions in the chart for the actions to scroll backward and forward through a list.

Task You Want to Perform	Action
Display a section closer to the beginning of the list	Type <b>UP</b> on the command line and press Enter, or press the appropriate function key.
Display a section farther down from the beginning of the list	Type <b>DOWN</b> on the command line and press Enter, or press the appropriate function key.

---

### Scrolling to the beginning of a list

For information about scrolling to the beginning of a list, review the chart for two of the possible actions.

Task You Want to Perform	Action
Display a section that is at the beginning of the list	Type <b>TOP</b> (for Maximum Scroll Up) on the command line and press Enter, or press the appropriate function key.
	Type <b>M</b> on the command line and press the function key that you assigned for the UP command.

---

### Scrolling to the end of a list

When the system displays the end of a list, it displays a full screen, rather than just the last line. It also displays a message indicating that the display is the end of the list. For information about scrolling to end of a list, review the information in the chart for two of the possible actions.

Task You Want to Perform	Action
Display the section that is at the end of the list	Type <b>BOTTOM</b> (for Maximum Scroll Down) on the command line and press Enter, or press the appropriate function key.
	Type <b>M</b> on the command line and press the function key that you have assigned for the DOWN command.

---

### Altering the number of lines being scrolled

Review the information in the chart for the action to perform if you want to alter the number of lines that the program uses when it scrolls.

Task You Want to Perform	Action
Alter the number of lines the program uses when it scrolls	<p>Type the appropriate value in the scroll field:</p> <ul style="list-style-type: none"> <li>● <b>P</b> (Page) for scrolling by full page</li> <li>● <b>H</b> (Half) for scrolling by half page</li> <li>● <b>C</b>(Cursor) for cursor scrolling</li> <li>● <b>&lt;n&gt;</b> for scrolling by a specified number of lines</li> </ul> <p>Press Enter.</p> <p><b>Result:</b> The system uses the number of lines you specified when scrolling on all panels, including the one you are currently using.</p>

## Displaying Online Help Information

---

### Overview

This unit contains information about accessing online Help information for !DB/WORKBENCH and the ISPF facilities.

---

### Displaying Help information

Review the information in this chart for the action to display Help information.

Information You Want	Action
Help available from !DB/WORKBENCH	Type <b>HELP</b> on the command line and press Enter, or press the appropriate function key.
Help available for ISPF facilities	On the panel displaying help information for !DB/WORKBENCH, type <b>HELP</b> on the command line and press Enter, or press the appropriate function key.

## Displaying Online Information about Messages

---

### Overview

This unit contains information about !DB/WORKBENCH messages that are displayed on a menu or panel.

---

### Displaying information about messages

Review this chart for the action to display information about messages.

<b>Information You Want</b>	<b>Action</b>
Information about a message that is displayed on the menu or panel	Type <b>HELP</b> on the command line and press Enter, or press the appropriate function key.  <b>Result:</b> The system displays more information about the condition.



## Display of Additional Information

---

### Overview

This unit contains information about how to control the display of the panel identifier and the assignment of function keys. It also includes other information about displaying data and the PFSHOW command.

---

### Displaying information about panel identifiers

Review the information in this chart for the action to perform for the type of information you want to display.

Information You Want	Action
Panel identifier (information you need if you contact Candle Customer Support with a question about a specific panel)	Type the appropriate value on the command line: <ul style="list-style-type: none"> <li>● To display the panel identifier, type <b>PANELID</b>.</li> <li>● To suppress the panel identifier, type <b>PANELID OFF</b>.</li> </ul> Press Enter. <p><b>Result:</b> The system displays the panel identifier according to the command on this and subsequent panels.</p>

### Displays of data and assignments for function keys

If you use the PFSHOW command, the assignment of keys listed at the bottom of the menu or panel can cover up the last two lines of text. For example, if you have used the PFSHOW command and you display the selectino list of selects, you may not see the last two selects that are available on the panel.

Review the information in this chart for the action to perform for the type of information you want to display.

Information You Want	Action
Assignment of function keys (those typically used in a standard ISPF environment)	Type the appropriate value on the command line: <ul style="list-style-type: none"> <li>● To display the key assignments,                              type <b>PFSHOW</b>.</li> <li>● To suppress the key assignment                              display, type <b>PFSHOW OFF</b>.</li> </ul> Press Enter.  <b>Result:</b> The system changes the display, including the display on the panel you are currently using.

## Using SORT Commands

---

### Overview

You can use the SORT command to rearrange data that is displayed on the panel. This allows you to easily see the specific information you want. This unit contains information about using the SORT command from the command line or the selection list, additional methods for using SORT commands, and variations in the operations of sorts.

---

### Background information about the format of the SORT command

To use a SORT command to sort data, use this format on the command line.

#### **SORT** *keyword*

Where

- SORT is the required command. (You can also use the SORTD command if you want the data in descending order.)
  - There is a required space between the command and the keyword.
  - *keyword* is the required 2 characters to specify the column you want the system to use when sorting.
- 

### Using the SORT command from the command line

To use the SORT command from the command line, follow these steps.

Step	Action
1	Type the appropriate value on the command line: <ul style="list-style-type: none"> <li>• If you want to sort in ascending order, type <b>SORT</b> <i>keyword</i>.</li> <li>• If you want to sort in descending order, type <b>SORTD</b> <i>keyword</i>.</li> </ul>
2	Press Enter.  <b>Result:</b> The system sorts the data according to the command and keyword you used and redisplay the data.

---

### Using the SORT command from a selection list

To use the SORT command from a selection list, follow these steps.

Step	Action
1	On the panel, type <b>DOS</b> on the command line.
2	Press Enter. <b>Result:</b> The system displays a selection list that lists all the sorts that can be performed on the panel and that provides a brief explanation of each sort.
3	Type the character for the type of the sort in the Column field.
4	If you want to change the order of the sort, type the appropriate value in the Order field: <ul style="list-style-type: none"> <li>• Type <b>A</b> for ascending order.</li> <li>• Type <b>D</b> for descending order.</li> </ul>
5	Press Enter. <b>Result:</b> The system sorts the data according to the <i>keyword</i> and redisplay the data on the panel.

---

### Using the SORT command to list SORT keywords

If you want to display a list of the sorts that you can use on the command line, follow these steps. (You can blank out all of the keywords but the one you want and execute the command.)

Step	Action
1	On the panel, type <b>SORT ?</b> on the command line.
2	Press Enter. <b>Result:</b> The system displays the word <i>SORT</i> followed by a list of keywords.

---

## Variations in displays of sorted data

You can display additional data on some panels, such as the Tables, Table Spaces, and Indexes panels. For example, you can display statistical information on the Indexes panel by entering the STT command.

If you sort on this additional data, the system redisplay the data and replaces some of the original columns of data with the data you requested in the sort.

---

## Characteristics of an example of sorting data associated with a panel

In the example, the original data on the Indexes panel produces this display.

```

DISPLAY ALL DB2 INDEXES -- DB/WORKBENCH --- DB2=DB2 ----- INDEX 1 OF 26(F)
Cmd ==>                                                                    Scroll ==> DATA

                                I N D E X E S
Cmds:  DO (Menu)  PACK      PART/NOPART      STT/NOSTT
Sels:  ? (Menu)  A Alter   C Columns  D Details  H Hexdump  K Pkgs
        L Listcat N DS Info  O Out DDL  P Plans   Q Query    R Runstat
        T Tables  U Utility  X Exclude

-----
SEL INDEX NAME          CREATOR  TABLE          INDEX  PRT U C I
                        AUTHID   SPACE           TABLE INDEXED SPACE NO. Q G T
-----
_  ALTCTRLX             CDB      STATDBAS  ALTERCONTROL  ALTCTRLX  D N
_  ALTCTRLX             DHDBTV3  STATDBAS  ALTERCONTROL  ALTCTRLX  D N

```

You want to sort the data according to the cluster ratio (a value available if you use the STT command, or if you use the SORT keyword CP).

---

## Example of sorted data that is associated with a panel

When you enter the SORT CP command, the system sorts according to the keyword, redisplay the data, and replaces columns such as Table Space and Table Indexed with the data you requested.

```

DISPLAY ALL DB2 INDEXES -- DB/WORKBENCH --- DB2=DB2 ----- INDEX 1 OF 26(F)
Cmd ==>                                                                    Scroll ==> DATA

                                I N D E X E S
Cmds:  DO (Menu)  PACK      PART/NOPART      STT/NOSTT
Sels:  ? (Menu)  A Alter   C Columns  D Details  H Hexdump  K Pkgs
        L Listcat N DS Info  O Out DDL  P Plans   Q Query    R Runstat
        T Tables  U Utility  X Exclude

-----
SEL INDEX NAME          CREATOR  NUMBER  NUMBER  LEAF  SPACE  CLS
                        AUTHID   FIRST8  DISTINCT PAGES  SPACE  PCT
-----
_  ALTCTRLX             DHDBTV3  0       0       0     0     ****
_  ALTCTRLX             PPCDB    -       ****   ****   ****   ****

```

---

**Returning the display to its original order following a sort**

Review the chart to determine what method to use to return the display to its original order after you have used a sort.

<b>Data You Have Sorted</b>	<b>Method to Use</b>
Any sorted data (including data that is associated with a panel)	Type <b>END</b> on the command line and press Enter, or press the appropriate function key.  <b>Result:</b> The system returns the data to its original order and returns to the previously displayed menu or object list panel.
Sorted data that has the same column heading(s) as the column heading(s) that are displayed when you first accessed the panel	Type <b>SORT</b> on the command line and press Enter, or press the appropriate function key.  <b>Result:</b> The system redisplay the data in its original order.

# Displaying Data





## Introduction

This chapter provides background information about how displays function with !DB/WORKBENCH. It also lists resources available to help you use !DB/WORKBENCH features that let you efficiently display the data you want. The chapter is a prerequisite for other chapters in this section.

## Chapter contents

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Two Methods of Accessing Data from !DB/WORKBENCH . . . . .	140
Options for Printing Displays of Data . . . . .	142

## Resources for Learning about Topics in This Section

---

### Overview

This unit lists resources available for learning about options that display data. It includes information about the resources in this guide and in !DB/WORKBENCH.

---

### Resources in this guide

This guide is intended to help you have a broad picture of the features for controlling the displays of data that are available in !DB/WORKBENCH. The chart lists sources available within this section “Displaying Data.”

Information You Want	Resources Available
General introduction to the way the system displays data and the sources of data for that display	This chapter
Introduction to the objects that you can display directly from the !DB/WORKBENCH Primary Menu	“Overview of Object List Panels” on page 145
Overview of the methods you can use to display the objects you want and to specify objects available from the object list panels	“Methods for Displaying Data” on page 169
Instructions on how to use filtering to display specific data either for a report of information or for an action you want to perform	“Filtering Object Lists” on page 191
Information on when and how to access data directly from the DB2 catalog or from the !DB/WORKBENCH extract	“Displaying Data from the DB2 Catalog” on page 213

---

## Resources available with online Help

With `!DB/WORKBENCH`, the online lists of options and the online Help provide specific information that you need for the task you want to do. For example, online Help provides information explaining each filter command you can use on a panel.

To access Help, type **HELP** on the command line and press Enter, or press the appropriate function key.

---

## Resources providing online lists of available options

This chart includes brief instructions for accessing information about print parameters or 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 <b>DO</b> on the command line, and press Enter.
Selects available	On the panel, type <b>?</b> in the select field for the object you have selected, and press Enter.
Sorts available	On the panel, type <b>DOS</b> or <b>SORT ?</b> on the command line, and press Enter.
Filters available	On the panel, type <b>FILT</b> on the command line, and press Enter.
Print parameters	On the panel, type <b>DOP</b> on the command line and press Enter.

---

## Additional information about online resources

If you want introductory information about using these and similar features, see the chapters within the section “Introducing Fundamentals” on page 79.

---

## Additional resources in this guide and batch processing

This guide also includes information on using selects and commands to access object lists for batch reports or for processing in batch. For information, see the chapter “Command Dictionary for Batch” in *!DB/WORKBENCH Advanced User's Guide* and the chapter “Summary of Methods for Display” in *!DB/WORKBENCH Reference Manual*.

## Overview of the Chapter

---

### Background about !DB/WORKBENCH and this section

!DB/WORKBENCH makes it possible to use powerful DB2 operations without extensive data entry and without memorizing DB2 commands. In particular, !DB/WORKBENCH focuses on using selects and commands on object list panels to reduce data entry but, at the same time, supports highly-specific uses of DB2.

For example, you can select the Table Space panel to display all the table spaces in your system. On the other hand, by entering a single character in a select field on the Table Space panel, you can display the indexes associated with a specific table space.

This section covers the information you need to be able to display the data you want, and this chapter provides the background information for the entire section.

---

### Organization of this chapter

This chapter provides introductory and background information about displays and how they work with !DB/WORKBENCH. It contains information essential to the other chapters in this section.

---

**Organization of information and your needs**

you want to perform.

	<b>Comparisons</b>	<b>Order of Display</b>	<b>Partitioned Table Spaces</b>	<b>Sources of Data</b>	<b>Printing Displays</b>
	p.134	p.136	p.137	p.140	p.142
Avoid common errors that occur when using commands and selects with displays of data	√				
Review the general rules that !DB/WORKBENCH follows in organizing the display of data		√			
Review the different displays of data that occur if you have partitioned table spaces			√		
Read introductory information comparing displays from the !DB/WORKBENCH extract and from the DB2 catalog				√	
				√	

## Comparison of Commands and Selects

---

### Overview

This unit includes information about the terms or phrases used to refer to objects that are displayed. It also explains the significance of displays when modifying data and provides examples of how commands and selects are used to display and to modify data.

---

### Definition of the phrase—objects that are displayed

In this guide and in the online Help, when the text uses a phrase such as the phrase *the object lists that are displayed*, the text refers to all of the objects listed on the panel, including those objects that you can see only if you perform a task such as using the DOWN command.

For example, if you can see 22 rows of data when you first display a panel and if you see an additional 100 rows of data if you continue to use the DOWN command, you have a total of 122 rows of data. When the text refers to the *object lists that are displayed*, the text means the entire 122 rows of data.

---

### Significance of displays or modifications to data

The !DB/WORKBENCH commands and selects can help you efficiently display the data that you want to see. You can also use some commands and selects to modify data. With !DB/WORKBENCH, the objects that the command or select modifies depends on which objects are displayed.

- If you use a command on a panel listing objects, the command acts on all objects that are displayed (on the objects immediately visible on the panel *and* on those visible when you use the DOWN command).
- If you use a select with an object on a panel, the select acts only on the object.

---

### Prerequisites for commands and selects

Some commands and selects have prerequisites. The RI (F) and the Runstat (R) selects are examples. You must use the RI (F) select with referential data, and you must have previously used the DB2 RUNSTATS utility to use the Runstat (R) select. If you use a command or select that has prerequisites, !DB/WORKBENCH displays a message indicating the requirements.

---

**Commands and selects and displays of data**

The chart shows a quick overview of whether you use a command or a select to display data.

<b>Action You Want to Perform</b>	<b>Method to Use</b>	<b>Examples</b>
Display specific information that is defined <i>for all of the objects</i> that are listed	Command on the command line	DEP command to display dependents for all objects listed  STAT command to display the statistics for all objects listed
Display specific information that is defined <i>for the specified object</i>	Select in the Select field for an object	Deps (D) select to display the dependents for the specified object  Auths (Z) select to display the authorizations granted on the specified object

---

**Commands and selects and modification of data**

The chart shows a quick overview of whether you use a command or a select to modify the data that is displayed.

<b>Action You Want to Perform</b>	<b>Method to Use</b>	<b>Examples</b>
Modify all objects that are listed	Command on the command line	PACK command to display the packages for all objects listed
Modify a specific object that you select	Select in the Select field for an object	Pkgs (K) select to display the package(s) for the specific object

---

**Reminder about selections for multiple objects**

If you need a reminder about how to enter a select for more than one object, see “Methods to Use Selects for Object List Panels” on page 93.

## Order of Objects on Panels

---

### Overview

This unit provides an overview of the principles the system uses for placing objects in order and lists variations in alphabetizing that order on specific panels.

---

### General principles for placing objects in order

The system follows these general principles for placing objects in order on the panel:

- Uses standard practices for alphabetizing. For example, names beginning with special characters, such as #CDLABL or @BRKLG C, are listed before names such as ACCOUNT.
  - Displays items in alphabetical order. For example, on the Databases panel, the names of the databases are in alphabetical order.
  - Displays lists within another list in alphabetical order. For example, on the All Objects panel, the table space names listed under a database are also in alphabetical order.
- 

### Alphabetical order and specific panels

These issues related to alphabetical order apply to specific panels:

- On the Plans panel, plan names displayed with an asterisk (\*) as the first character actually begin with the characters X'00'.
- On the Views panel, the first column on the panel is CREATOR (which is not in alphabetical order) and the second column is VIEW NAME (which is in alphabetical order).



## Panels and Display of Partitioned Table Spaces

---

### Overview

This unit contains information specific to partitioned table spaces. It reviews the differences in data about partitioned table spaces that is available with !DB/WORKBENCH.

---

### Background about partitioned table spaces

!DB/WORKBENCH displays different data about partitioned table spaces on each of these panels:

- All Objects
  - Table Spaces
  - Tables
  - Indexes
- 

### Characteristics of the examples

The examples include the All Objects, Table Spaces, Tables, and Indexes panels. The examples use the same data.

### Example of partitioned data shown on the All Objects panel

On the All Objects panel, the system displays the name of the database and repeats the name of the table space followed by the number associated with the partition (such as PART 1). The system also repeats the name of each table and its respective index.

```

DISPLAY DB2 OBJECTS ----- DB/WORKBENCH -- DB2=DB31----- LINE 1 OF 50(F)
Cmd ==>                               Scroll ==> DATA

                                A L L   O B J E C T S

Sels:   ? (Menu)
-----
SEL  DATABASE  TBLSPC   TABLE   - INDEX NAME                STATS
-----
_   ACFIR61
_           BCMBBIL PART1
_           .PLPMS01A.BIL_ACCOUNT          Y
_           .PLPMS01A.BCMIBAT1            Y
_           .PLPMS01A.BIL_ACT_SUMMARY      Y
_           .PLPMS01A.BCMIBAS1            Y

```

### Example of partitioned data shown on the Table Spaces panel

On the Table Spaces panel, the system displays data such as the name of the table space and the number of tables and indexes. It also includes the number associated with the partition (PRT NO.) and the number of partitions into which the table space is divided (NO. PRTS).

```

TABLESPACES ----- DB/WORKBENCH --- DB2=DB31----- TBLSPC 1 OF 1,187
Cmd ==>                               Scroll ==> DATA

                                T A B L E S P A C E S

Cmds:  DO (Menu) PART/NOPART
Sels:  ? (Menu) A Alter   C Copies  D Details E Estimate H Hexdump I Indexes
       K Pkgs   L Listcat N DS Info O Out DDL P Plans   Q Query  R Runstat
       T Tables U Utility V Views  X Exclude Z Auths  8 Migrate
-----
TABLE  PRT      NO.  --NUMBER OF--- STATS
SEL SPACE NO. DATABASE CREATOR  CATALOG  SEGSZ PRTS TABLES INDEXES AVAIL
-----
_   DSN8S21E  1  DSN8D21A DCSP12  DB2V          4    1    2   YES

```

### Example of partitioned data shown on the Tables panel

On the Tables panel, the system displays only one table name because partitioning is not defined at the table level.

```

TABLES ----- DB/WORKBENCH --- DB2=DB2 ----- TABLE 1 OF 4,298
Cmd ==>                                           Scroll ==> DATA

                                T A B L E S
Cmds:  DO (Menu)  ALIAS/NOALIAS  STT/NOSTT  SYN/NOSYN
Sels:  ? (Menu)  A Alter      C Columns  D Details  E Checks   F RI Info
        I Indexes K Pkgs      L Load    N Count   O Out DDL  P Plans
        Q Query   R Runstat  S Tblspcs V Views   X Exclude  Z Auths
-----
SEL TABLE NAME          CREATOR  CREATED  TABLE  ---REF---  STATS # OF
                           DATABASE AUTHID   BY      SPACE    PAR  DEP  AVAIL CHKS
-----
-   A                    DSQDBDEF IDFI22  DCSP54  DSQTSDEF          YES

```

### Example of partitioned data shown on the Indexes panel

On the Indexes panel, the system displays the name of each index, the partition number associated with the index (PRT NO.), and repeats the name of the table space and the table.

```

DISPLAY ALL DB2 INDEXES -- DB/WORKBENCH -- DB2=DB31----- INDEX 1 OF 17(F)
Cmd ==>                                           Scroll ==> DATA

                                I N D E X E S
Cmds:  DO (Menu)  PACK      PART/NOPART  STT/NOSTT
Sels:  ? (Menu)  A Alter   C Columns  D Details  H Hexdump  K Pkgs
        L Listcat N DS Info O Out DDL  P Plans    Q Query    R Runstat
        T Tables  U Utility X Exclude
-----
SEL INDEX NAME          CREATOR  TABLE  TABLE INDEXED  INDEX  PRT U C I
                           AUTHID   SPACE    TABLE INDEXED  SPACE  NO. Q G T
-----
-   ACF2ID             IDMI00  ACF2CICS  ACF2_CICSOP     ACF2ID          U N
-   ACHACRI1           GSACHQ0A ACHACRTS  ACH_ACTIVITY_RTG ACHACRI1        U N
-   ACHACRI1           GSACHU0A ACHACRTS  ACH_ACTIVITY_RTG ACHACRI1        U N
-   ACHACRI1           TDDB33  ACHACRTS  ACH_ACTIVITY_RTG ACHACRI1        U N
-   ACHACRI1           GSACHQ0A ACHADRTS  ACH_ALT_ADR     ACHACRI1        D N

```

## Two Methods of Accessing Data from !DB/WORKBENCH

---

### Overview

This unit provides a comparison of two methods of access to DB2 data: from the !DB/WORKBENCH extract and from the DB2 catalog. The unit also includes examples of data that you can access only from the !DB/WORKBENCH Primary Menu or only from the Interactive Display Facility menu.

---

### Characteristics of the two methods of access

One way to access data is the !DB/WORKBENCH extract. The extract contains the data that !DB/WORKBENCH derived from the DB2 catalog using SQL. The second method is to access the DB2 catalog itself.

The chart provides a brief comparison of these two methods.

Method of Access	Characteristics
Access to the !DB/WORKBENCH extract using the !DB/WORKBENCH Primary Menu	Best choice for most purposes Rapid access to data Access to a variety of objects on panels Availability of a variety of commands and selects to display and modify data
Access to the DB2 catalog using the Interactive Display Facility menu	Choice for special purposes (such as displaying modifications to data that you want to see before you run a new extract) Slower access to data Availability of a subset of commands and selects

---

## Examples of data available only from the extract

These types of data are available only from the extract using !DB/WORKBENCH:

- Information about the organization of the DB2 system as a whole (such as panels that show all the databases, table spaces, tables, indexes, or columns in the system)
- Information about storage groups and associated data (such as volumes)
- Relational data and information on referential integrity (such as the data available from the Tables panel)
- Specific functions (such as Hexdumps and RUNSTATS)

---

## Examples of data available from the catalog

The information you can obtain from the DB2 catalog using !DB/WORKBENCH is similar to the data you retrieve using the extract process. The primary difference lies in the currency of the data. Data from the extract is current as of the date and time of the extract. Data from the DB2 catalog reflects the actual state of the catalog at the current moment.

---

## Additional information about accessing the catalog

If you want information about !DB/WORKBENCH and access to the DB2 catalog, see these sources:

- For information about accessing the DB2 catalog, see the chapter “Displaying Data from the DB2 Catalog” on page 213.
- For data available from the DB2 catalog, see “.Data Available from Object List Panels” in *!DB/WORKBENCH Reference Manual*
- For information about accessing image or system copies from the Databases or Table Spaces panels, use the Copies (C) select and refer to the instructions on the panel. (Additional information is available with the Help panel for the panel.)

## Options for Printing Displays of Data

---

### Overview

This unit provides background and prerequisites, and lists commands related to printing within !DB/WORKBENCH.

---

### Background about the PRNT command

Unlike the ISPF PRINT command (which prints only the items displayed on the screen), the !DB/WORKBENCH PRNT command prints the object lists that are displayed (the objects immediately visible on the panel *and* the objects visible when you use the DOWN command). When you use the PRNT command, !DB/WORKBENCH dynamically allocates a SYSOUT file, writes the contents of the list to the file, and then frees the file for printing.

---

### Prerequisites for using the PRNT command

Before you can use the PRNT command, you must provide values for the user profile. You have two choices for the method to provide these values:

- On the !DB/WORKBENCH Configuration Information panel available with the Housekeeping option
- On the selection list displayed when you type **DOP** on the command line and press Enter

For more information about using the Housekeeping option, see the chapter “!DB/WORKBENCH Housekeeping Options” in *!DB/WORKBENCH Advanced User's Guide*.

---

### PRNT and the user profile

When you exit !DB/WORKBENCH, the system also records the values you use for class and destination in the profile variable. When you use the PRNT command again, you do not have to specify the values. The PRNT command does not affect the other profile variables (such as lines per page or special forms code) that you establish using the DOP command or the configuration option available with the Housekeeping option.

---

### Specifying required values for PRNT on the command line

To specify required values for PRNT on the command line, use this format:

PRNT *class destination*

Where

- PRNT is the required command.
- Class is a valid SYSOUT class (except \*).
- Destination is any valid printer.

---

### Printing displays of data

Once you meet the prerequisite for using the PRNT command, you can print by following these steps.

Step	Action
1	On the object list panel, type <b>PRNT</b> on the command line.
2	Press Enter. <b>Result:</b> The system prints the object list displayed to the destination printer.





## Chapter 8. Overview of Object List Panels

---

### Introduction

This chapter provides information about the object list panels available directly from the !DB/WORKBENCH Primary Menu. It provides an introduction to the system and helps you select the correct object list panel for the data you want to display.

### Chapter contents

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## Overview of the Chapter

---

### Organization of information in the chapter

The chapter focuses on the object lists that you can display by selecting an option from the !DB/WORKBENCH Primary Menu. It provides a survey of the data you can display from the object list panels, and includes a description of each panel (in alphabetical order) and its primary objects. It also includes charts that list the correct panels to select if you want to display these types of information:

- An overview of objects in the system and their relationships
- General information about an object (such as a table)

---

### Reminder about how to access panels

If you need a reminder on the methods for accessing object list panels, see “Using the Primary Menu and Object List Panels” on page 81.

---

### Organization of information and your experience with !DB/WORKBENCH

The chart provides examples of how to select the units to match your level of experience with !DB/WORKBENCH.

Condition	Units to Use
You are familiar with DB2 or with !DB/WORKBENCH and want a quick overview	“Selecting Panels to Display Overview Information” on page 150 “Selecting Panels to Display General Information” on page 151
You are familiar with DB2 or with !DB/WORKBENCH and want to find out which panel has specific information	“Selecting Panels to Display Specific Information” on page 152
You are unfamiliar with DB2 or with !DB/WORKBENCH and want an overview of the system	“Descriptions of Panels and Information about Objects” on page 153 and the units that follow

---

## Organization of information and your needs

Review the chart to select the information appropriate for the data you want to display.

	Overview	General	Specific	Description
	p.150	p.151	p.152	p.153
Identify the object list panels that display the relationships between commonly-used objects in the system	√			
Review the panels that display commonly-used objects		√		
Locate the panel that contains a specific object			√	
Read a description of each object list panel and the objects on the panels (Descriptions are listed in alphabetical order.)				√

---

## Other information about authorizations

This chapter does not cover the Authorizations option available from the !DB/WORKBENCH Primary Menu. For information about using the menu available from the Authorizations option and about the use of the Auths (Z) select, see the chapter “Using Authorizations to Manage the System” in *!DB/WORKBENCH Advanced User's Guide*. (The menu is not accessible to all users.)

**Additional information about data available from panels**

Review the chart for additional sources of information about data available from panels.

Information You Want	Source to Use
All panels that display data about a particular object such as tables or partitions	<p>The chapters in <i>!DB/WORKBENCH Reference Manual</i>:</p> <ul style="list-style-type: none"> <li>● For the data from the extract, see “Data Available from Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i></li> <li>● For the data from the DB2 catalog, see “Data Available from Object List Panels” in <i>!DB/WORKBENCH Reference Manual</i></li> </ul>
Specific information about a field or a panel	Type <b>Help</b> on the command line and press Enter or press the appropriate function key.

## Online Help and Object List Panels

---

### Help and the panels in the system

Help for object list panels includes general information about the panel as well as specific information about fields on the panel. The example shown is typical of the online Help information that is available. (When the information about an object list panel requires more than one Help panel, the word *More* is displayed in the lower right of the panel.)

```

----- HELP FOR DATABASE OBJECT LIST -----
Press END to return, ENTER to continue
or TAB to highlighted text and press ENTER to display more information.

Description      This panel shows the broadest summary of your DB2
                  information. Each row represents a single database listed
                  alphabetically by name.

                  For each database the panel displays the count of objects in
                  the database, the data base creator, the authorization ID of
                  the creator, the assigned storage group for the database, and
                  the default buffer pool. The last line of the list shows the
                  total number of DB2 objects.

Datasets         The total number of table spaces and indexes shown at the
                  bottom of the list tells you the approximate number of
                  data sets allocated to this DB2 ID.

ROSHARE          Displays the value of the ROSHARE parameter, either OWNER or
                  READ.

-----
GLOSSARY  INDEX  COMMANDS  FILTERS  WINDOWS  SELECTS  MORE->

```

## Selecting Panels to Display Overview Information

---

### Overview of information about objects and relationships

!DB/WORKBENCH provides two overviews of the DB2 system: an overview of major objects in the system and an overview of the relationship between these objects. Review this chart to determine the panel to select the overview of information you want.

<b>Type of Overview</b>	<b>Information You Want to Display</b>	<b>Panel to Use</b>
Overview of the relationship between objects in the system	Names for each object in this order: <ul style="list-style-type: none"> <li>● Databases in the system</li> <li>● Table spaces within the database</li> <li>● Tables in the table space</li> <li>● Indexes on the table</li> </ul>	All Objects panel

## Selecting Panels to Display General Information

### Types of general information about objects

!DB/WORKBENCH provides panels to display general information about frequently used objects. The left column of the chart lists these objects in alphabetical order and includes examples of the general information provided on the panel. The right column lists the name of the panel. Review this chart to determine the panel to use for general information you want to display.

<b>Information You Want to Display</b>	<b>Panel to Use</b>
Aliases defined (including the CREATOR and the associated CREATOR.TABLE_NAME)	Aliases panel
Columns (including the characteristics of the column and the name of the table or view that contains the column)	Columns panel
Databases (including the number of table spaces, tables, and indexes)	Databases panel
Indexes (including the characteristics of the index and the table on which the index is defined)	Indexes panel
Packages (including the qualifier and the bind date and time)	Packages panel
Plans (including the qualifier and the bind date and time)	Plans panel
Storage groups (including the catalog name and the number of volumes)	Storage Groups panel
Table spaces (including the number of tables and indexes and information about partitions, if any)	Table Spaces panel
Tables (including referential data about the number of parents and dependents, if any)	Tables panel
Views (including the quantity of columns in the view and the type of view)	Views panel

## Selecting Panels to Display Specific Information

---

### Panels and selects

You do not have to access an object list panel directly from the !DB/WORKBENCH Primary Menu. You can access another object list panel from the object list panel you are currently viewing. For example, you can display the relationship between an index and a table in two ways:

- Access the Tables panel, move the cursor to the row with the name of the table, type **I** (the select for indexes) in the SEL field, and press Enter.
- Access the Indexes panel, move the cursor to the row with the name of the index, type **T** (the select for tables) in the SEL field, and press Enter.

---

### Resources for specific information about objects

To see a series of charts showing specific data about objects and the !DB/WORKBENCH object list panel displaying the data, see the chapter “Data Available from Object List Panels” in *!DB/WORKBENCH Reference Manual*.



## Descriptions of Panels and Information about Objects

---

### Overview

This unit begins a series of descriptions for each of the panels that is available from the !DB/WORKBENCH Primary Menu and can display information about objects defined in the DB2 system. The descriptions are in alphabetical order, beginning with the Aliases panel and ending with the Views panel. The unit also explains the variations in the number of objects that the system displays when you select a panel directly from the !DB/WORKBENCH Primary Menu or display the panel by entering a command or a select.

---

### Contents of each description

Each description contains this information:

- General data displayed on the panel
  - Examples of the specific data that is displayed on the panel
- 

### Additional information in some descriptions

Descriptions of some panels also include this information:

- A list of commands that alter the display of data about objects (For example, if you have used the command PART, different data is displayed on the panel than if you used the command NOPART.)
- Additional uses for the panel (For example, some panels display data that you can use in enforcing standards.)
- Additional information about the panel (if any)

---

**Variations in number of objects displayed on the panel**

The description for panels does not include information about the variations in the number of objects displayed. The total number of objects varies based upon whether you have accessed the panel directly from the !DB/WORKBENCH Primary Menu or have entered a command or a select. Filtering also can affect the number of objects displayed. If you have used filtering before accessing the panel, the number of objects displayed is a subset of that total number.

<b>Method of Access</b>	<b>Number of Objects Displayed</b>	<b>Example</b>
Selection of the panel from the !DB/WORKBENCH Primary Menu	All of the objects defined in the DB2 system for the panel	Selection of the Packages panel to display all of the packages defined in the DB2 system
Entry of the command on the command line of a panel that supports the specific command	The objects defined for all objects listed on the panel	From the Tables panel, entry of the PACK command to display the packages dependent on all the tables listed
Entry of a select in the Select field of a panel that supports the specific select	The objects defined for the specific object you selected	From the Tables panel, entry of the Pkgs (K) select to display the packages dependent on the table you selected

## Aliases Panel

### Introduction to the Aliases panel

If you select the Aliases panel, the system displays a panel similar to this one.

```

ALIASES ----- DB/WORKBENCH -- DB2=DB31----- ALIAS 1 OF 4(F)
Cmd ==>                                         Scroll ==> DATA

                                A L I A S E S
Cmds:  DO (Menu)  LCTN/NOLCTN
Sels:  ? (Menu)  A Alter  K Pkgs    L Load    O Out DDL  P Plans
-----
SEL NAME          CREATOR  CREATED
                  AUTHID   BY          CREATOR TABLE NAME
-----
- PROACTION       IDMI03   IDMI03     DCSP40A.PROACTION
- PROAUDIT        IDMI03   IDMI03     DCSP40A.PROAUDIT
- PROOBJECT       IDMI03   IDMI03     DCSP40A.PROOBJECT

```

### Description

Review this chart for a description of the Aliases panel.

Category of Information	Information about the Panel
General data on the panel	Aliases that are defined in the DB2 system
Examples of specific data on the panel	Name of the alias Name of the table name associated with the alias The location name (if a location for a remote object is specified and if you have used the LCTN command)
Command that changes the display of information	LCTN (NOLCTN)

## All Objects Panel

### Introduction to the All Objects panel

If you select the All Objects panel, the system displays a panel similar to this one.

```

DISPLAY DB2 OBJECTS ----- DB/WORKBENCH -- DB2=DB31----- LINE 1 OF 50(F)
Cmd ==>                                     Scroll ==> DATA
                                     A L L   O B J E C T S
Sels:   ? (Menu)
-----
SEL  DATABASE  TBLSPC   TABLE   - INDEX NAME                STATS
-----
-    ACFIR61                BCMBBIL  PART1                Y
-    . . . . .            .PLPMS01A.BIL_ACCOUNT                Y
-    . . . . .            .PLPMS01A.BCMIBAT1                Y
-    . . . . .            .PLPMS01A.BIL_ACT_SUMMARY            Y
-    . . . . .            .PLPMS01A.BCMIBAS1                Y

```

### Description

Review this chart for a description of the All Objects panel.

Category of Information	Information about the Panel
General data on the panel	Structure of the organization of the DB2 system (Indentations show the table space within the database, the tables in the table space, and the indexes on the table.)
Examples of specific data on the panel	Name of each database Name of each table space, table, and index associated with the database Availability of statistics on table spaces, tables, and indexes
Additional information	The display on the All Objects panel combines four objects, each with its own set of selects. For example, the same set of selects is available for a database displayed on the Databases panel as on the All Objects panel.

## Columns Panel

### Introduction to the Columns panel

If you select the Columns panel, the system displays a panel similar to this one.

```

DISPLAY ALL COLUMNS ----- DB/WORKBENCH --- DB2=DB31----- COLUMN 1 OF 22,636
Cmd ==>                                     Scroll ==> PAGE

                                C O L U M N S

Cmds:   DO (Menu)
Sels:   Use any char. to display column details.
-----
SEL COLUMN NAME          TYPE      LEN  V  CREATOR  TABLE/VIEW          IPFNDFFLCSU
-----
- #EXTS                  INTG      4  T  CDB      DSPHIST              Y
- #EXTS                  INTG      4  T  PPCDB   DSPHIST              Y

```

### Description

Review this chart for a description of the Columns panel.

Category of Information	Information about the Panel
General data on the panel	Columns that are defined in the DB2 system
Examples of specific data on the panel	Name of each column Type (such as character, integer, date, or time stamp) Length and precision Name of the table or view that contains the column Characteristics of the column (such as whether the column is indexed or is a primary or foreign key)
Commands that change the display of information	SAME (ALL)

---

### Additional uses for the Columns panel

If you use the SAME command on the Columns panel, you can use the panel to enforce consistency of data. The SAME command compares columns with the same name to determine if any of those columns have variations in these values:

- Type (TYPE) or length (LEN) of the column
- Characteristics of the column, such as indexed (IX) or updatable (UP)

If !DB/WORKBENCH determines that any columns with the same name have variations in these values, the system displays the columns. For example, if you have ten columns with the name ACCOUNT, and one of them has a value for LEN of 3 and the remaining nine columns have a value for LEN of 8, !DB/WORKBENCH displays all ten columns. Because !DB/WORKBENCH displays all of the columns with the same name, you can identify any exceptions to standards.

## Databases Panel

### Introduction to the Databases panel

If you select the Databases panel, the system displays a panel similar to this one.

```

DATABASCS ----- DB/WORKBENCH -- DB2=DB31----- DATABASE 1 OF 1(F)
Cmd ==>
                                D A T A B A S E S
                                Scroll ==> DATA

Cmds:  DO (Menu)  GM/NOGM
Sels:  ? (Menu)  A Alter   C Copies  I Indexes  K Pkgs    L All
        O Out DDL P Plans  Q Query   S Tblspcs T Tables  V Views
        Z Auths  8 Migrate

-----
          T ----- NUMBER OF -----          CREATED          STORAGE  BUFFER
S DATABASE Y TBLSPCS  TABLES INDEXES CREATOR  BY          RO SHARE  GROUP    POOL
-----
_  USPRDREF          4      3      2 IDC113  IDC113          SYSDEFLT BPO

```

### Description

Review this chart for a description of the Databases panel.

Category of Information	Information about the Panel
General data on the panel	Overall organization of the DB2 system and the number of table spaces, tables, and indexes in the system
Example of specific data on the panel	<p>Name of each database</p> <p>Number of table spaces, tables, and indexes in the database</p> <p>Value for the parameter of a shared, read-only database</p> <p>Name of the storage group and buffer pool assigned to the databases</p>

---

### **Additional uses for the Database panel**

You can use the Database panel to enforce standards for installation. For example, if your organization follows the standard of allowing one table in a table space, you can use the data on this panel to evaluate whether this standard is being maintained.



# Indexes Panel

## Introduction to the Indexes panel

If you select the Indexes panel, the system displays a panel similar to this one.

```

DISPLAY ALL DB2 INDEXES -- DB/WORKBENCH --- DB2=DB2 ----- INDEX 1 OF 26(F)
Cmd ==>                               Scroll ==> DATA

                                I N D E X E S
Cmds:  DO (Menu)  PACK      PART/NOPART      STT/NOSTT
Sels:  ? (Menu)  A Alter   C Columns  D Details  H Hexdump  K Pkgs
        L Listcat N DS Info O Out DDL  P Plans   Q Query   R Runstat
        T Tables  U Utility X Exclude

-----
SEL INDEX NAME          CREATOR TABLE          INDEX      PRT U C I
                        AUTHID  SPACE    TABLE INDEXED  SPACE      NO. Q G T
-----
_  ALTCTRLX             CDB    STATDBAS  ALTERCONTROL  ALTCTRLX   D N
_  ALTCTRLX             DHDBTV3 STATDBAS  ALTERCONTROL  ALTCTRLX   D N
    
```

## Description

Review this chart for a description of the Indexes panel.

Category of Information	Information about the Panel
General data on the panel	Indexes that are defined in the DB2 system
Examples of specific data on the panel	Name of each index Name of the table on which the index is defined Name of the table spaces and index spaces associated with the index Number associated with partition (if any) Type of index (primary, unique, duplicate, used to enforce unique constraint, not null) Clustering index (Yes/No) Type 1/type 2
Commands that change the display of information	PART (NOPART) STT (NOSTT)

## Packages Panel

### Introduction to the Packages panel

If you select the Packages panel, the system displays a panel similar to this one.

```

DISPLAY ALL DB2 PACKAGES - DB/WORKBENCH --- DB2=DB31----- PACKAGE 1 OF 1,193
Cmd ==>                               Scroll ==> DATA

                                P A C K A G E S
Cmds:  DO (Menu)  DEP      GM/NOGM  PPLN/NOPPLN
Sels:  ? (Menu)  B BIND   C Coll   D Deps    F FREE    N Conns
        P Plans  R REBIND  T Details Z Auths

-----
SEL PACKAGE  CREATOR  OWNER    QUALIFIER COLLECTION        ---- BIND -----
        |         |         |         |         |         |         |
-  BJARNE   TSSC02   TSSC02   TSSC02   BJARNE_ISS   1999-02-28-00.35
-  BJARNX   TSSC02   TSSC02   TSSC02   BJARNE_ISS   1998-12-12-06.22
    
```

### Description

Review this chart for a description of the Packages panel.

Category of Information	Information about the Panel
General data on the panel	Packages defined in the DB2 system
Examples of specific data on the panel	Name of the package Name of the creator and owner associated with each package Name of the implicit qualifier (if the package is associated with a table, view, index, or alias without a qualifier) Date and time of the bind
Commands that change the display of information	PPLN/NOPPLN

## Plans Panel

### Introduction to the Plans panel

If you select the Plans panel, the system displays a panel similar to this one.

```

DISPLAY ALL DB2 PLANS ---- DB/WORKBENCH --- DB2=DB31----- PLAN 13 OF 560
Cmd ==>                                         Scroll ==> DATA
                P L A N S
Cmds:   DO (Menu)  COLL      DBR      DEP      GM/NOGM  PKG/NOPKG
Sels:   ? (Menu)  B BIND    C Coll  D Deps  F FREE   K Pkgs
        L Pkglist N Conns  R REBIND S DBRMs T Details Z Auths
-----
SEL PLAN      CREATOR  BOUND BY  QUALIFIER  DATE      TIME      ? SERVER
-----
-  CCEPLNR2  TSL253A  TSL253A  TSL253A  06/15/99  13:58:33
-  CCEPLNX1  TSL253A  TSL253  TSL253A  06/23/99  07:46:52

```

### Description

Review this chart for a description of the Plans panel.

Category of Information	Information about the Panel
General data on the panel	Application plans defined in the DB2 system
Examples of specific data on the panel	<p>Name of the plan</p> <p>Authorization ID of the owner of the plan and of the binder of the plan</p> <p>Name of the implicit qualifier (if the plan is associated with a table, view, index, or alias without a qualifier)</p> <p>Date and time of the bind</p> <p>Yes or No value that indicates whether the plan needs to be rebound</p> <p>Server that was specified when the plan was bound</p>
Commands that change the display of information	PKG (NOPKG)

## Storage Groups Panel

### Introduction to the Storage Groups panel

If you select the Storage Groups panel, the system displays a panel similar to this one.

```

DISPLAY STORAGE GROUPS----- DB/WORKBENCH --- DB2=DB31----- GROUP 1 OF 58
Cmd ==>                                     Scroll ==> DATA

                                S T O R A G E   G R O U P S

Cmds:   DO (Menu)
Sels:   ? (Menu)   S Volumes   U Utility   Z Auths
-----
SEL GROUP   CREATOR  #VOLS  VOLUME  VOLUME  VOLUME  CATALOG   SPACE  DATE
-----
-  DADDSTG   TDDB60    1  STGVOL                DB2V31
-  DB2BASE   TDDB32    1  DB2001                DB2V31

```

### Description

Review this chart for a description of the Storage Groups panel.

Category of Information	Information about the Panel
General data on the panel	Physical organization of data on the DB2 system
Examples of specific data on the panel	<p>Name of the storage group</p> <p>Number of volumes</p> <p>Volume serial numbers (The panel displays a maximum of three volume numbers.)</p> <p>Name of the VSAM catalog assigned to the Storage Group</p> <p>Amount of DASD space in kilobytes (K), megabytes (M), or gigabytes (G) (The system displays the value only if the DB2 STOSPACE utility has been run.)</p> <p>Date the utility was run</p>

## Table Spaces Panel

### Introduction to the Table Spaces panel

If you select the Table Spaces panel, the system displays a panel similar to this one.

```

TABLESPACES ----- DB/WORKBENCH --- DB2=DB31----- TBLSPC 1 OF 1,187
Cmd ==>                                         Scroll ==> DATA

                                T A B L E S P A C E S
Cmds:  DO (Menu) PART/NOPART
Sels:  ? (Menu)  A Alter  C Copies  D Details  E Estimate  H Hexdump  I Indexes
        K Pkgs   L Listcat N DS Info  O Out DDL  P Plans   Q Query   R Runstat
        T Tables U Utility V Views   X Exclude Z Auths   8 Migrate
-----
TABLE      PRT              NO.  --NUMBER OF--- STATS
SEL SPACE  NO. DATABASE CREATOR  CATALOG  SEGSZ  PRTS  TABLES INDEXES AVAIL
-----
_  DSN8S21E 1  DSN8D21A DCSP12  DB2V          4    1    2    YES

```

### Description

Review this chart for a description of the Table Spaces panel.

Category of Information	Information about the Panel
General data on the panel	Table spaces in the DB2 system
Examples of specific data on the panel	<p>Name of each table space</p> <p>Number associated with the partition</p> <p>Name of the associated database and catalog</p> <p>Quantity of pages in each segment (if the table space is segmented)</p> <p>Number of partitions in the table space</p> <p>Number of tables and indexes</p> <p>Availability of statistics for the table space</p>
Command that changes the display of information	PART (NOPART)

## Tables Panel

### Introduction to the Tables panel

If you select the Tables panel, the system displays a panel similar to this one.

```

TABLES ----- DB/WORKBENCH --- DB2=DB2 ----- TABLE 1 OF 4,298
Cmd ==>                                         Scroll ==> DATA
                T A B L E S
Cmds:  DO (Menu) ALIAS/NOALIAS      STT/NOSTT  SYN/NOSYN
Sels:  ? (Menu)  A Alter      C Columns  D Details  E Checks  F RI Info
        I Indexes K Pkgs      L Load     N Count    O Out DDL  P Plans
        Q Query   R Runstat   S Tblspcs V Views    X Exclude  Z Auths
-----
SEL TABLE NAME          CREATOR  CREATED  TABLE  ---REF---  STATS # OF
                           DATABASE AUTHID   BY       SPACE    PAR  DEP  AVAIL CHKS
-----
-   A                    DSQDBDEF IDF122  DCSP54  DSQTSDEF          YES
-   A                    DSQDBDEF IDF122A DCSP54  DSQTSDEF          YES
    
```

### Description

Review this chart for a description of the Tables panel.

Category of Information	Information about the Panel
General data on the panel	Tables in the DB2 system
Examples of specific data on the panel	Name of each table Name of the database and the table space associated with the table Referential data (number of parents and dependents) Availability of statistics for the table Number of check constraints on the table
Commands that change the display of information	ALIAS (NOALIAS) STT (NOSTT) SYN (NOSYN)

## Views Panel

### Introduction to the Views panel

If you select the Views panel, the system displays a panel similar to this one.

```

DISPLAY ALL DB2 VIEWS ---- DB/WORKBENCH --- DB2=DB31----- VIEW 1 OF 111
Cmd ==>
                                V I E W S
Cmds:  DO (Menu)  ALIAS/NOALIAS      SYN/NOSYN
Sels:  ? (Menu)  C Columns  D Details  K Pkgs    O Out DDL  P Plans
        T Tables  Z Auths
-----
SEL  CREATOR  VIEW NAME          COLS  CHK?  ON VIEW OR TABLE NAME
-----
-    TDDDB16A .KTETVB01          5     -    TDDDB36A.KTETT01E
-    TDDDB36A .KTETVB01          5     -    TDDDB36A.KTETT01E
  
```

### Description

Review this chart for a description of the Views panel.

Category of Information	Information about the Panel
General data on the panel	Views (on a view or a table) that are defined in the DB2 system
Examples of specific data on the panel	<p>Name of each view</p> <p>Number of columns in the view</p> <p>Yes or No value that indicates whether the Check Option was used when the view was defined</p> <p>View name or table name on which the view is defined or the number of views or tables (if the view is dependent on more than one view or table)</p>
Commands that alter display of information	<p>ALIAS (NOALIAS)</p> <p>SYN (NOSYN)</p>

## Tables and Views Panels and Access to Synonyms

---

### Overview

This unit contains information about display of synonyms from the Tables or Views panels.

---

### Methods to display information about synonyms

Although you cannot display synonyms by selecting an option from the !DB/WORKBENCH Primary Menu, you can display information about synonyms on tables and views by using the SYN command on the Tables panel or the Views panel. The chart shows the two commands available for controlling the display of synonyms.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Synonyms for all objects listed	Command	SYN
No synonyms	Command	NOSYN

---

### Additional information about synonyms and the DB2 catalog

You can display information about synonymys from the DB2 catalog, as well as from the extract. For information see the chapter “Data Available from Object List Panels” in *!DB/WORKBENCH Reference Manual*.



## Chapter 9. Methods for Displaying Data

---

### Introduction

This chapter contains information about the methods to use to display the data you want from object list panels. The chapter shows which panel, command, or select can provide the type and quantity of data you want.

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## Organization of the Chapter

---

### Organization of information in the chapter

The chapter focuses on the selection of a panel, command, or select to provide the type and quantity of data you want. The chapter includes a unit on two selects that occur on multiple panels. The chapter also includes a unit on each of the main objects in alphabetical order, beginning with aliases and ending with views.

Each of the units in the chapter covers two broad topics:

- Methods for displaying the quantity of information about the object that you want (such as all the plans in your system, the plans dependent on all objects listed, or the plans dependent on a single object)
- Display of information related to the object (such as the collections, connections, dependents, or DBRMs for plans)

---

### Organization of each unit about a DB2 object

In each unit about a DB2 object, you are given two types of information:

- How to display the quantity of information you want about an object
- What additional information you can display about the object from the panel

---

### Reminder about how to access panels, commands, and selects

You can access each of the panels discussed in the chapter from the Primary Menu. You can access commands and selects from a selection list or directly on the command line (for commands) or in the select fields (for selects). If you need a reminder about using these functions, see the chapters on “Using the Primary Menu and Object List Panels” on page 81 and “Using Selection Lists from Object List Panels” on page 99.

---

### Additional information about commands and selects

The *!DB/WORKBENCH Reference Manual* contains these quick reference tools for a complete list of all available commands and selects (including functions that display data):

- “Commands and Selects Available from Object List Panels”
- “Dictionary of Commands and Selects for Object List Panels”

## Online Help for Commands and Selects

---

### Help for commands and selects

Help panels include information about each command or select. The panel shown is typical of the Help information available. (When the information about a command or select requires more than one Help panel, the word *More* is displayed in the lower right of the panel.)

```

Cmd ==>
----- HELP FOR COLUMNS COMMAND -----
Press END to return, ENTER to continue
or TAB to highlighted text and press ENTER to display more information.

Description      Use the columns command to print a batch report showing all
                  of the columns of all the tables on the panel. You can invoke
                  COLS from the Databases, Table Spaces, and Tables object list
                  panels. Or you can select COLS from the Tables, Indexes, or
                  Views object list panels.

                  If you invoke COLS from the Databases object list panel, the
                  report lists all the tables in the database.

Filtering        You can use the FILTERING commands to limit the objects
                  displayed (and included in the COLS report).

Procedure        Type COLS on the command line. When you press ENTER the
                  system spools the report to JES to print using the printer
                  name and SYSOUT class in Housekeeping. When the report is
                  spooled, the message "Printed. ENTER/Scroll" is displayed in
                  the upper right corner of the panel.
-----
GLOSSARY INDEX  COMMANDS  FILTERS  WINDOWS  SELECTS

```

---

### Reminder about Help on the panels available with !DB/WORKBENCH

In addition to the information about commands and selects, Help panels include general information about !DB/WORKBENCH panels, such as the Databases, Table Spaces, and Tables panels. The Help panels also include specific information about fields on the panel.

## Availability of Commands and Selects

### Availability of functions on object list panels

Review the chart to determine the availability of commands or selects on an object list panel.

Function	Availability on Object List Panels	Example
Command	Any command listed at the top of the panel  Any command listed on the selection list when you enter the DO command on the command line	On the Table Spaces panel, you can enter the PART command shown on the panel.  You can also enter such commands as the ALTER, AMS, and COLS commands that are listed on the selection list.
Select	Any select listed at the top of the panel (In general, this is a complete list of the selects available.)  Any select listed on the selection list when you enter the ? select in the select field	On the Table Spaces panel, you can enter the Alter (A) select shown on the panel.  On the Table Spaces panel, you can also enter the Exclude (X) select that is listed on the selection list.

### A reminder about commands and selects

Review the chart to see the differences between a command and a select.

Function	Where Entered	Effect
Command	On the command line of the panel	All objects listed on the panel
Select	In the select field for the object	Only the selected object

## Methods of Display Available on More than One Panel

---

### Overview

This unit contains information about commands or selects that are available on multiple panels. It includes how to display commonly-needed data (such as authorizations, dataset information, detail, and image copies).

---

### Methods for display of commonly-needed information

Some methods for the display of data are available on several panels. For example, you may display the authorizations for objects on several panels, such as the Databases, Table Spaces, Tables, Views, Plans, Packages, and Storage Group panels. The chart lists information you may want to display from several different panels and the method to use to display this data.

Information You Want to Display	Method	Name
Authorizations for the selected object	Select	Auths (Z)
Details for the selected object	Select	Detail (D) or Detail (T) used on the Plans panel

---

### The Detail (D) select and the Views panel

For the Table Spaces, Tables, Indexes, Plans, and Packages panels, the Detail (D) or Detail (T) select results in detailed information about the object. For example, the Detail (D) select on the Table Spaces panel shows such details as the use of CLOSE, ERASE, and LOCK rules. It also shows the size and space values and the statistics that have been updated by the RUNSTATS utility.

For the Views panel, on the other hand, the Detail (D) select results in the display of the CREATE statement for the view you selected. If you enter the OUT command, the system generates the CREATE statements and displays a menu of options for processing the statements.

---

### Additional information about authorizations

For details about using the Auths (Z) select, see the chapter “Using Authorizations to Manage the System” in *!DB/WORKBENCH Advanced User's Guide*.

## Displaying Information about Aliases and the Aliases Panel

---

### Displaying information about aliases

Review the chart for methods for displaying information about aliases. (The chart also includes the method to use to turn off the display of the aliases on the panel.)

Information You Want to Display	Method	Name
Aliases for the DB2 system	Panel	Aliases
Aliases for all objects listed	Command (on Tables and Views panels)	ALIAS
No alias	Command (on Tables and Views panels)	NOALIAS

---

### Information about aliases on the Aliases panel

Review the chart for methods available on the Aliases panel to display additional information about location for aliases.

Information You Want to Display	Method	Name
Location for all aliases listed	Command	LCTN
No location for aliases	Command	NOLCTN

---

### If the table for the alias has been dropped

If the table the alias points to has been dropped and you also use the LCTN command, !DB/WORKBENCH displays the word --DROPPED-- instead of the location name. You can filter to list only those aliases with tables that have been dropped by using --DROPPED-- in the ALOC field.

## Displaying Information about Columns and the Columns Panel

---

### Displaying information about columns

Review the chart for methods for displaying information about columns.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Columns in the DB2 system	Panel	Columns
Columns for all tables for all objects listed (The system generates a batch report and displays a message indicating the report is printed.)	Command (on Databases, Table Spaces, Tables, and Views panels)	COLS
Columns for the selected object	Select (on Tables, Indexes, and Views panels)	Columns (C)

---

### Information about columns on the Columns panel

Review the chart for methods available on the Columns panel for displaying additional information associated with columns. (The chart also includes the method to use to restore the display after you have used the SAME command.)

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Columns that have the same name but different attributes	Command	SAME
All columns	Command	ALL

---

### Reminder about the SAME and ALL commands

If you need a reminder about the attributes that the SAME command uses, see the unit “Columns Panel” on page 157 in the chapter “Overview of Object List Panels” on page 145.

## Displaying Information about Databases and the Databases Panel

### Background

You can display two broad types of overview information about databases using the Databases panel and the All Objects panel:

- A list of major objects in the system such as the database, their creators, and the quantity of table spaces, tables, and indexes
- An indented list showing the relationship between major objects in the DB2 system either for all objects or for a selected object

### Displaying information about the DB2 system

Review the chart for methods for displaying information about the entire DB2 system.

Information You Want to Display	Method	Name
A list showing an overview of the major objects of the DB2 system	Panel	Databases
The relationship between all major objects in the system	Panel	All Objects
The relationship between major objects in the system and a selected object on the Databases panel	Select	L (All objects)

### Information about databases on the Databases panel

Review the chart for a method available on the Databases panel to display additional information about image copies.

Information You Want to Display	Method	Name
Image or system copies for the selected object	Select	C (Copies)



---

**Additional methods for displaying image copies**

When you use the Copies (C) select on the Databases panel, !DB/WORKBENCH displays a panel that lists image copies available for the extract. You have two other methods available for displaying image or system copies:

- Copies (C) select from the Table Spaces panel (From the Table Spaces panel, the Copies (C) select results in a panel that supports commands to display image copies from the DB2 catalog as well as the extract.)
- Indicating **Y** on the Include Object Types pop-up menu of the interactive display facility (for more information see the chapter “Displaying Data from the DB2 Catalog” on page 213)

## Displaying Information about Indexes and the Indexes Panel

---

### Displaying information about indexes

Review the chart for methods for displaying information about indexes.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Indexes in the DB2 system	Panel	Indexes
Indexes for the selected object	Select (on Databases, Table Spaces, and Tables panels)	Indexes (I)
Index type	Panel	Indexes

---

### Information about indexes on the Indexes panel

Review the chart for methods available on the Indexes panel for displaying additional information associated with indexes.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Dataset information for the selected object	Select	DS Info (N)
DB2 statistics for the selected object (if you have run the RUNSTATS utility)	Select	Runstat (R)
Hexdump results for the selected object	Select	Hexdump (H)
VSAM Listcat for the selected object	Select	Listcat (L)

---

**Display of information about partitions on the Indexes panel**

Review the chart for information about the two methods available on the Indexes panel to control the information about partitions with indexes.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Partitions for all objects listed	Command	PART
The first partition for all objects listed	Command	NOPART

---

**Display of information about statistics on the Indexes panel**

Review the chart for information about the two methods available on the Indexes panel used to control the display of statistics available for indexes.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Statistics for all objects listed	Command	STT
No statistics (The system displays other data about the objects listed.)	Command	NOSTT
DB2 statistics for the selected object (if you have run the RUNSTATS utility)	Select	Runstat (R)

## Displaying Information about Packages and the Packages Panel

### Displaying information about packages

Review the chart for methods for displaying information about packages.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Packages in the DB2 system	Panel	Packages
Packages dependent on all objects listed	Command (on the Databases, Table Spaces, Tables, Indexes, Views, and Aliases panels)	PACK
Packages dependent on the selected object	Select (on the Databases, Table Spaces, Tables, Views, Plans, and Aliases panels)	Pkgs (K)

### Information about packages on the Packages panel

Review the chart for methods available on the Packages panel for displaying additional information associated with packages.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Connections for the selected object	Select	Conns (N)

### Information about plans on the Packages panel

Review the chart for methods for showing information about plans for packages.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Parent plans for packages	Command	PPLN
No parent plans for packages	Command	NOPPLN

## Displaying Information about Plans and the Plans Panel

---

### Displaying information about plans

Review the chart for methods for displaying information about plans.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Plans in the DB2 system	Panel	Plans
Plans that are dependent on all objects listed	Command (on the Databases, Table Spaces, Tables, Indexes, Views, or Aliases panels)	PLAN
Plans that are dependent on the selected object	Select (on the Databases, Table Spaces, Tables, Indexes, Views, or Aliases panels)	Plans (P)

### Information about collections on the Plans panel

Review the chart for methods available on the Plans panel for displaying collections associated with plans.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Collections for all objects listed	Command	COLL
Collections for the selected object	Select	Coll (C)

### Information about connections on the Plans panel

Review the chart for methods for displaying information associated with plans. (The Connection select is also available from the Packages panel.)

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Connections for the selected object	Select	Conns (N)
Package lists for the selected object	Select	Pkglist (L)

### Information about DBRMs on the Plans panel

Review the chart for methods available on the Plans panel for displaying information about DBRMs associated with Plans.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
DBRMs for all objects listed	Command	DBR
DBRMs for the selected object	Select	DBRMs (S)

### Information about dependents on the Plans panel

Review the chart for methods available on the Plans panel for displaying information about dependents associated with Plans.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Dependents for all objects listed	Command	DEP
Dependents for the selected object	Select	Deps (D)

---

**Information about packages on the Plans panel**

Review the chart for methods for showing information about packages associated with plans.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Packages for all plans listed	Command	PKG
No packages	Command	NOPKG

## Displaying Information about Storage Groups and the Storage Groups Panel

### Displaying information about storage groups

Review the chart for methods for displaying information about storage groups.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Storage groups in the DB2 system	Panel	Storage Groups

### Information about storage groups on the Storage Groups panel

Review the chart for methods available on the Storage Groups panel for displaying additional information associated with storage groups.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Volumes in all storage groups listed	Command	VOLS
Volumes in the selected storage group	Select	Volumes (S)



## Displaying Information about Table Spaces and the Table Spaces Panel

---

### Displaying information about table spaces

Review the chart for methods for displaying information about table spaces.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Table spaces in the DB2 system	Panel	Table Spaces
Table spaces for the selected object	Select (on the Databases or Table panels)	Tblspcs (S)

---

### Information about table spaces on the Table Spaces panel

Review the chart for methods available on the Table Spaces panel for displaying additional information associated with table spaces.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Dataset information for the selected object	Select	DS Info (N)
DB2 statistics for the selected object (if you have run the RUNSTATS utility)	Select	Runstat (R)
Hexdump results for the selected object	Select	Hexdump (H)
Image or system copies for the selected object	Select	Copies (C)
VSAM Listcat for the selected object	Select	Listcat (L)

### Information about partitions on the Table Spaces panel

Review the chart for information about the two methods available on the Table Spaces panel to control the information about partitions.

Information You Want to Display	Method	Name
Partitions for all objects listed	Command	PART
The first partition for all objects listed	Command	NOPART

### Additional methods for displaying image copies

When you use Copies (C) select on the Table Spaces panel, !DB/WORKBENCH displays a panel that lists image copies available from the extract. You can use the CAT command (available on the panel only) to display image copies from the DB2 catalog. (If you want to redisplay the image copies from the extract or to restore a copy, you can use other commands and selects available on the panel.)

You have two other methods available for displaying image or system copies:

- Copies (C) select from the Databases panel
- Indicating **Y** on the Include Object Types pop-up menu of the interactive display facility (for more information see the chapter “Displaying Data from the DB2 Catalog” on page 213)

## Displaying Information about Tables and the Tables Panel

---

### Displaying information about tables

Review the chart for methods for displaying information about tables.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Tables in the DB2 system	Panel	Tables
Tables for the selected object	Select (on the Databases, Table Spaces, Indexes, and Views panels)	Tables (T)

### Information about statistics on the Tables panel

Review the chart for information about the two methods available on the Tables panel to control the information about statistics for tables.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Statistics for all objects listed	Command	STT
No statistics (The system displays other data about the objects listed.)	Command	NOSTT
DB2 statistics for the selected object (if you have the RUNSTATS utility)	Select	Runstat (R)

### Information about synonyms on the Tables panel

Review the chart for information about the two methods to control the information about synonyms for tables.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Synonyms for all the objects listed	Command	SYN
No synonyms	Command	NOSYN

## Display of Information for Tables with Referential Data

---

### If you have referential data associated with a table

If the REF column of the Tables panel contains information indicating that the table contains parents and/or dependents, you can display additional data. Review the chart for methods for displaying information about referential data from the Tables panel.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Referential integrity information for the selected table	Select	RI Info (F)
Tables in the table space set for all tables listed (A table space set comprises table spaces of referentially related tables.)	Command	TSSET

---

### If you have accessed the panel showing referential data

If you have used the RI Info (F) select with a table that has referential data, the system displays the Referential Relations panel. Review the chart for methods for displaying additional information from the Referential Relations panel.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
A box diagram of referentially related tables	Command	MAP
Dependent tree showing relationship for the selected object	Command	DEP
Table spaces that contain referential data for the selected table	Command	SET

## Displaying Information about Views and the Views Panel

---

### Displaying information about views

Review the chart for methods for displaying information about views.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Views in the DB2 system	Panel	View
Views defined on the tables for selected objects	Select (for Databases, Table Spaces, or Tables panels)	Views (V)

---

### Information about synonyms on the Views panel

Review the chart for information about the two methods available on the Views panel to control the information about synonyms.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Synonyms for all the objects listed	Command	SYN
No synonyms	Command	NOSYN

## Introduction

This chapter provides an overview of filtering from the command line and from the selection list for filters. It includes examples of how to select and use filters to control the display of data. By using filtering, whether online or in batch, you can quickly produce a report showing only the data you need or isolate the data you want to modify.

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## Overview of the Chapter and Filtering

---

### Organization of information in this chapter

This chapter contains the fundamentals about filtering and examples. It includes information about these topics:

- Methods for entering filters online on the command line or in a batch program or from the FILT selection list online
  - Information about using each of the sections on the FILT selection list and about performing similar functions on the command line
- 

### Purpose for filtering

Filtering results in determining the objects that meet the criteria you specify. !DB/WORKBENCH can either display the filtered objects online or (if you also use the PRNT command) print the object list in batch. Filtering can increase your productivity while reducing errors in your operation. The chart lists common reasons for filtering, either online or in batch, and an example.

Reason for Filtering	Example
Display a subset of the object list so you can review information easily	Restrict an object list to show the table spaces with a common creator ID
Identify exceptions	Display all the databases with no table spaces Display all the index spaces with no FREE space
Display a subset list for an operation or for processing	Print a report listing all the table spaces with no tables Use a function such as alter or bind, or use a utility

---

### Additional information about filtering

The *!DB/WORKBENCH Reference Manual* contains these chapters on filtering:

- “Methods for Filters—Object List Panels”
- “Filters Available from Object List Panels”
- “Methods for Filters—Authorizations”



---

**Organization of information and your needs**

Review the chart to select the information appropriate for the data you want.

	<b>Process</b>	<b>Resetting</b>	<b>Using</b>	<b>Panels</b>	<b>Authorization</b>	<b>Overview</b>	<b>Types</b>	<b>Name Filters</b>	<b>Status Filters</b>	<b>Selection Filters</b>
	p.195	p.196	p.198	p.200	p.202	p.204	p.206	p.208	p.210	p.211
Review background about filters	√			√						
Turn on a filter from the command line or from the FILT selection list	√		√							
Be sure prior filters are not still in effect		√								
Use a filter for an authorization (including from the Collections or Packages panels)					√					
Filter using a name (DB=DBTEST)						√	√	√		
Filter using a status (STATS=Y)						√	√		√	
Filter using a selection (REFS>0)						√	√			√

---

**Additional resources in this guide and batch processing**

This guide also includes information on using filters in batch to control the objects that the job affects. For information about using filters with batch, see the chapter “Requirements for Creating Batch Jobs” in *!DB/WORKBENCH Advanced User's Guide*.

## Online Help and Filtering

### Help and the panels

For specific information about filtering, select filters from a Help panel. The panel shown is typical of the Help information available. (When the information about filtering on a specific panel requires more than one Help panel, the word *More* is displayed in the lower right of the panel.)

```

Cmd ==>
----- HELP FOR FILTER NAME ABBREVIATIONS -----
Press END to return, ENTER to continue
or TAB to highlighted text and press ENTER to display more information.

CLTYPE          = Column Type:

                CH = Character
                DA = Date
                DE = Decimal
                FL = Floating point
                GR = Graphic
                IN = Integer
                LG = Long vargraphic
                LV = Long varchar
                SM = Small integer
                TI = Time
                TS = Timestamp
                VC = Varchar
                VG = Vargraphic

-----
GLOSSARY  INDEX  COMMANDS  FILTERS  WINDOWS  SELECTS  <-PREV  MORE->
    
```

## Background about the Process of Using Filters

---

### Overview

This unit introduces ways you can use filtering and shows the broad process you follow when you use filters.

---

### Background about filtering and !DB/WORKBENCH

With !DB/WORKBENCH you have several choices for filtering:

- Compare objects against one criteria or multiple criteria
  - Compare objects to determine if they are equal or not equal to the criteria
  - Maintain criteria that you set, but do not use the criteria for a specific task
  - Control filters online from the command line or the FILT selection list or in batch programs
- 

### Background about the process

When you use filters, you follow these broad steps.

Step	Action
1	Turn off any filters you set previously that are no longer appropriate for the task you want to perform.
2	Specify whether you want !DB/WORKBENCH to compare all objects in the list against the criteria to see if they are equal or not equal.
3	Use one or more filters either from the command line or the FILT selection list.  <b>Result:</b> !DB/WORKBENCH performs the type of comparisons you selected using the criteria in the filter you used and then displays the data.

## How to Reset Existing Filters

---

### Overview

This unit reviews how you can reset existing filters.

---

### Background about the term reset

With !DB/WORKBENCH, you can reset or turn off filters you previously set. If you use the NOFILT (or NOF) command, !DB/WORKBENCH clears all filters.

---

### When to issue the NOFILT command to reset filters

!DB/WORKBENCH does not automatically reset filters when you switch between object types, even if you return to the main menu panel to switch objects. After you access the main menu panel to switch objects, the filter indicator (F) can display on the new panel. The display on the new object panel may or may not be filtered. To be certain your display is filtered the way you have specified, always issue the NOFILT (NOF) command, when you switch between objects. Then issue a new filter command on the new object list.

If you access a new object list, by opening a new session in !DB/WORKBENCH, all filtering is automatically turned off.

---

### Methods to reset a filter from the command line

These methods exist to reset filters by performing actions from the command line.

Number of Filters You Want to Reset	Action to Perform
A specific filter	Type the keyword for the filter and the equals (=), and then press Enter. <b>Example:</b> Type <b>DB=</b> and press Enter.
All Filters	Type <b>NOFILT</b> on the command line and press Enter.

---

## Methods to reset a filter from the selection list

This method exists to reset filters by performing this action from the `FILT` selection list.

Number of Filters You Want to Reset	Action to Perform
A specific filter	Delete the value in the field, press Enter, then type <b>END</b> on the command line and press Enter, or press the appropriate function key.  <b>Example:</b> Delete the value <i>DBTEST</i> from <code>DB=DBTEST</code> data

---

## Implications for batch processing

Although filtering is significant for online operations because it can provide correct results in a timely manner, successful filtering is vital to batch processing. To avoid producing incorrect results in batch, be sure to use the `NOFILT` command as a command in your batch program. If you need additional information on filtering in batch, see the chapter “Requirements for Creating Batch Jobs” in *!DB/WORKBENCH Advanced User's Guide*.

## How to Use a Filter

---

### Overview

This unit contains information about the general procedures for using filters directly from the command line or from the FILT selection list. It also contains information about how to reset filters. (It does not cover the variety of wild cards and option codes available from !DB/WORKBENCH. These details are covered in subsequent units.)

---

### Characteristics of the examples

In the example shown in this unit, these characteristics exist:

- No prior filter has been set
  - You want to identify all tables whose database is DBTEST
- 

### Example of using a filter from the command line (fast path)

The example shows how to use a filter from the command line.

Step	Action
1	On the Tables panel, type <b>DB=DBTEST</b> on the command line.
2	Press Enter.  <b>Result:</b> The system filters the object list using the value you set and then displays the object list for all tables whose database is DBTEST.

---

### Example of using a filter from the selection list

The example shows how to use filters from the FILT selection list.

Step	Action
1	On the Tables panel, type <b>FILT</b> on the command line.
2	Press Enter. <b>Result:</b> The system displays a selection list, that is scrollable, lists the available filters, and shows that no filters are in effect on the panel.
3	On the FILT selection list, type <b>DBTEST</b> in the DB field.
4	Press Enter.
5	Type END on the command line and press ENTER, or press the appropriate function key. <b>Result:</b> The system filters the object list according to the values you set and then displays the object list for all tables whose database is DBTEST.

---

### If you want to use more than one filter

If you want to use more than one filter, you can perform these additional actions:

- On the command line, type two filters joined by a semicolon (;).  
(Example: DB=DBTEST;CR=STTD38)
- On the selection list, type the value for each filter you want before you press Enter.

## Filtering and Panels

---

### Overview

This unit contains general information including how to recognize if any filters are in effect and how filters entered for one panel can affect the display of other panels.

---

### Filtering and types of panels

!DB/WORKBENCH supports filtering for object list panels such as the Database or Table Spaces panels. It also supports filters for panels showing authorizations.

---

### 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, such as 1 of 147(F). On object list panels, the F indicates that an object list filter is in effect; on an authorizations panel, an authorizations filter.

---

### Effects of filtering from one panel to another panel

When you type the **FILT** command on a panel, the system displays the selection list of filters available for the specific panel. If a value on a **FILT** selection list on one panel is the same as the value on another, the value you set on one selection list applies to the other panels.

For example, the **DB** filter is common to many selection lists, such as the selection list for the panels for databases, table spaces, tables, and columns. If you type **DB=DSSPN93** on the Databases panel, the value applies to the other Table Spaces, Tables, and Columns panels as well. Thereafter, anytime you use a panel with a **DB** filter, !DB/WORKBENCH uses the same value that you set on the Databases panel.



---

## Filtering and variation in consequences

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. The table shows the differences on the display of objects that can occur with filter settings.

<b>Panel with Filter Setting of Parents&gt;2</b>	<b>Data Displayed</b>
Database	Those databases that have any referential parents
Table Spaces	Those table spaces that have any referential parents
Tables	Only those tables that have more than 2 referential parents

---

## Filtering and additional sessions

Filtering that you establish in one session is independent of filtering in another session. For example, if you used multiple !DB/WORKBENCH session, or if you have started two independent sessions with !DB/WORKBENCH, the filtering is independent in both cases.

## Filtering and Authorizations

---

### Overview

This unit contains general information about control of filtering from the Authorizations panel, about the date and time filters, and about the FILT selection list for authorizations.

---

### Filtering, the Authorizations panel, and other panels

Filtering on the Authorizations panel and filtering on the other panels are independent. For example, if you type the NOFILT command on the Databases panel, these events occur:

- You reset values for filters not only on the Databases panel, but also on the other object list panels, such as the Table Spaces, Tables, and Indexes panels.
  - You do not reset the filtering values on the Authorizations panel. (To reset those values, you must be on one of the Authorizations panels and enter the command.)
- 

### Date and time filters on the Authorizations panel

The operation of the date and time filters varies with the amount of data you provide. For example, if the TIME=12, the system compares only the hour, and not minutes. Also, if the DATE=92, the system compares only the year and displays all those objects that were granted on or after January 1, 1992.

The operation of date and time filters also varies with the type of comparison:

- With FILT=E, the system displays dates and time greater than or equal to the specified date.
- With FILT=N, the system displays dates and time less than or equal to the specified date.

---

## Organization of the FILT selection list for authorizations

The organization of the FILT selection list available for filtering lists of authorizations is different from the FILT selection list for other objects such as databases, table spaces, and tables. The basic operation of the types of filters, however, is the same, and the general information in this chapter about how to use sections of the FILT selection list is applicable to filters of authorizations as well as to other filters.

!DB/WORKBENCH provides a common filter panel for most authorizations. Two of the authorizations panels, however, have distinctive values. They are the Collections and Packages panels.

---

## Additional information about filtering with authorizations

This guide also includes the chapter “Methods for Filters—Authorizations” in *!DB/WORKBENCH Reference Manual*. The chapter includes the filters common to all authorizations panels and those specific to the Collections and Packages panels.

## Overview of Methods for Using Filters

### Overview

This unit introduces a series of units on methods for filtering. These methods are applicable from the command line or the FILT menu.

### FILT selection list and the command line

Although this unit covers the FILT selection list, the methods for filtering are also available from the command line or by using a batch program.

### Sections of the selection list and subsequent units

The selection list shows the organization of the four sections that can occur on FILT selection lists (for all panels except the Authorizations panel and the Collections and Packages panels) and the list shows the unit to use for information about the section.

```

DATABAS  ----- DB/WORKBENCH --- DB2=DB2 ----- DATABASE 1 OF 4(F)
Cmd ==> FILT
----- DATABASE FILTERS -----
Cmds:  DO (Menu)
Se1s:  ? (Menu)  A Alter  C Copies  I I
        0 Out DDL  P Plans  Q Query  S T
        Z Auths  8 Migrate

-----
----- NUMBER OF -----
SEL DATABASE TBLSPCS  TABLES INDEXES CREATOR
-----
- AFCIR61      4      46      64  Tddb43
- AFMDR61     62      62      62  D#SYSPPS
- AKVPMT      -      -      -   TSGM15
- ALECDDB     1      1      -   Tddb19

*TOTALS*      67     109     126
*****
***** BOTTOM OF LIST *****

NAME VALUES
DB=
CR=
CB=
SG=
BP=
GM=

STATUS VALUES
ICOPY=  Y N
VIEWS=  Y N
ROSHARE= Owner Read
TYPE=  W

SELECTION VALUES
OP VALUE
SPACES  --
TABLES  --
INDEXES  --
SYNS    --
PARENTS --
DEPDTS  --
REFS    --
*** BOTTOM OF LIST ***
    
```

---

**Sections of the selection list and subsequent units (continued)**

The list defines the frequently used elements of a FILT selection list. (The list also shows the unit to use for information about each section that can occur on the FILT selection list.)

- 1** Used for scrolling
- 2** Used for comparisons (See “Specifying the Type of Comparison for Filtering” on page 206.)
- 3** Used for name values (See “Specifying a Name for Filtering Objects” on page 208.)
- 4** Used for status values (See “Specifying a Status Value for Filtering Objects” on page 210.)
- 5** Used for selection of numeric values (See “Specifying a Selection Value for Filtering Objects” on page 211.)
- 6** Bottom of list

## Specifying the Type of Comparison for Filtering

### Overview

This unit includes background information and methods for specifying the type of filter from the command line and the selection list.

### Specifying the type of comparison from the command line

The chart shows which commands to use to specify the type of comparison for the system to use and the actions you want the system to perform.

<b>Actions You Want the System to Perform</b>	<b>Command to Use</b>
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
Do not apply filtering (but maintain the values for the filters)	FILT=O

### Specifying the type of comparison from the selection list

The chart shows which value to enter on the FILT selection list to specify the type of comparison for the system to use and the actions you want the system to perform.

<b>Action You Want the System to Perform</b>	<b>Value in the Comparison Field</b>
Identify and display all values that are equal to the specified filters	E(qual to)
Identify and display all values that are not equal to the specified filters	N(ot equal to)
Do not apply filtering (but maintain the values for the filters)	O(ff)

---

**Difference in effect of FILT=0 and NOFILT commands**

The FILT=0 command and the NOFILT commands serve different purposes. The chart shows which one meets your needs.

<b>Task You Want to Perform</b>	<b>Command to Use</b>
Use the filter values you have set at some later time, but you do not want to use them now	FILT=0
Turn off all filter values at this time (If you used the the FILT command to display the selection list, the system shows no filter in effect.)	NOFILT

## Specifying a Name for Filtering Objects

---

### Overview

This unit includes background information and information about special characters available if you want to specify names. It also includes examples of using these special characters with names.

---

### Background

You can enter the exact name, or you can mask operand names for such filters as the names of the database, table space, table, and for the authorization ID for the creator. The names that you can specify vary with the panel. In either case, you can specify the exact name or the masked name in two ways:

- On the command line
  - On the FILT selection list
- 

### Special characters available to specify names

The chart lists special characters you can use to specify the names you want and explains what the special character represents when used within a string or at the end of a string. For example, when used *within* a string, the underscore ( `_` ) indicates a character exists at that position. On the other hand, when used at the *end* of a string, the underscore ( `_` ) indicates no characters can follow.

Special Character	Used Within a String	Used at the End of a String
* (asterisk)	A character exists at that position	More characters can follow the * character
_ (underscore)	A character exists at that position	No character can follow the _ character
¬ (not)	No character exists at that position	No character can follow the ¬ character



**Characteristics of the examples for specifications for name**

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

CASPNN	DSQRS
CASPNN1	DSSPN
DASPN	DSSPNN
DSAPN	DSSPO

**Example of specifications of names**

The chart shows examples of specifications of names using special characters.

<b>Names You Want to Display</b>	<b>Values for Filters</b>	<b>Objects Displayed After Filtering</b>
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 are 5 characters or less	TB=*****¬ (with FILT=E)	DASPN DSAPN DSQRS DSSPN DSSPO
All tables that are over 5 characters	TB=*****¬ (with FILT=N)	CASPNN CASPNN1 DSSPNN

## Specifying a Status Value for Filtering Objects

---

### Overview

The unit includes background information about the operation of filters for Status Values. It also includes general information about how to specify these values.

---

### Background

The filters for some panels include a section of Status Values. These filters operate the same as the name filters. For example, if you use a name filter such as `TB=DSS*`, the system displays all table names that meet the criteria. In the same way, if you use a Status Value such as `STATS=Y`, the system displays all tables that have statistics available. In either case, you can specify a Status Value in two ways:

- On the command line
  - On the FILT selection list
- 

### Specifying a Status Value

No special characters or operands exist for Status Values. The possible values for the filter are listed on the same line as the status filter. For example, the values available for `STATS` are `Y` or `N`. You can type only one of these letters in the field.

## Specifying a Selection Value for Filtering Objects

---

### Overview

The unit includes background information about Selection Values and the methods for entering them. It also includes a chart listing OP codes available with Selection Values and examples of their use.

---

### Background about Selection Values

The filters for Selection Values operate differently from both name filters and Status Value filters. The filters for Selection Values allow OP codes to be used with a value.

Each Selection Value consists of one of two types of information:

- The quantity of an object (such as the number of views associated with a table)
  - A number distinctive for the object (such as the maximum length of any record in a table)
- 

### Background about methods for entering Selection Values

Selection Values consist of the keyword, an OP code, and a number. You can specify these filters in two ways:

- On the command line
- On the FILT selection list

---

**Option codes available to specify the OP code for comparison**

Review the chart for OP codes you can use to specify the way that the system performs the comparison.

<b>Comparison of the Value in the Database</b>	<b>Required OP Code</b>	<b>Example</b>
Equal to the value in the filter	=	Indexes=4
Not equal to the value in the filter	≠	Indexes≠4
Less than the value in the filter	<	Indexes<4
Greater than the value in the filter	>	Indexes>4
Less than or equal to the value in the filter	<=	Indexes<=4
Greater than or equal to the value in the filter	>=	Indexes>=4

---

**Example usage of OP codes with Selection Values**

Review the chart for examples of ways to use OP codes to display the information you want.

<b>Name of Object You Want to Display</b>	<b>Panel in the Example</b>	<b>Examples Using OP Codes</b>
All plans that use more than one DBRM	Plans	DBRMS>1 or DBRMS>=2
All databases that have no table spaces defined	Databases	SPACES<1 or SPACES=0 or SPACES<=0
All tables that have relationships defined for referential integrity	Tables	REFS>0

# Chapter 11. Displaying Data from the DB2 Catalog

---

## Introduction

This chapter provides information about using the !DB/WORKBENCH interactive display facility (IDF) to display data obtained by accessing the DB2 catalog.

## Chapter contents

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Optionally Accessing Other DB2 Catalogs . . . . .	231

## Overview of the Chapter

### Organization of information in this chapter

This chapter provides information about interactively displaying data from the DB2 Catalog. Review the chart to select information appropriate for your task.

	<b>Introduction</b>	<b>General Information</b>	<b>System Prerequisites</b>	<b>Accessing the Menu</b>	<b>Menu Overview</b>	<b>Using the Menu</b>	<b>Commands, Filters, and Selects</b>
	p.216	p.217	p.218	p.220	p.222	p.224	p.229
Review purposes and considerations for the Interactive Display Facility (IDF)	√						
Determine prerequisites for using the Interactive Display Facility (IDF)		√					
Access and use the menu			√	√	√	√	
Use commands and selects with the interactive display facility (IDF)							√

---

**Resources available about !DB/WORKBENCH and catalog data**

If you want information about the objects and their attributes that you can display from the catalog using the IDF menu, see “Data Available from Object List Panels” in *!DB/WORKBENCH Reference Manual*.

---

**Help and information needed to use interactive displays**

Online Help provides these types of information that are needed to use interactive displays:

- Operation of the Query command and Query (Q) select
- Panels that are available from the Interactive Display Menu (which is accessed when you use the Query command or Query (Q) select)
- Commands and selects available from the panels

## Introduction to Interactive Displays

---

### Overview

This unit contains information about reasons for using interactive displays and about issues you should consider before using interactive displays.

---

### Reason for using interactive displays

When you make changes to your DB2 data, such as creating or altering an object, these changes are not reflected in your existing !DB/WORKBENCH extract. In order to see the most current status of your data without performing a full extract, you can use the !DB/WORKBENCH interactive display facility to display data from the DB2 catalog instead of from the extract.

---

### Performance considerations when using interactive displays

Review these considerations before using interactive displays:

- Direct catalog accesses may require significant time to process.
  - Displays that require significant time affect the performance of the DB2 system for all users.
  - If using DB2 V4, you may want to consider the effect of adding indexes to improve performance.
- 

### Interactive displays and the !DB/WORKBENCH environment

When you exit IDF and return to !DB/WORKBENCH, the !DB/WORKBENCH environment is reinitialized.



## Prerequisites for Accessing Interactive Displays

---

### Overview

This unit contains information about prerequisites that you must meet before you can access the Interactive Display menu.

---

### Required !DB/WORKBENCH authorizations

Before you can use IDF, the administrator for !DB/WORKBENCH must use the Update Authorization Information available from the Housekeeping option on the !DB/WORKBENCH Primary Menu to authorize your use of IDF.

For additional information, see the chapter “!DB/WORKBENCH Housekeeping Options” in *!DB/WORKBENCH Advanced User's Guide*.

---

### Required DB2 authority

In addition to !DB/WORKBENCH authorization, you must have DB2 authority to access the catalog. Therefore, you must have SELECT authority on DB2 catalog tables.

---

### Prerequisites for accessing a catalog for a remote DB2 subsystem

You can optionally access a catalog for a remote DB2 subsystem. The prerequisites for doing so are identical to the prerequisites for a local subsystem, as defined in this unit. For further information about accessing a catalog for a remote DB2 subsystem, see “Optionally Accessing Other DB2 Catalogs” on page 231 in this chapter.

## Methods to Access the Interactive Display Menu

---

### Overview

This unit contains information about the three methods you can use to access the interactive display facility .

---

### Accessing the Interactive Display Menu

You can access the Interactive Display Menu from the:

- !DB/WORKBENCH Primary Menu
  - Select field of the Databases, Table Spaces, Tables, or Indexes panel
  - Command line of the Databases, Table Spaces, Tables, or Indexes panel
- 

### Accessing the menu from the !DB/WORKBENCH Primary Menu

Follow these steps to access the Interactive Display menu from the !DB/WORKBENCH Primary Menu.

Step	Action
1	On the !DB/WORKBENCH Primary Menu, type <b>Q</b> in the Option field.
2	Press Enter.  <b>Result:</b> !DB/WORKBENCH displays the Interactive Display Menu with one of the following in the Database, Tablespace, Tables Creator, and Tables Name fields: <ul style="list-style-type: none"> <li>● The wild card symbol (%)</li> <li>● The values you last used with IDF. Note that, in order for !DB/WORKBENCH to display values in any or all of these fields, you must have used the values to access the DB2 catalog. If you filled in any or all of the fields but did not execute a query to the catalog, !DB/WORKBENCH does not save the values.</li> </ul>

---

### Accessing the menu using a select from an object list panel

You can access the Interactive Display Menu from the Databases, Table Spaces, Tables, or Indexes panel using the Query (Q) select. Follow these steps.

Step	Action
1	On the object list panel, type <b>Q</b> in the select field. <b>Example:</b> On the Tables panel, type <b>Q</b> in the select field for the table whose information you want to display from the catalog.
2	Press Enter. <b>Result:</b> !DB/WORKBENCH displays the Interactive Display Menu with the Database, Tablespace, Tables Creator, and Tables Name fields displaying all of the available data associated with your selected object. <b>Example:</b> If you use the Q select for a table on the Tables panel, !DB/WORKBENCH fills all four fields of the Interactive Display Menu. If you use the Q select for a database on the Databases panel, only the Database field is filled on the Interactive Display Menu.

---

### Accessing the menu from the command line of an object list panel

You can access the Interactive Display Menu from the !DB/WORKBENCH Primary Menu and from the Databases, Table Spaces, Tables, or Indexes object list panels using the **Q** command from the command line. You can optionally specify a database name when using the Q command. Follow these steps.

Step	Action
1	On the object list panel, type <b>Q</b> on the command line. <b>Example:</b> On the Tables panel, type <b>Q CANDLE</b> on the command line if you want to display information from the DB2 catalog for the CANDLE database.
2	Press Enter. <b>Result:</b> !DB/WORKBENCH displays the Interactive Display Menu with the database name you specified in the Database field and the wild card symbol (%) in the balance of the fields. If you do not specify a database name, IDF inserts the last-used value or values into the fields.

## Overview of the Interactive Display Menu

### Overview

This unit describes the elements of the Interactive Display Menu.

### Elements of the Interactive Display Menu

This is the Interactive Display Menu.

```

INTERACTIVE DISPLAY -----DB/WORKBENCH (IDF) DB2=D41A-----
Cmd ==> 1                                     99/01/24 06:33

Enter at least one name below.   Use of the % will cause delays.

Database ==> CAN%                 Tables Creator ==> % 2
Tablespace ==> %                  Tables Name    ==> %
Location  ==> 3                   Catalog Prefix ==> SYSIBM 4
Refresh  ==> N 5                  Show Include Objects ==> Y 6

Option ==>
7 [ D Databases                    P Plans
    S Tablespaces                  K Packages
    T Tables                       L Aliases
    I Indexes                      G Storage Groups
    A All                           - DB2 Commands
    V Views

DB2 Subsystem ID ---- D41A 8      DB2 Version ---- 410 9

10 Version: 500  Maint. Level: 9501  PSP: 4
----- (C) Copyright CANDLE Corp. 1993 - 1999 -----
    
```

- 1** Entry field for a !DB/WORKBENCH or an ISPF command
- 2** Depending upon how you accessed the interactive display facility, fields that contain:
  - Values retrieved from your ISPF profile, or
  - The query wild card symbol (%). Enter a value in one or more of these fields to query the DB2 catalog for any combination of database, table space, table creator, or table name of your choice. The value you enter can overwrite the wild card symbol or can contain it, as shown in this example.

To understand more about the way in which IDF selects the objects for which data is collected, see “Step 1—Selecting the Objects for Data Collection” on page 224 in this chapter.

---

**Elements of the Interactive Display Menu (continued)**

- 3** Location of the DB2 subsystem, if it is remote; that is, operating in a DDF environment
- 4** Prefix of the DB2 catalog you want to access, if you want to access a shadow catalog
- 5** Whether to refresh your data by reaccessing the catalog
- 6** Whether to display the pop-up menu where you can identify additional information to be collected. If you specify **N**, IDF inserts the default values or the values you last used into the fields in which you specify the base objects (**2**). IDF *will not* collect information other than for the base objects.
- 7** Entry field and available object types for which !DB/WORKBENCH can display catalog information. When you select an object type by typing the identifying letter in the Option field, !DB/WORKBENCH displays *the same* object list panel it displays when you select that object type on the !DB/WORKBENCH Primary Menu. However, the heading line on the object list panel indicates that the information displayed is from IDF rather than from the extract.
- 8** Display field containing the ID of the DB2 subsystem against whose catalog the query operates
- 9** Display field containing the current DB2 subsystem
- 10** Version and maintenance level of !DB/WORKBENCH

## Using the Interactive Display Menu

---

### Overview

This unit provides instructions for using the Interactive Display Menu.

---

### Another look at the menu

Using the Interactive Display Menu is a two-step process.

- In Step 1, you identify the information that !DB/WORKBENCH is to obtain from the DB2 catalog. You can also provide information about the location of the DB2 subsystem whose catalog you want to access, the prefix of the DB2 catalog you want to access, and whether to reaccess the catalog to refresh the values on a display.

You use the top half of the Interactive Display Menu to complete Step 1.

- In Step 2, you view the data !DB/WORKBENCH gathered by displaying the appropriate object list panel or panels. The object list panels you view are *the same panels* you view when selecting an object from the !DB/WORKBENCH Primary Menu. However, the data obtained is from the current DB2 catalog rather than from the extract.

You use the bottom half of the Interactive Display Menu to complete Step 2.

---

### Background about performance and the use of IDF

To obtain information from the DB2 catalog, !DB/WORKBENCH performs a “mini-extract”. !DB/WORKBENCH obtains data only for those objects you identify and their dependents. You request the data using both the top half of the Interactive Display Menu and the Include Object Types pop-up menu. The more data you request, the longer it will take to perform this mini-extract.

When it obtains the catalog data, !DB/WORKBENCH stores it in a temporary data set. Once the mini-extract has completed, there is little, if any, delay when using the various object list panels to display the data. However, when you use PF3 or type **END** to exit the interactive display facility, the data you obtained from the catalog *is not saved*.

---

## Supplying values for Database, Tablespace, Tables Creator, and Tables Name fields

When you access the Interactive Display Menu by using a query (Q) select on an object list panel, !DB/WORKBENCH displays a value in one or more of the Database, Tablespace, Tables Creator, and Tables Name fields.

If you access the menu using the Q command and follow the command with the name of a database, !DB/WORKBENCH inserts the database name in the Database field of the Interactive Display Menu. Otherwise, IDF inserts the last-used values in the fields.

In all other cases, !DB/WORKBENCH displays the last used values in the fields. At least one of the four base fields must contain a value in order to perform the query function.

You can specify values in each of the four fields. If you do so, you narrow the scope of the query and therefore reduce processing time.

---

## How to use the wild card (%) feature and masking

The Interactive Display Menu can display the wild card (%) symbol in one or all of the Database, Tablespace, Tables Creator, and Tables Name fields. !DB/WORKBENCH requires at least one of these four fields to contain a value before it queries the DB2 catalog.

You can use the wild card symbol (%) and the underscore (\_) as masks when entering data in the Database, Tablespace, Tables Creator, or Tables Name fields. The % represents multiple characters. The \_ represents a single character. For example, to query for all Tables Creator(s) that begin with xyz, type xyz% in the Tables Creator field. To query for all tables with four character names that begin with xyz, type xyz\_ in the Tables Name field.

---

## Maintaining data across sessions

If there is a value in any of the four fields (Database, Tablespace, Tables Creator, or Tables Name) on the Interactive Display Menu, and you have actually used that value to perform a query against the DB2 catalog, then the value is maintained across !DB/WORKBENCH sessions. If you have entered a value into a field or !DB/WORKBENCH has placed a value there as the result of your use of the Q select, but you have not run the query, the data is not maintained across sessions. That is, if you type **END** on the command line or use PF3 to abort your query, the entered values are not saved.

## Step 1—Selecting the Objects for Data Collection

### Overview

This unit describes how you define to IDF the data you want to collect from the DB2 catalog.

### Identifying the specific objects for which you want to retrieve data

Review the illustration to determine what values to enter to identify the objects for which you want to retrieve data.

```

INTERACTIVE DISPLAY -----DB/WORKBENCH (IDF) DB2=D41A-----
Cmd ==>                                     99/01/24 06:33

Enter at least one name below.    Use of the % will cause delays.

Database   ==> % 2                          Tables Creator ==> % 4 1
Tablespace ==> % 3                          Tables Name    ==> % 5
Location   ==> 6 6                          Catalog Prefix ==> SYSIBM 8
Refresh    ==> N 7                          Show Include Objects ==> Y 9
.
.
.

```

- 1** You must supply a value in at least 1 of these fields. The value you enter can be a partial wild card, for example, CAND% or CANDLE\_. If you supply values in several of these fields, the data that IDF retrieves is affected as described later in this unit.
- 2** Enter the name of the database whose information you want to view.
- 3** Enter the name of the table space whose information you want to view.
- 4** Enter the authorization ID for the creator of the table whose information you want to view.
- 5** Enter the name of the specific table whose information you want to view.
- 6** Enter the location of the DB2 subsystem, if it is remote
- 7** The value for the Refresh field is set to **N** after every query. Enter **Y** to refresh the catalog display. Entering **Y** causes !DB/WORKBENCH to reaccess the DB2 catalog and perform a new mini-extract.



---

**Identifying the specific objects for which you want to retrieve data (continued)**

- 8** If you want to access a shadow catalog, enter its prefix in this field. (Note that the primary catalog on a DB2 subsystem carries the prefix SYSIBM.)
  
- 9** Enter **Y** to display the Include Object Types pop-up menu. The initial value for the fields on the pop-up menu is **N**. Once you have entered a value for any field, that value is maintained across !DB/WORKBENCH sessions. The saved values are used until you change them. Thus, if you enter **N** in the Show Include Objects field, !DB/WORKBENCH uses the values previously specified on the pop-up menu.

---

**What data does IDF retrieve from the catalog?**

As stated in **1**, the data that IDF retrieves from the catalog is affected by the values you specify in the four base fields on the Interactive Display Menu. Refer to the chart for more information.

<b>Information You Specify</b>	<b>Result</b>
Database name only	!DB/WORKBENCH retrieves information about the specified database and its dependents.
Table space name only	!DB/WORKBENCH retrieves information about the specified table space and its dependents.
Database and table space names	!DB/WORKBENCH ignores the database name. It retrieves information about the specified table space and its dependents from every database in which that table space name occurs.
Tables creator and/or tables name	!DB/WORKBENCH ignores the database and table space names if they are present and retrieves information about the named table or tables and its dependents.

## Using the Include Object Types Menu

---

### Overview

If you typed **Y** in the Include Object Types field of the Interactive Display Menu, IDF displays the Include Object Types pop-up menu to permit you to amplify the type of data you want to collect.

---

### Process to use the pop-up menu

Once you have identified the specific objects for which you want to collect information, you can specify the type of information you want to collect for each object. Follow the steps in this chart.

Step	Action
1	Complete the top half of the Interactive Display Menu. Ensure that you have specified <b>Y</b> in the Show Include Objects field.
2	Press Enter. <b>Result:</b> !DB/WORKBENCH displays the Include Object Types pop-up menu.
3	On the Include Object Types menu, type <b>Y</b> for each type of information you want to collect for the object or objects you selected. Remember that if you do not collect a specific type of information, you <i>cannot</i> display it later.
4	Press Enter. <b>Result:</b> IDF processes your query against the DB2 catalog you specified. As processing continues, IDF displays the IDF: DB2 Catalog Data Collection panel. IDF continually updates this panel to inform you of its progress.

## Elements of the Include Object Types pop-up

Review the illustration to understand the various elements of the Include Object Types pop-up menu.

```

INTERACTIVE DISPLAY -----DB/WORKBENCH (IDF) DB2=D41A-----
Cmd ==>                                     99/01/24 07:43

En .----- Include Object Types ----- .
  Cmd ==>
  Da
  Ta Enter Y to include or N to exclude object type.
  Lo
  Re  Aliases   ==> N      StorageGroups ==> N      BM
     Checks   ==> N      Synonyms     ==> N
     1 Packages ==> N      Syscopies   ==> N
     Plans    ==> N      Views        ==> N
     Procedures ==> N

Results Dataset Allocation Parameters:
  2 Volume ==>           3 Primary ==> 150 Tracks
  Unit   ==> SYSDA      Secondary ==> 150 Tracks

Press ENTER to accept or END to use original values.

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```

- 1** Object types you can include. Note that the Checks and Procedures object types are not available if you are using a DB2 version less than Version 4.
- 2** Volume or unit on which to store the temporary dataset that is to contain the results of the mini-extract. The specification for Unit may be any generic or esoteric name. If you specify a generic name, then you *must* specify a value for Volume.
- 3** Number of tracks to be allocated (primary and secondary allocation). In both fields, the range you can specify is from 1 through 45000 tracks.

## Elements of the DB2 Catalog Data Collection panel

During the processing of its mini-extract, IDF reports to you on its progress using the IDF: DB2 Catalog Data Collection panel. Its elements are described here.

```

INTERACTIVE DISPLAY -----DB/WORKBENCH (IDF)  DB2=DB2 -----
Cmd ==>                                     99/12/22 13:33

      IDF: DB2 Catalog Data Collection
      IDF230- D
      DB2 Subsystem:  DB2 1
      Control Library:  USRID.WKB.CNTL 2
      Control Member:  KTWIX23D 3
      4 Result-PDS Dsn:  SYS9536356.TI33515.RA000.USRID.R00 00167
      Result-PDS Vol:  TEMP04
      5 Current Process:  Collecting DB2 Catalog Data
      Objects Included:  ALIAS

      Version: 500  Maint. Level: 9501  PSP: 4
  
```

- 1** ID of the current DB2 subsystem
- 2** Name of the library where IDF is to store the SQL used to perform the mini-extract.
- 3** Name of the member within that library where IDF is to store the SQL used to perform the mini-extract. The letter suffixed to the member name identifies the type of mini-extract to be performed:
  - D** Database mini-extract
  - S** Table space mini-extract
  - T** Tables mini-extract
- 4** Name of the temporary dataset and the volume serial number of the volume on which the mini-extract output is to be placed
- 5** Fields that are continually updated during the running of the mini-extract to identify the current activity against the catalog and, optionally, a confirmation of the objects that are being included

## Step 2—Viewing the Information You Collected

### Overview

This unit describes how you view the data you collected from the DB2 catalog.

### Using the bottom half of the Interactive Display Menu

Use the bottom half of the Interactive Display Menu to view the information you collected from the catalog. To do so, specify the appropriate letter in the Option field on the panel. IDF displays the corresponding object list panel. The only difference between an object list displayed from IDF and an object list displayed from the !DB/WORKBENCH Primary Menu is in the panel title for the object list. The panel title shows the source of the displayed information as IDF.

```

INTERACTIVE DISPLAY -----DB/WORKBENCH (IDF) DB2=D41A-----
Cmd ==>                                     99/01/24 06:33

.
.
.
Option ==> 1
  D Databases          P Plans
  S Tablespaces       K Packages
2 T Tables           L Aliases
  I Indexes           G Storage Groups
  A All               - DB2 Commands
  V Views

3 DB2 Subsystem ID ---- D41A      DB2 Version ---- 410

                          Version: 500  Maint. Level: 9501  PSP: 4
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```

- 1** Entry field in which you enter the letter representing the object list panel to display
- 2** Objects that can be displayed from IDF. All of the object list panels you can display from the !DB/WORKBENCH Primary Menu can be displayed from this Options menu, with the exception of Authorizations and Procedures.
- 3** Display fields showing the extract ID you specified upon entering !DB/WORKBENCH and the version of the DB2 subsystem you accessed.

## Displaying an object list panel using IDF

This is an object list panel displayed using IDF. The fields, commands, and selects you can use are identical to those on the panel that would be displayed from the !DB/WORKBENCH Primary Menu. You can also use the same filters and can access them by entering the FILT command on the command line. The use of windowing and the SQL command are also supported.

```

INTERACTIVE DISPLAY ----- DB/WORKBENCH (IDF) 1 DB2=D41A -----
Cmd ==>>                                     Scroll ==>> DATA

                                A L I A S E S
Cmds: 2 DO (Menu) LCTN/NOLCTN
SeIs: 2 ? (Menu) A Alter K Pkgs L Load 0 Out DDL P Plans
-----
SEL NAME          CREATOR   CREATED
                  AUTHID    BY
-----
- PROACTION       IDMI03  IDMI03  DCSP40A.PROACTION
- PROAUDIT        IDMI03  IDMI03  DCSP40A.PROAUDIT
- PROOBJECT       IDMI03  IDMI03  DCSP40A.PROOBJECT
    
```

- 1** Panel title indicating that this list was generated by IDF and is displaying DB2 catalog data rather than extract data
- 2** Commands and selects you can use in this panel
- 3** Displayed data. Note that the fields are identical to the fields you see when looking at extract data.

## Objects that cannot be viewed using IDF

The Authorizations object type cannot be viewed using the interactive display facility. In addition, the Procedures and the Checks object types are available only if you are running DB2 Version 4.

## Optionally Accessing Other DB2 Catalogs

---

### Overview

This unit provides the information you need to access the catalog for DB2 subsystems other than the one you are currently using. To review information about prerequisites you need to consider before such access, see “Prerequisites for Accessing Interactive Displays” on page 217.

---

### Optional access to different catalogs on the local MVS system

You can change the DB2 subsystem whose catalog you will access. From the !DB/WORKBENCH Primary Menu, do one of the following:

- Change the value in the Extract ID field. Then select the Q option to display the Interactive Display menu.  
IDF uses the extract ID for information about the dataset names for SYSTEM, USE, and LOG, and other profile information specific to the DB2 subsystem you want to access.
  - Select the ? option to display the DB2 Subsystem Name Table panel. From the DB2 Subsystem Name Table, select the DB2 subsystem you want by typing any character in the SEL field next to its name. When you press Enter, !DB/WORKBENCH returns you to the Primary Menu with the extract ID you selected in the Extract ID field. Now select the Q option to display the Interactive Display menu.  
If you want more information about the use of the DB2 Subsystem Name Table, see “Overview of the !DB/WORKBENCH Primary Menu” on page 86.
- 

### Accessing the catalog of a remote DB2 subsystem

To access the catalog of a remote DB2 subsystem, type the location ID of the remote subsystem in the Location field of the Interactive Display Menu.

## Optionally Accessing Other DB2 Catalogs



# Working with Data



## Chapter 12. Introduction to Operations on Data

---

### Introduction

This chapter introduces the section and the selects and commands you can use to access functions or generate statements for objects. The chapter is a prerequisite for the other chapters in this section.

### Chapter contents

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## Resources for Learning about Topics in This Section

---

### Overview

This unit lists resources available for learning about options that operate on data. It includes information about the resources in this guide and in !DB/WORKBENCH.

---

### Resources in this guide

This guide is intended to help you have a broad picture of the features for working with data that are available in !DB/WORKBENCH. The chart lists sources available within this section.

Information You Want	Resources Available
General introduction to access functions available for objects or to generate statements for objects; how to use the Process Member menu, which is used when you generate statements	This chapter
Introduction to the methods and prerequisites for accessing functions (such as DB2 utilities) or for generating statements for the management of your system (such as AMS statements or DB2 commands)	“Methods for Working with Data” on page 257
Introduction to the methods and prerequisites for generating statements for the management of data (such as ALTER, CREATE, or GRANT statements)	“Methods for Generating Statements for Objects” on page 277
Procedures to follow if using Alter (A) selects or ALTER commands to change data	“Using ALTER Commands and Selects” on page 295
Introduction to how to use selects and commands in macros	“Using !DB/WORKBENCH Macros” on page 321

---

## Resources available with online Help

With `!DB/WORKBENCH`, the online lists of options and the online Help provide specific information that you need for the task you want to do. For example, online Help provides information explaining each command you can use on a panel.

To access Help, type **HELP** on the command line and press Enter, or press the appropriate function key.

---

## Additional online support

When you must enter values as you use a select or command, `!DB/WORKBENCH` displays a panel with the fields to be entered. The panel includes brief instructions. For example, if you want to generate ALTER statements to add a column to a table, you enter the values such as the data type. In this case, the panel includes a list of all valid data types.

---

## Additional resources in this guide and batch processes

For information on using selects and commands in batch mode, see the chapter “Introduction to `!DB/WORKBENCH` JCL and Batch” in *!DB/WORKBENCH Advanced User's Guide* and the chapter “Online Commands and Selects Available in Batch” in *!DB/WORKBENCH Reference Manual*.

---

## Reminder about other resources

If you need a reminder about the difference in consequences in using selects or commands, about the online lists of available options (such as the commands, selects, sorts, and filters), and about the quick reference in the chapters in this guide, see “Introduction to Display” on page 129.

## Overview of the Chapter

---

### Background about !DB/WORKBENCH and this section

In addition to the power that !DB/WORKBENCH provides to use DB2 operations to display the data you want without extensive data entry or without memorizing DB2 commands, !DB/WORKBENCH also provides aids to productivity in two other areas:

- Access to functions (such as a menu of DB2 utilities) that you can use with objects
- Generation of statements either to work with the DB2 system (such as AMS or LOAD DATA statements) or to manage your data (such as ALTER, CREATE, or GRANT statements)

This section covers the information you need to be able to access functions and to generate statements. This chapter provides the prerequisites and instructions for the entire section.

---

### Organization of information in the chapter

The chapter introduces the selects and commands that access the functions you can use with objects and that generate statements associated with objects. It also contains information essential to the other chapters in this section and to any unit that covers generating a statement.

---

**Organization of information and your needs**

Review the chart to select information appropriate for the task you want to perform.

	Controlling Objects	Other Functions	Generating Statements	Process Member	Accumulating	Processing
	p.240	p.242	p.243	p.246	p.248	p.250
Control the objects affected by selects and commands	√					
Review functions you can access with selects and commands		√				
Review statements you can generate with selects and commands			√			
Review instructions for processing the statements you generate				√		
Review instructions for accumulating and processing statements you generate					√	√

---

**Resources not included in this guide or in the online Help**

The selects and commands in this section can access functions and generate statements (if you process them) that can affect your data. For information about database design, see your *I O DB2 Administration Guide*.

---

**Reminder about information about displaying data**

If you need a reminder about functions available in !DB/WORKBENCH, see the section, “Displaying Data” on page 127.

## Controlling the Objects Used with Selects and Commands

---

### Overview

Although control of objects used with selects and commands is important when displaying data, this control is essential when using selects and commands that change data. This unit contains a reminder about the value of filtering and the method to use to restrict specific objects.

---

### Filtering and control of objects

Filtering provides a powerful method to restrict the objects listed on a panel and, therefore, to restrict the objects that commands act upon.

If you need a reminder about how to use filtering, see the chapter “Filtering Object Lists” on page 191. If you want to review all the methods for filtering available for object list panels, see the chapter “Methods for Filters—Object List Panels” in *!DB/WORKBENCH Reference Manual*. If you prefer online information about filtering, see the online Help.

---

### Example of the value of filters

For example, if you want to generate DROP statements for four tables whose names begin with the same three characters, you can use filters to display only these tables. When you use the DROP command, the system generates DROP statements for only these tables.



---

### Excluding specific objects on the Table Spaces or Tables panels

You also can use the Exclude (X) select to restrict specific objects and to remove them from the display. Review the chart for methods to exclude specific objects and to redisplay them.

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Specify an object to remove from the object list panel and exclude it from operation	Select (on the Table Spaces and Tables panels)	Exclude (X)
Display all objects you previously excluded from the object list panel	Command (on the Table Spaces and Tables panels)	RESET

---

### Example of the value of the Exclude (X) select

If you want to generate DROP statements for four tables whose names begin with the same four characters, but you do not want to drop a fifth table whose name also begins with those same four characters, you can filter the names and type the **X** (Exclude) select in the Select field for the fifth table. When you use the DROP command, the system generates the DROP statements for the remaining four tables only and does not process any tables you exclude.

---

### Reminder about the S command and select

You can use the Exclude (X) select with the S command. If you need a reminder about how to use the S command, see “Methods to Use Selects for Object List Panels” on page 93 in the chapter, “Using the Primary Menu and Object List Panels.”

## Accessing Other Functions from an Object List Panel

---

### Overview

!DB/WORKBENCH makes it possible to access other functions directly from object list panels using selects and commands. This unit lists methods to access other operations from !DB/WORKBENCH and the sources of information available.

### Methods to access other operations

!DB/WORKBENCH provides access to functions that you can use with objects on the object list panel. The chart lists operations that you can access and the introduction provided in this guide.

Operation You Want to Access	Unit to Use
DB2 utilities available for table spaces, index spaces, or storage groups	“Accessing DB2 Utilities and Other Options” on page 259
Functions available with !DB/QUICKCHANGE	“Accessing !DB/QUICKCHANGE” on page 262
The declarations generator (DCLGEN)	“Methods for Working with Data” on page 257
An estimator to calculate statistics	“Using the Estimator to Determine Statistics” on page 275

### Additional information about access to other operations

!DB/WORKBENCH also provides access to the functions that you can use but that are not directly linked to objects on the object list panels.

- To access a menu of DB2 commands, type – (dash) on the command line.
- To access a panel for entry of SQL statements, type **SQL** on the command line.

For information about these functions, see the section “Using SQL and DB2” in *!DB/WORKBENCH Advanced User's Guide*.

## Generating Statements from an Object List Panel

### Overview

!DB/WORKBENCH makes it possible to generate statements from object list panels and to avoid extensive keying of these statements. This unit provides background information about the generation of statements and lists methods to generate these statements and the sources of information available.

### Background about generating statements

!DB/WORKBENCH generates statements for a variety of tasks you can perform with DB2. For example, you can generate CREATE statements for several tables and their dependents by entering the OUT command on an object list panel that you previously filtered so that it displayed only the objects you wanted.

```

000005 SET CURRENT SQLID = 'T' ;
000006 CREATE TABLE T.AGREEMENT
000007 (ROW# INTEGER
000008 NOT NULL ,
000009 AGREEMENT_ID CHAR (11) ,
000010 AGREEMENT_DATE DATE ,
000011 MASTER_AGMT_FLAG CHAR (1) ,
000012 PRIMARY_SITE# INTEGER ,
000013 AGREEMENT_NAME VARCHAR (160) ,
000014 DB_RATING CHAR (3)
000015 NOT NULL WITH DEFAULT,
000016 DB_DATE DATE ,
000017 SPECIAL_CONDITION CHAR (1) ,
000018 INPUT_TIMESTAMP TIMESTAMP ,
000019 INPUT_USERID CHAR (8) ,
000020 UPDATE_TIMESTAMP TIMESTAMP ,
000021 UPDATE_USERID CHAR (8) ,
000022 INACTIVE_DATE DATE ,
000023 ROW_STATUS CHAR (1)
000024 IN USSCHREQ.TS000126
000025 ;

```

### Background about execution of statements

To protect your DB2 processing, !DB/WORKBENCH does not implement the statement until you specifically execute the statement. The system saves the statements you generate to a member in your !DB/WORKBENCH user PDS. You may elect to edit, delete, execute, or print them.

---

**Methods available from !DB/WORKBENCH**

!DB/WORKBENCH generates statements from object list panels for a variety of tasks you can perform with DB2. The chart shows the type of statement you can generate and the chapter that contains an overview of the method and prerequisites to generate the statements. For example, you can find the overview for ALTER statements in the chapter “Methods for Generating Statements for Objects” on page 277. (For detailed procedures to generate ALTER statements, see the chapter “Using ALTER Commands and Selects” on page 295.)

<b>Statement</b>	<b>The Chapter “Methods for Working with Data”</b>	<b>The Chapter “Methods for Generating Statements for Objects”</b>
ALTER		√
ALTER (for referential data)		√
AMS	√	
BIND, REBIND, and LINKBIND		√
CREATE		√
DECLARE (using DCLGEN)	√	
DISP	√	
DROP		√
FREE		√
GRANT		√
LOAD DATA	√	
START	√	
STOP	√	
UPDATE (for catalog statistics)	√	

---

**Determining what to do next**

If you are using this guide for the first time, review the units in this chapter for information about the Process Member menu before going to the chapter that contains information about the statements you want to generate. If you plan to generate CREATE, DROP, FREE, GRANT, or LOAD DATA statements, also review the remaining units in this chapter for information on accumulating statements and on processing these statements.

## Options Available for Processing Statements

### Overview

This unit defines the basic elements of a Process Member menu and lists the system response if you select an option shown on the menu. (If you are using a menu that lists options with the Accum member and you want information about using this feature, also see the next unit in this chapter.)

### Elements of a Process Member menu

The illustration shows the major elements of a Process Member menu.

```

PROCESS MEMBER ----- DB2-WORKBENCH -- DB2=D23A-----
Cmd ==>                                     99/10/18 12:25

ALTER SQL statements have been saved in member TDT086AL. 1

Option ==> 2

      1 DO NOW      Invoke DB2 to execute the statements.
      2 EDIT        Edit saved SQL statements.
      3 DELETE      Delete saved SQL statements.
      4 PRINT       Print the SQL statements member.
      5 END         Changes are saved, exit now.

```

- 1** Information about the statements you have generated (The location of this information varies; however, menus displayed when you use some selects and commands include the name of the member in your !DB/WORKBENCH user PDS in which the statements are stored. The name consists of your USERID followed by a letter.)
- 2** Location for entry of the option you want for processing the statements
- 3** Options available for the statements you generated

---

**Basic options and the system response**

The chart lists basic options available from the Process Member menu and the response of the system when you select the option. In some cases, the name of the options vary; however, they operate in the same way. (These basic options are the ones available when generating such statements as ALTER, AMS, BIND, DISP, LINKBIND, REBIND, START, and STOP.)

Options on the Menu	System Response
DO NOW or UPDATE NOW	Executes the statements generated
EDIT	Invokes the ISPF Editor and displays the contents of the member (When you complete editing, the system redisplay the Process Member menu.)
DELETE	Deletes the member from the !DB/WORKBENCH user PDS; returns to the object list panel
PRINT	Prints the contents of the member to a JES printer
END or EXIT	Leaves the member in the !DB/WORKBENCH user PDS and redisplay the object list panel (The next time you generate the same statement(s) that also use the member, the system overwrites the contents in the member.)

---

**Additional information about the !DB/WORKBENCH user PDS and extract IDs**

The !DB/WORKBENCH user PDS for one extract ID is independent from the !DB/WORKBENCH user PDS for another extract ID. When the system generates statements and saves them to a member, it saves them to the !DB/WORKBENCH user PDS associated with the extract ID you are using.

## Options Available to Accumulate Statements

---

### Overview

The unit contains background information about the Accum member, a list of statements that you can use with the Accum member, and options available when you accumulate statements.

---

### Background about the Accum member

The system saves generated statements to a member in !DB/WORKBENCH user PDS. With some statements, you can accumulate statements you generate with one select or command with statements you generate on subsequent uses of these functions.

The system saves the statements you choose to accumulate in the Accum member in the !DB/WORKBENCH user PDS and maintains the contents of the Accum member even when you exit !DB/WORKBENCH.

---

### Background about the flexibility of the Accum member

The Accum member allows you to accumulate statements in these ways:

- Statements generated on one panel (such as the Tables panel) accumulated with statements generated on another panel (such as the Views panel)
  - One type of statement (such as DROP statements) accumulated with another type of statement (such as FREE statements)
- 

### Changes to the Process Member menu when you accumulate statements

When you accumulate statements, the system provides two indications that the process is successful:

- A message that the process is complete
- A display of the name of the Accum member (your USERID followed by the letter *O*) in place of the previous name of the member (For example, if the member name was *useridG*, the system displays *useridO*.)



---

**Statements that the system can accumulate**

!DB/WORKBENCH can accumulate CREATE, DROP, FREE, GRANT, and LOAD DATA statements. You can generate these statements using the selects and commands shown in the chart. (To generate GRANT statements using the select in the chart, you first select Z from an object list panel that supports the Authorizations select.)

Statements	Selects	Commands
CREATE	Out DDL (O)	OUT or OUTC
DROP		DROP
FREE	FREE (F)	FREE
GRANT	Output (O)	
LOAD DATA	Load (L)	

---

**Options for the Accum member and the system response**

The chart lists additional options available for CREATE, DROP, FREE, GRANT, or LOAD DATA statements. (You can also use these options described in the previous unit: DO NOW, EDIT, DELETE, or PRINT.)

Option on the Menu	System Response
UPDATE ACCUM	<p>If no Accum member exists, starts an Accum member and saves the data to the Accum member</p> <p>If an Accum member exists, adds the data to the end of the contents of the Accum member</p>
START ACCUM	<p>If no Accum member exists, starts an Accum member and saves the data to the Accum member</p> <p>If an Accum member exists, clears the current contents of the Accum member and saves the data to the Accum member (basically overlaying the existing data)</p>
LOG	Copies the contents of the current member to the LOG PDS

## Options Available to Process Accumulated Statements

---

### Overview

The unit contains a review of the methods to access options for processing the Accum member, options for processing accumulated statements, and examples of the procedure to use for the two methods.

---

### Method to process the Accum member

When you have accumulated the statements you need, you have two choices for when you process the statements in the Accum member:

- Immediately after you accumulate the last statements you want to accumulate
  - At a later time (You use the OUTX command to display a Process Member menu for the Accum member.)
- 

### Method to access the Process Member menu for the Accum member

When you have accumulated the statements that you need, you can display the Process Member menu for the Accum member. (You can enter the OUTX command on any object list panel that lists OUTX on the selection list displayed when you used the DO command; you do not have to be on the panel where you generated the statements.) The chart lists the required command.

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Display the options available for processing the Accum member	Command	OUTX

---

**The Process Member menu and options for the Accum member**

When you use the OUTX command to process the statements in the Accum member, the options on the menu have some variations in function from those that occur when the system displays the menu after you enter selects and commands that generate CREATE, DROP, FREE, GRANT, and LOAD DATA statements. The chart lists the options and the system response. The DO NOW, EDIT, DELETE, and PRINT options perform the same function for the Accum member as they perform if you are processing any statement that has been generated. The remaining options, however, operate differently with the Accum member.

<b>Option on the Menu (After the OUTX Command)</b>	<b>System Response (and the Accum member)</b>
DO NOW	Executes the statements you have accumulated in the Accum member
EDIT	Invokes the ISPF Editor and displays the contents of the Accum member
DELETE	Deletes the Accum member from the user PDS; returns to the object list panel
PRINT	Prints the contents of the Accum member to a JES printer
UPDATE ACCUM	Copies the contents of the Accum member to the end of the Accum member (The statements are duplicated.)
START ACCUM	Not applicable.
EXIT	Leaves the ACCUM member in the user PDS and redisplay the object list panel (The system does not automatically overwrite the Accum member.)

---

### Characteristics of the example of immediate processing of the Accum member

In the example, you have previously generated and accumulated CREATE statements for two objects. You want to generate CREATE statements for one more object and to accumulate those statements. You then plan to edit the names of the objects and execute the statements.

---

### Procedure to process the Accum member in the example

The chart shows the events that occur if you immediately process the Accum member in the example.

Step	Action
1	On an object list panel, type <b>O</b> in the Select field for the object you want.
2	Press Enter. <b>Result:</b> The system generates and saves the CREATE statements to member <i>useridG</i> and displays the Process Member menu.
3	On the Process Member menu, type <b>5</b> in the Option field.
4	Press Enter. <b>Result:</b> The system adds the data to the end of the accumulated statements already in the member <i>useridG</i> . Then the system displays the Process Member menu with the name of the Accum member ( <i>userid0</i> ) in place of the previous member ( <i>useridG</i> ).
5	On the Process Member menu, type <b>2</b> in the Option field.
6	Press Enter. <b>Result:</b> The system invokes the ISPF Editor and displays the three sets of statements you have accumulated.
7	Edit the statements and exit the editor. <b>Result:</b> The system displays the Process Member menu.
8	On the Process Member menu, type <b>1</b> in the Option field.
9	Press Enter. <b>Result:</b> The system executes the statements in the Accum member.

---

### Characteristics of the example of processing the Accum member

In the example, you have previously generated and accumulated CREATE statements. You are now ready to edit the names of the objects and execute the statements.

---

### Procedure to process the Accum member in the example at a later time

The chart shows the events that occur if you process the Accum member in the example at a later time.

Step	Action
1	On the object list panel, type <b>OUTX</b> on the command line.
2	Press Enter. <b>Result:</b> The system displays the Process Member menu and displays the name of the Accum member ( <i>useridO</i> ).
3	On the Process Member menu, type <b>2</b> in the Option field. <b>Result:</b> The system invokes the ISPF Editor and displays the statements you previously accumulated.
4	Edit the statements and exit the editor. <b>Result:</b> The system displays the Process Member menu.
5	On the Process Member menu, type <b>1</b> in the Option field.
6	Press Enter. <b>Result:</b> The system executes the statements in the Accum member.

## Implications for Other Operations

---

### Overview

This unit discusses the conventions the system uses in saving statements in members of its !DB/WORKBENCH user PDS. It explains the implications of this method on other operations, including using macros.

---

### Background about options and members in the user PDS

When you generate statements using commands or selects, the system creates a member in the !DB/WORKBENCH user PDS. The name of the member consists of the USERID followed by a letter. When you are generating statements using commands and selects, the system follows these naming conventions:

Member Name	Statements Saved to the Member
<i>useridA</i>	AMS, BIND, DISP, LINKBIND, REBIND, START, and STOP
<i>useridD</i>	LOAD DATA
<i>useridG</i>	ALTER (from RFO command), CREATE, DROP, FREE, and GRANT
<i>useridL</i>	ALTER (from ALTER command)
<i>useridQ</i>	DECLARE (using DCLGEN)
<i>useridS</i>	UPDATE (for catalog statistics)
<i>useridU</i>	Utility control statements from DB2 utilities (and additional statements generated by !DB/WORKBENCH)
<i>useridZ</i>	Z PARS

---

## Background about multiple selects

When you enter multiple selects on an object list panel, the system processes all of the selects and then displays the result of the first select. You display the results of each of the subsequent selects by typing **END** on the command line and pressing Enter, or by pressing the appropriate function key.

If you have entered multiple selects that generate statements, the system generates all of the statements for each select and then displays the Process Member menu for the first select. After you choose your option from the menu, the system completes the option and displays the Process Member menu for the second select.

If you need a reminder about how the system processes multiple selects, see the unit “Methods to Use Selects for Object List Panels” on page 93.

---

## Implications in using the S command

You can use the S command to apply a select to all objects listed on a panel, and you must use the S command if you want to use a select in a macro. If you use the S command with selects that generate statements, these principles apply.

Type of Select	Example	Implications
A select that generates statements, but does not allow you to accumulate statements	BIND (B) REBIND (R)	To avoid having the system overwrite the contents of the members with the saved statements, you can execute each statement as you proceed
A select that generates statements and allows you to accumulate statements	Load (L) Out DDL (O)	To avoid having the system overwrite the contents of the member with the saved statements, you can execute or accumulate each statement as you proceed





## Introduction

This chapter provides an overview of the methods that are available from the object list panels to perform tasks in database administration. Some of these tasks are accessing DB2 utilities and generating LOAD DATA statements. Before using the methods in this chapter, review “Introduction to Operations on Data” on page 235.

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## Organization of the Chapter

---

### Organization of information in the chapter

The chapter focuses on the following methods that are available from the object list panels in !DB/WORKBENCH to access functions to perform database administration:

- Accessing DB2 utilities or !DB/QUICKCHANGE (if it is installed)
- Generating AMS statements, DB2 commands, and LOAD DATA statements to access the quantity of data you want
- Using the declarations generator (DCLGEN)
- Using the estimator to calculate catalog statistics

---

### Relationship between this chapter and other chapters

Before you use the units in this chapter, review the chapter “Introduction to Operations on Data” on page 235. In particular, review information about using the Process Member menus, including the Process Member menu that lets you accumulate statements. The system displays these menus after you generate the statements. You use the menus to perform functions such as execute, edit, print, delete, or accumulate statements.

---

### Relationship between units in this chapter

In this chapter, unless specified, each unit (such as “Accessing DB2 Utilities and Other Options” on page 259) is independent from other units. For example, if you only want to access DB2 utilities, you do not need to review other units in this chapter.

## Accessing DB2 Utilities and Other Options

---

### Overview

This unit lists the panels that can provide access to DB2 utilities and other options with JCL that are available with !DB/WORKBENCH. It also includes the methods to access the utilities. It also shows the utilities that are available for objects and lists the sources of information for these utilities.

---

### Panels that access DB2 utilities and other options

The Utility (U) select and the UTIL command provide access to menus of utilities and options. The menus are available from these panels:

- Indexes panel
  - Storage Groups panel
  - Table Spaces panel
- 

### Methods for accessing menus for DB2 utilities and other options

Review the chart for the two methods used to display menus of DB2 utilities and other options.

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Select a DB2 utility or option to use with all objects listed	Command	UTIL
Select a DB2 utility or option to use with the selected object	Select	Utility (U)

### DB2 utilities and other options available on the Indexes panel

The illustration shows the DB2 utilities that are available for indexes and other options available from the Indexes panel. The system displays the Indexes Utilities menu when you enter the Utility (U) select or the UTIL command on the Indexes panel.

```

DISPLAY ALL DB2 INDEXES -- DB/WORKBENCH --- DB2=DB31----- INDEX 1 OF 1,345
Cmd ==> .----- INDEX UTILITIES -----> PAGE
Option ==> 0          SET PROFILE NAME ==> DUMMY

Cmds:
Sels:  0 LIST          List Indexes to exclude some.          s
        1 CHECK        Check Index to Table pointers.        stat
        2 RECOVER      Recover an Index.
        3 REORG        Reorganize an Index.
----- 4 RUNSTATS     Get Index Statistics.
SEL INDE 5 DIAG ABENDS  Generate DIAGNOSE ABENDS statements.  PRT U C
----- 6 PROFILE      Create Utility Profile.          NO. Q G
        U ALTC         H          D N
        - ALTC         X          D N
        - ALTC         X          D N
        - ALTCTRLX     ROB95021  STATDBAS  ALTERCONTROL  ALTCTRLX  D N
    
```

### DB2 utilities and other options available from the Storage Groups panel

The illustration shows the DB2 utility that is available for storage groups. The system displays the Storage Groups Utilities menu when you enter the Utility (U) select or the UTIL command on the Storage Groups panel.

```

DISPLAY STORAGE GROUPS---- DB/WORKBENCH --- DB2=DB31----- GROUP 1 OF 58
Cmd ==> .----- STOGROUP UTILITIES -----> PAGE
Option ==> 0          SET PROFILE NAME ==> DUMMY

Cmds:
Sels:  0 LIST          List the STOGROUPS to exclude some.
        1 STOSPACE     Generate STOSPACE utility statements.
        2 PROFILE      Create Utility Profile.
-----

SEL GROU
-----
U CILE
- DADDSTG  TDDDB60  1 STGVOL          DB2V31
    
```

**DB2 utilities and other options available from the Table Spaces panel**

The illustration shows the DB2 utilities that are available for table spaces and other options available from the Table Spaces panel. The system displays the Table Spaces Utilities menu when you enter the Utility (U) select or the UTIL command on the Table Spaces panel.

```

TABLESPACES ----- DB/WORKBENCH --- DB2=DB31----- TBLSPC 1 OF 1,187
Cmd ==> ----- TABLESPACE UTILITIES ----- => PAGE
Option ==> 0          SET PROFILE NAME ==> DUMMY

Cmds:
Sels:  0 LIST          List tablespaces to exclude some.          Indexes
       1 CHECK INDEX  Check all Indexes in a Tablespace.          Runstat
       2 CHECK DATA  Check Referential Relationships.
       3 COPY         Copy Data into a Sequential Data Set.
-----
TABL   4 MERGECOPY    Merge Multiple Copies into one Copy.        TATS
SEL SPAC 5 MODIFY     Purge records from SYSIBM.SYSCOPY.          VAIL
-----
U AAAM   6 QUIESCE    Stop Changes to the Tablespaces.           ----
- ACT    7 RECOVER    Recover a Tablespace.                       NO
- ACT    8 REORG      Reorganize a Tablespace.                    NO
- ACT    9 REPORT     Report Recover Status on Tablespaces.       YES
- ACT   10 RUNSTATS   Get Tablespace and Index Statistics.        YES
- ACT   11 REBIND     Rebind Dependent Plans and Packages.       YES
- ACT   12 REBIND PLANS Rebind Dependent Plans.                  NO
- ACT   13 REBIND PKGS Rebind Dependent Packages.                  NO
- ACT   14 ICCAT      Catalog Image Copy Datasets.                 NO
- CDAC   15 PROFILE   Create/Modify Utility Profiles.             YES
- CDAC   16 DIAG SYSUTIL Generate DIAGNOSE SYSUTIL.                  YES
- CDDE   17 DIAG ABENDS Generate DIAGNOSE ABEND statements.         NO
- CDEM
- CDEM
- CDPR
- CDPROJXX  DBGLEN  TDDB55A  DB2V31          1          NO
  
```

**Additional information**

Three sources of information exist for DB2 utilities and other options with JCL that are available within !DB/WORKBENCH:

- The panel that displays the fields required for the utility (brief instructions to use the utility.)
- Online Help (details for using each utility)
- The section “Running Utilities” in *!DB/WORKBENCH Advanced User's Guide* (general information to help you select the correct utility and to fulfill any prerequisites for using the utility)

## Accessing !DB/QUICKCHANGE

---

### Overview

This unit presents the method and procedure for accessing !DB/QUICKCHANGE

---

### Method to access !DB/QUICKCHANGE

You can access !DB/QUICKCHANGE from the Databases, Table Spaces, Tables, and Indexes panels. The chart shows the selects used to access !DB/QUICKCHANGE.

Task You Want to Perform	Method	Names
Access functions available through !DB/QUICKCHANGE to use with the selected object	Select	Alter (A) Migrate (8)

For instructions to use the functions available with !DB/QUICKCHANGE, see *!DB/QUICKCHANGE® User's Guide*.

---

### Procedure to access !DB/QUICKCHANGE from the menu

Follow these steps to access !DB/QUICKCHANGE from the menu.

Step	Action
1	On the object list panel, type <b>A</b> in the Select field.
2	Press Enter. <b>Result:</b> The system displays a menu that lists !DB/QUICKCHANGE as well as the DB2 functions that let you ALTER statements.
3	On the menu, type the number associated with the !DB/QUICKCHANGE Functions option in the Select field.
4	Press Enter. <b>Result:</b> The system displays options available with !DB/QUICKCHANGE.

## Generating AMS Statements

---

### Overview

The unit contains a description of the function that generates these AMS (access method services) statements: LISTCAT, DELETE, and DEFINE. It also includes information about selecting options from the AMS Option menu. This unit also indicates how you can specify objects to be used in the statements and how the object list panel you use determines which AMS statements the system generates.

---

### Description of the function that generates AMS statements

The AMS command displays a panel that lets you enter values to select the type of statements you want to generate for the objects listed on the panel. When you generate the AMS statements for the objects, you also generate the statements for all dependent objects. For example, when you enter the AMS command on the Tables panel, you generate statements for not only table spaces, but also for indexes (the dependent object for tables).

You generate AMS statements by entering the AMS command on the object list panel and by completing the fields on the AMS Options menu to select the options you want. You use the Process Member menu to select how you want to process the statements you generate. You can execute, edit, delete, or print the AMS statements. (If you need a reminder about how to use the Process Member menu, see “Introduction to Operations on Data” on page 235.)

---

### AMS statements you can generate from the AMS Option menu

You can generate these statements from the AMS Option menu:

- AMS LISTCAT statements
- AMS DELETE statements
- AMS DEFINE statements

---

### Reminder about filtering and the AMS command

If you want to use the AMS command with only one object, you can use filters to control the objects display so that only one object is displayed on the panel. For a reminder about how to use filtering, see “Filtering Object Lists” on page 191.

### Selection of options from the AMS Option menu

If you select the option to generate LISTCAT statements, you cannot generate any other type of AMS statements. You can generate these combinations of statements from the AMS Option menu:

- LISTCAT statements only
- DELETE or DEFINE statements
- DELETE and DEFINE statements

### Objects you can specify for DELETE or DEFINE statements

With DELETE or DEFINE statements, you can specify that the system write statements for these objects:

- All objects displayed on the panel
- Only those objects that were explicitly defined (and were not allocated by a DB2 storage group)

### Object list panels and generation of AMS statements

The options available from the AMS Option menu generate AMS statements not only for the objects you specify, but also for all the dependents of these objects. Review the chart to determine which object list panel you should use to generate the AMS statement or statements you want.

	Databases Panel	Table Spaces Panel	Tables Panel	Columns Panel	Indexes Panel
AMS statements for table spaces	√	√			
AMS statements for indexes	√	√	√		√



---

**Method for accessing options to generate AMS statements**

Review the chart for the command for options to generate AMS statements. After you execute the command and choose the AMS options, the Process Member menu is displayed.

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Generate AMS LISTCAT, DELETE, or DEFINE statements	Command	AMS

## Generating DB2 Commands from the Object List Panel

---

### Overview

The unit provides background information about DB2 commands available in !DB/WORKBENCH, and a description of the process to use the three DB2 commands that you can access directly from object list panels (DISP, START, and STOP commands). The unit includes information on the objects for which you can generate DB2 commands, the prerequisites required to use the DISP command, and the methods available.

---

### Background about accessing DB2 commands

There are two ways to generate DB2 commands within !DB/WORKBENCH. You can:

- Display the DB2 Commands menu to select the type of command you want to generate. (For example, you can display the menu by selecting the DB2 Commands option on the !DB/WORKBENCH Primary Menu or by entering a dash (-) on the command line.)
- Generate three DB2 commands from object list panels: DISP, START, and STOP. (These commands do not display the DB2 menu; they generate DB2 commands for the objects displayed on the panel.)

This unit introduces the DISP, START, and STOP commands. For more information about the DB2 commands available from the DB2 Commands menu, see the section “Using SQL and DB2” in *!DB/WORKBENCH Advanced User's Guide*.

---

### Description of the process to generate DB2 commands

The DISP and START commands display panels that let you enter values related to the statements to be generated. For example, for the START command, you specify the type of access for the databases (such as Read Only). The STOP command does not display a panel.

You generate DB2 commands by entering one of the three commands on the object list panel and by completing any fields on the panel for the command. (If you are familiar with the options available for DB2 commands, you do not have to provide values on the panel. You can type the parameters on the command line and press Enter.) You use the Process Member menu to select how you want to process the statements you generate. You can execute, edit, delete, or print the DB2 commands. (If you need a reminder about how to use the Process Member menu, see “Introduction to Operations on Data” on page 235.)

---

**Background about generating –DISPLAY DATABASE commands**

Unlike the START command (which has only the type of access as a parameter), and the STOP command (which has no parameters), the DISP command displays a panel listing several parameters available with the –DISPLAY DATABASE commands. The chart lists the parameter and the parameter's effect on the display if you type **Y** in the field on the panel.

<b>Field Name on the Panel</b>	<b>Items Displayed If You Type Y</b>
Use	Correlation ID and Connection ID for all applications that are allocated to table spaces or index spaces associated with displayed databases
Locks	Correlation ID and Connection ID for applications that are holding or waiting for locks on table spaces or index spaces associated with the displayed database (A Y value for Locks overrides a Y for Use.)
After	Information about those databases whose names follow the database name you specified
Active	Only those databases that have table spaces or index spaces allocated to applications
Restrict	Only those databases, and their associated table spaces and indexes, that are restricted (For example, a database that is restricted to read-only processing or a table space or index space that has pages with logical errors.)
Claimers	Claims for table spaces, IX spaces, and partitions (A Y value for Claimers overrides Y values for Locks and Use.)
LPL	The pages that are logically in error on the logical page list (LPL)
No Limit/Output Limit	All messages that the command generates without a limit on lines (If you want to limit lines, skip this field and enter the maximum number of lines for the Output Limit field.)

---

### Prerequisites for generating –DISPLAY DATABASE command

To generate the –DISPLAY DATABASE commands, you need to determine the appropriate Y or N value for these fields on the Display Database panel: Use, Locks, After, Active, Restrict, and No Limit.

---

### Resources for determining the values for generating DB2 commands

If you want greater detail about the values for the these fields on the Display Database panel, these resources exist:

- The panel that displays the fields required (The panel includes brief instructions.)
- Online Help
- The chapter “Using DB2 Commands in !DB/WORKBENCH” in *!DB/WORKBENCH Advanced User's Guide*

---

### Object list panels and generating DB2 commands

You can generate DB2 commands for displaying, starting, and stopping the database on the Databases, Table Spaces, and Indexes panels. If you use one of the commands on a Table Spaces or Indexes panel, !DB/WORKBENCH determines the associated database and generates the DB2 commands for the database.

---

### Methods for generating DB2 commands

Review the chart to determine which commands you want to use. (With each of these commands, you display the Process Member menu.)

Task You Want to Perform	Method	Name
Generate –DISPLAY DATABASE commands for all objects listed	Command	DISP
Generate –START DATABASE commands for all objects listed	Command	START or WSTRT. If you are running ISPF 4.1 or higher, you must use WSTRT.
Generate –STOP DATABASE commands for all objects listed	Command	STOP or WSTOP. If you are running ISPF 4.1 or higher, you must use WSTOP.

## Generating LOAD DATA Statements

---

### Overview

This unit contains a description of the function that generates LOAD DATA statements that are used to describe the data to be loaded by the LOAD utility. It includes information on the object panels you use to generate statements and on prerequisites. It includes background information about values that !DB/WORKBENCH uses when generating LOAD DATA statements.

---

### Description of the function that generates LOAD statements

You generate LOAD statements by entering the Load (L) select in the select field on an object list panel. You use the Process Member menu to select how you want to process the statements you generate. You can edit, delete, print, or accumulate the statements. You cannot execute the statements for the Process Member menu; however, you can later create JCL and use the LOAD DATA statements as input. (If you need a reminder about how to use the Process Member panel and the Accum member, see “Introduction to Operations on Data” on page 235.)

---

### Object list panels and generation of LOAD statements

You can generate LOAD statements on the Tables and Aliases panels.

---

### Prerequisites if using the Load (L) select on the Aliases panel

If you want to use the Load (L) select on the Aliases panel, you must select an alias on a table, and not on a view. If you accidentally select an alias on a view, the system displays this message:

**Alias on view.**

### Values used by the Load (L) select

The Load (L) select uses three sources for values for parameters for LOAD DATA statements:

- Your existing data
- Default DD names recommended by DB2
- Values !DB/WORKBENCH specifies for the LOAD DATA statements

### Values using your existing data

When !DB/WORKBENCH generates the LOAD statements, it uses the values from your existing data structure in addition to using the existing values for columns in the table. The chart show the values used for the parameters by the Load (L) select.

Parameter	Value Used	Source of the Value
INDDN	tsname	The name of the table space associated with the table you selected
INTO TABLE	CreatorID.tbname	The creator authorization ID and the table name

### Values using recommended default DD names

When generating the LOAD DATA statements, !DB/WORKBENCH uses the default DD names recommended by DB2. The chart shows the default DD names used by the Load (L) select.

Parameter	DD Name Used
DISCARDN	SYSDISC
ERRDDN	SYSERR
MAPDDN	SYSMAP
SORTDEVT	SYSDA
WORKDDS	SYSUT1

---

**Values for parameters used by the Load (L) select**

When you use the Load (L) select, !DB/WORKBENCH generates the LOAD DATA statements using these values for parameters.

<b>Parameter</b>	<b>Value Used</b>	<b>Description</b>
DISCARDS	0	Sets no maximum on the number of source records that the system can write to the discard dataset (for those records DB2 does not load)
ENFORCE	CONSTRAINTS	Blocks loading of records that would cause violations in referential integrity
LOG	NO	Specifies no logging; sets a “copy-pending” status against the table space
RESUME	YES	Adds new rows to existing data
SORTNUM	4	Sets to 4 the number of temporary datasets that the system is to dynamically allocate

---

### Methods for generating LOAD DATA statements

Review the chart for the method to use to generate LOAD DATA statements. (The system also displays the Process Member menu.)

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Generate LOAD DATA statements for the selected object	Select	Load (L)

---

### Fomat for generating LOAD DATA statements

!DB/WORKBENCH and the DSNTIAUL use different formats to generate LOAD DATA statements. The DDL statements that !DB/WORKBENCH generates conform to the REORG UNLOAD ONLY format. They cannot be used by the DB2 LOAD utility.

The following chart shows the differences in how the two formats handle null values.

<b>Product</b>	<b>Format Characteristics</b>
!DB/WORKBENCH	<ul style="list-style-type: none"> <li>● uses hexadecimal X'FF' as the null value</li> <li>● places null values at the end of a column</li> <li>● cannot generate its own load statements</li> </ul>
DSNTIAUL	<ul style="list-style-type: none"> <li>● uses a ? as the null value</li> <li>● places null values at the beginning of a column</li> <li>● can generate its own load statements</li> </ul>



## Using the Declarations Generator (DCL/DML)

---

### Overview

The unit contains a description of the DCLGEN function, information on the object list panel you use to generate statements, and the method to access the function.

---

### Description of the DCLGEN function in !DB/WORKBENCH

You generate DECLARE statements (DCL) and assembler declarations (DML) for the table by entering the DCL command on the Table Columns panel. You use the Process Member menu to select how you want to process the statements you generate. You cannot execute the statements from the Process Member menu; however, you can edit, delete, print, accumulate, or copy the member to the Log PDS.

---

### Object list panels and DCLGEN

You can generate DECLARE statements (DCL) and assembler declarations (DML) on the Table Columns panel. From the Tables panel, you display the Table Columns panel by entering the C (Columns) select in the Select field for a table.

---

**Method for using DCLGEN**

Review the chart for the method to use to generate the statements and program declarations. (The system also displays the Process Member panel.)

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Generate DECLARE statements and assembler declarations for the table you previously selected with the C (Columns) select.	Command	DCL

---

**Methods for detecting package/table relationships**

In the case where a package contains a DECLARE statement only, and no other SQL statement, then no row entry is written to SYSPACKDEP (the package dependency table). In this case, !DB/WORKBENCH can identify most but not all of the relationships between packages and other objects, such as tables. This is due to the fact that !DB/WORKBENCH does not parse the relationship out of the SQL that is in the SYSSTMTS extract. The SQL in SYSSTMTS can identify all such relationships.

## Using the Estimator to Determine Statistics

---

### Overview

This unit contains a description, a list of selects and commands available from the estimator, and the method to access the function.

---

### Description of the function to estimate statistics

You can display current table space statistics and estimate new statistics for table spaces and index spaces by entering the Estimate (E) select on the object list panel and by choosing the selects or commands appropriate for your task.

---

### Background about updating statistics for highlighted fields

The panel displayed after you enter the Estimate (E) select shows statistics for the table space, its associated table(s), and its associated indexes. The fields that are updateable for the catalog statistics are highlighted, and you can type over the values in the field. Follow these steps.

Step	Action
1	Change the fields you want to change for the estimator.
2	Type ? in the Select field beside the table space or index space.
3	Press Enter.

---

### Prerequisites for using the Estimate (E) select

To use the Estimate (E) select, you must have the UPDATE CATALOG authority.

---

**Choices for selects available with the estimator**

You can perform these actions by using these selects with the object.

<b>Object on Panel</b>	<b>Select Available for the Object</b>
Table	C select to display the columns for a table (and change the values for HIGH2KEY or for LOW2KEY)
Table space or index space	? select to calculate statistics for table spaces or index spaces (To calculate statistics, you must first change the values.)

---

**Choices for commands available with the estimator**

You can perform these actions by using commands on the panel:

- OUT command to generate a REXX routine that results in UPDATE statements for catalog statistics (You can use the Process Member menu to select how you want to process the statements you generate. You can execute, edit, delete, or print the statements.)
- NEW command to obtain current statistics for an object from the DB2 catalog and display them. To use the NEW command, you must have executed the RUNSTATS command at least once prior to running the extract.

---

**Object list panels and the estimator report**

You can use the estimator with a table space listed on either the Table Spaces or All Objects panel.

---

**Methods for accessing the estimator**

Review the chart for the select to use to access the estimator.

<b>Information You Want to Display</b>	<b>Method</b>	<b>Name</b>
Display current statistics and estimate statistics if you change values	Select	Estimate (E)

# Chapter 14. Methods for Generating Statements for Objects

---

## Introduction

This chapter provides an overview of the methods to generate statements from !DB/WORKBENCH object list panels. You can generate ALTER, BIND (also REBIND and LINKBIND), CREATE, DROP, FREE, and GRANT statements. Before using the methods in this chapter, review “Introduction to Operations on Data” on page 235.

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## Organization of the Chapter

---

### Organization of information in the chapter

The chapter focuses on the methods available in !DB/WORKBENCH to use existing data displayed on object list panels to generate statements frequently required in database administration. It covers an overview of the ALTER statements, including methods to generate ALTER statements for referential data. It includes statements required for Plans and Packages such as BIND statements.

The chapter covers the statements in alphabetical order, beginning with ALTER statements and ending with GRANT statements. The overview for the statements includes a description of the process, prerequisites (if any), background information (if applicable), and methods available to generate the statement.

---

### Relationships between this chapter and other chapters

Before you generate statements using the information in this chapter, review “Introduction to Operations on Data” on page 235. In particular, review the information about using the Process Member menus including the Process Member menu that lets you accumulate statements. The system displays these menus after you generate the statements; you use them to perform functions such as execute, edit, print, delete, or accumulate statements.

---

### Relationships between units in this chapter

In this chapter, unless specified, each unit is independent from the other units, such as the unit “Generating ALTER Statements” on page 279. For example, if you only want to generate ALTER statements, you do not need to review other units in this chapter.

## Generating ALTER Statements

---

### Overview of generating ALTER statements

You can use !DB/WORKBENCH to generate DB2 supported ALTER statements for databases, table spaces, and indexes for all objects listed by using the ALTER command, or by using the Alter (A) select for a selected object.

You also can enter the Alter (A) select on the Tables panel to generate ALTER statements specific to tables, such as adding a column to the end of a table.

---

### Additional information

For detailed information about the procedures for generating and processing ALTER statements, see “Using ALTER Commands and Selects” on page 295.

## Generating ALTER Statements to Control Referential Integrity

---

### Overview of ALTER statements and referential data

You can use !DB/WORKBENCH to maintain referential relationships. By entering the Alter (A) select on the Tables panel, you can generate ALTER statements for these tasks:

- Adding a primary or foreign key
- Dropping a primary or foreign key

---

### ALTER statements and the panel showing referential data

You also can generate ALTER statements for existing referential relationships. If you have used the F (RI Info) select on the Tables panel with a table that has referential data, the system displays a panel showing referential relationships. Review the chart for the command to use.

Task You Want to Perform	Method	Name
Generate ALTER statements for all referential relationships listed	Command	RFO

---

### ALTER statements and generating CREATE statements

When you use the Out DDL (O) select, the OUT command, or the OUTC command, !DB/WORKBENCH generates ALTER statements for any object that has referential relationships at the same time it generates the CREATE statements. For more information, see “Generating CREATE Statements” on page 286.

---

### Additional information about generating ALTER statements

For detailed information about the procedures for generating and processing Alter statements, see “Using ALTER Commands and Selects” on page 295.



## Generating BIND, REBIND, or LINKBIND Statements

---

### Overview

This unit covers the BIND, REBIND, and LINKBIND function. The BIND, REBIND, and LINKBIND functions vary in operation, but they have some prerequisites and options in common.

The unit contains these items:

- The information for the BIND or REBIND statements includes a description of the process, the prerequisites, the optional overrides that are available, and methods for generating the statements. (The prerequisites and optional overrides that are applicable when binding a plan are also applicable to LINKBIND.)
- The information for the LINKBIND command includes such items as a description of the process, prerequisites specific to LINKBIND, and the method for generating the statements.

---

### Description of the process to generate BIND or REBIND statements

You generate BIND or REBIND statements by entering the select or command on the Plans or Packages panels. The BIND and REBIND functions display a distinct panel for plans and for packages. The panels list values related to the statements you want to generate. The LINKBIND command, which also generates BIND statements, displays an initial panel that is the same as the panel displayed for plans.

You use the Process Member menu to select how you want to process the statement you generated. You can execute, edit, delete, or print the statements. (If you need a reminder about how to use the Process Member menu, see “Introduction to Operations on Data” on page 235.)

---

### Resources for determining the values for prerequisites and optional overrides

These resources exist to help you determine the values to use when using BIND, REBIND, or LINKBIND functions:

- The panel that displays the fields required (The panel includes brief instructions and lists values for the fields.)
- Online Help

### If you are using the LINKBIND command

If you are using the LINKBIND command and want to determine the prerequisite values and optional overrides for using the command, you can identify these values by using the charts to identify the prerequisites for BINDs of plans.

### Prerequisites for plans or packages

The first column of the chart lists the names of required fields and includes restrictions (if any). For example, the first column indicates if the field is for BINDs only and is not applicable to functions that generate REBIND statements. The second and third columns indicate whether the field is applicable to plans or packages.

Required Field	For Plans	For Packages
Action (BINDs only)	√	√
Flag	√	√
Retain (BINDs only)	√	
Version (BINDs only; required if the value for Action is Replace)		√

---

**Optional overrides for plans or packages**

The first column of the chart lists the names of optional overrides and includes restrictions (if any). For example, the first column indicates if the field is for BINDs only and is not applicable to functions that generate REBIND statements. The second and third columns indicate whether the field is applicable to plans or packages.

<b>Optional Field</b>	<b>For Plans</b>	<b>For Packages</b>
Acquire	√	
Cache Size	√	
Current Data	√	√
Current Server	√	
Deferprep	√	√
Degree	√	√
Disconnect	√	
EXPLAIN	√	√
Isolation	√	√
Owner	√	√
Qualifier	√	√
Release	√	√
Reoptimize	√	√
SQL error (BINDs only)		√
SQL Rules	√	
Validate	√	√

---

## Background about the statements generated with LINKBIND

When you use the LINKBIND command, the system builds a jobstream to linkedit a module and BIND a plan for each plan listed on the panel. The jobstream consists of these items:

- The JOB card that you specify (when the system displays the JOB Options panel)
- The member JCLLBMDL from the user PDS (This member contains an instream procedure to linkedit and then execute batch TSO to do the BIND.)
- Input control statements generated by !DB/WORKBENCH

---

## Description of the process to generate the statements

The first panel displayed when you use the LINKBIND command is the same panel displayed when you use a BIND function. The LINKBIND command also displays the Job Options panel and the Library Options panel.

You generate LINKBIND statements by entering the command on the object list panel. You complete the fields on each of these panels. You use the Process Member menu to select how you want to process the statements you generated. You can execute, edit, delete, or print the statements. (If you need a reminder about how to use the Process Member menu, see “Introduction to Operations on Data” on page 235.)

---

## Prerequisites for generating LINKBIND statements

To use the LINKBIND command, you need to determine this information for each of the panels.

<b>Panel Used With the LINKBIND Command</b>	<b>Values on the Panel</b>
The panel that the system displays when you first enter the BIND or REBIND commands	The prerequisites and any of the optional overrides (listed earlier in this unit)
Job Options panel	JOB card member name JOB card dataset name
Library Options panel	Library name for these items: <ul style="list-style-type: none"> <li>● Linkedit Control cards</li> <li>● Linkedit Output load</li> <li>● DB2 load library (optional)</li> </ul>

---

**Methods for generating BIND statements**

You can generate BIND statements from the Plans or Packages panels. Review the chart to determine which command or select you want to use for the task you want to perform.

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Generate BIND statements for the objects listed	Command	BIND
Generate BIND statements for the selected object	Select	BIND (B)

---

**Methods for generating REBIND statements**

You can generate REBIND statements from the Plans or Packages panels. Review the chart to determine which command or select you want to use for the task you want to perform.

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Generate REBIND statements for the objects listed	Command	REBIND
Generate REBIND statements for the selected object	Select	R (Rebind)

---

**Methods for generating LINKBIND statements**

You can generate LINKBIND statements on the Plans panel. Review the chart for the command to use.

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Generate linkedit and BIND statements for the plans listed	Command	LINKBIND

## Generating CREATE Statements

---

### Overview

This unit contains information about the selects and commands that allow you to generate CREATE statements from an object list panel. It includes background information, a description of the functions, a chart showing which CREATE statements are generated on panels, and methods you can use to generate and process CREATE statements.

---

### Background about CREATE statements

You can generate CREATE statements in two ways within !DB/WORKBENCH:

- The CR option on the !DB/WORKBENCH Primary Menu
- The Output (O) select, the OUT command, or the OUTC command on object list panels

This unit covers using the functions available from object list panels. For more information about creating objects using the CR option, see the information in the section “Creating Objects” in *!DB/WORKBENCH Advanced User's Guide*.

---

### Background about using the DEFER option with indexes

If you want to use the DEFER option with indexes, perform either of these actions to create the index.

- Use the CR option on the !DB/WORKBENCH Primary Menu
  - Use the Out DDL (O) select, the OUT command, or the OUTC command, and then edit the contents of the PDS member to add the DEFER clause.
- 

### Other Output (O) selects and OUT commands in !DB/WORKBENCH and this unit

This unit deals with the Out DDL (O) select and OUT commands that generate CREATE statements. On subpanels in !DB/WORKBENCH, other Output (O) selects and OUT commands generate different types of statements. For example, if you enter the Auths (Z) select on the Table Spaces panel, the system displays a panel listing the Output (O) select. When you enter the Output (O) select, the system generates GRANT statements.

---

**Description of the process to generate CREATE statements**

You generate CREATE statements by entering the select or command on the object list panel. (If the system displays the Indexes Defer Options panel, you also have the option to change the default value for the Defer field.)

You use the Process Member menu to select how you want to process the statements you generate. You can execute, edit, delete, print, or accumulate CREATE statements. (If you need a reminder about how to use the Process Member menu and the Accum member, see “Introduction to Operations on Data” on page 235.)

### Description of the functions that generate CREATE statements

The Out DDL (O) select, the OUT command, and the OUTC command generate CREATE statements for the object or objects you specify by entering the select or command. The three functions vary in operation:

- The Out DDL (O) select and the OUT command generate the CREATE statements for any dependent objects of the object or objects that you selected.
- The OUTC command generates the CREATE statements for the dependent objects you specify.

### Object list panels and the Out DDL (O) select and the OUT command

The Out DDL (O) select and the OUT command generate CREATE statements not only for the objects you specify, but also for any dependents of these objects that exist. For example, if the object you select has an alias, the CREATE statements include CREATE statements for the alias.

Review the chart to determine which object list panel you should use to generate the CREATE statements you want. For example, if you only want to generate CREATE statements for Views, synonyms for Views, referential alters, and aliases, enter the select or command on the Views panel. If you want all CREATE statements, enter the select or command on the Databases panel.

	Databases Panel	Table Spaces Panel	Tables Panel	Columns Panel	Indexes Panel	All Objects Panel	Views Panel	Plans Panel	Packages Panel	Alias Panel	Storage Groups Panel
CREATE DATABASE statement	√										
CREATE TABLESPACE statement	√	√									
CREATE TABLE statement	√	√	√								
CREATE SYNONYM statement (for tables)	√	√	√								
CREATE INDEX statement	√	√	√		√						
CREATE VIEW statement	√	√	√		√		√				
CREATE SYNONYM statement (for views)	√	√	√		√		√				
CREATE ALIAS statement	√	√	√		√		√			√	
ALTER statement for referential relationships	√	√	√		√		√			√	



---

## Object list panels and the OUTC command

Unlike the Out DDL (O) select and the OUT command, the OUTC command does not automatically generate CREATE statements for any dependents of the object you chose when you entered the select or command. Instead, when you enter the OUTC command, the system displays the OutDDL Options panel, which lists the types of CREATE statements the system can generate for dependent objects.

```

DATABAS ES ----- DB/WORKBENCH --- DB2=DB31-----
Cmd ==>

                O U T D D L   O P T I O N S

Specify Y or N to each to control which types of dependent are
objects are generated.  Enter Y to include that type of object.

    Tablespaces ==>    CREATEs for Tablespaces.
      Tables ==>      CREATEs for Tables.
Table Synonyms ==>    CREATEs for Synonyms of Tables.
      Indexes ==>     CREATEs for Indexes.
      Views ==>       CREATEs for Dependent Views.
View Synonyms ==>    CREATEs for Synonyms of Views.
Referential Sets ==> ALTERs for Referential Integrity.
      Aliases ==>     CREATEs for Aliases.

Press ENTER to continue.  Press END to abort.

There will be a delay after you press ENTER while data is gathered.

```

---

## Using the OutDDL Options panel

You type **Y** or **N** in the field beside each type of CREATE statement for the dependent object or objects. For example, these objects are dependents on views: the synonym for the view, referential relationships, and aliases. If you are on the Views panel, you can specify whether you want to generate CREATE statements for each of those dependent objects. (You must type **Y** or **N** in the field beside each object.)

---

**Method for generating CREATE statements for object list panels**

Review the chart to determine which command or select you want to use for the task you want to perform. (When you use any of the functions, you display the Process Member menu.)

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Generate CREATE statements for all objects listed and for all the dependent objects	Command	OUT
Generate CREATE statements for all objects listed and for the dependent objects according to the conditions you set on the OutDDL Options panel	Command	OUTC
Generate CREATE statements for the selected object and for its dependent object or objects	Select	Out DDL (O)

---

**The OUT command and CREATE VIEWS statement**

You also can use the OUT command to generate a CREATE VIEW statement. When you use the D (Detail) select on the Views panel, the system displays the CREATE VIEW statement that was used to define the view. To generate the statement, type **OUT** on the command line and press Enter. You use the Process Member menu to execute, edit, delete, print, or accumulate the statements.

## Generating DROP or FREE Statements

---

### Overview

This unit contains a description of the functions that generate DROP and FREE statements and the methods to generate these statements for objects.

---

### Description of the functions that generate DROP or FREE statements

The FREE (F) select, the DROP command, and the FREE command generate statements for the object(s) you specified when you used the command or select. When you use these selects or commands, the system also DROPS objects that are directly or indirectly dependent on the object you DROP.

You generate these statements by entering the select or command on an object list panel. You use the Process Member menu to select how you want to process the statements you generate. You can execute, edit, delete, print, or accumulate the statements. (If you need a reminder about how to use the Process Member menu and the Accum member, see “Introduction to Operations on Data” on page 235.)

---

### Methods for generating DROP statements

You can generate DROP statements from these object list panels: Databases, Table Spaces, Tables, Indexes, Views, Plans, and Packages panels. When you use the command, the system displays the Process Member menu.

Review the chart to determine the command to use. (If you want to limit objects that are dropped, use filtering before entering the command.)

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Generate DROP statements for all objects listed	Command	DROP

---

**Method for generating FREE statements**

You can generate FREE statements on the Packages and Plans panels. When you use the function, the system displays the Process Member menu.

Review the chart to determine the method to use. (If you want to limit objects that are dropped, use filtering before entering the command.)

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Generate FREE statements for all objects listed	Command	FREE
Generate FREE statements for selected object only	Select	FREE (F)

## Generating GRANT Statements

---

### Overview

This unit contains a description of the function that generates GRANT statements and the methods to generate these statements for objects.

---

### Description of the function that generates GRANT statements

When used on an object list panel displaying authorizations, the O (Output) select generates GRANT statements for the selected object.

You use the Process Member menu to select how you want to process the statements you generate. You can execute, edit, delete, print, or accumulate the statement. (If you need a reminder about how to use the Process Member menu, see “Introduction to Operations on Data” on page 235.)

---

### Method for generating GRANT statements

You can generate GRANT statements from any object list panel that supports the Auths (Z) select. For example, you can display authorizations on the Databases, Table Spaces, Tables, and Views panels. Review the chart for the select to use. (If you want to generate GRANT statements for more than one selected object, you can accumulate the statements and execute them from the Process Member menu.)

<b>Task You Want to Perform</b>	<b>Method</b>	<b>Name</b>
Generate GRANT statements for the selected object	Select	O (Output)



# Chapter 15. Using ALTER Commands and Selects

---

## Introduction

This chapter contains essential background information and procedures for preparing ALTER statements using commands and selects available from the !DB/WORKBENCH panels. It includes information for ALTER statements for databases, table spaces, indexes, and tables. Before using the information in this chapter, see “Introduction to Operations on Data” on page 235.

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## Overview of Chapter

### Organization of the chapter

The chapter begins with an overview of resources available to you and includes charts to help you select the type of ALTER statements you want to create. The remainder of the chapter consists of procedures to create these ALTER statements. Review the chart to determine the procedure that you need for the specific ALTER statement you want.

	Authority Required	ALTER Statements	Specific Tasks	Accessing Panels	Altering Varied Data	Altering Tables Only	Adding a Column	Adding a Primary Key	Adding a Foreign Key	Dropping a Primary Key	Dropping a Foreign Key	Completes
	p.298	p.299	p.300	p.303	p.305	p.307	p.309	p.311	p.312	p.316	p.317	p.318
Determine the method to use in !DB/WORKBENCH for a specific ALTER statement		√										
Determine the method to use to generate ALTER statements for a specific task			√									
Generate and process ALTER statements for databases, table spaces, and indexes	√			√	√							√
Generate and process ALTER statements to add a column to a table	√			√		√	√					√
Generate and process ALTER statements to add a primary key to a table	√			√		√		√				√
Generate and process ALTER statements to add a foreign key to a table	√			√		√			√			√
Generate and process ALTER statements to drop a primary key from a table	√			√		√				√		√
Generate and process ALTER statements to drop a foreign key from a table	√			√		√					√	√



## Resources for Determining Values for Altering Data Structures

---

### Charts for values used when altering data structures

This guide includes a chapter that shows the values necessary for the fields that you complete when using ALTER panels. The chapter also includes information about conditions you must meet if you enter a specific value.

For more information about the types of information available, see the chapter “Values Used When Creating or Altering Objects” in *!DB/WORKBENCH Reference Manual*.

---

### Reminder about resources for altering data structures

These resources are also available for altering data:

- Online Help
- Instructions on the panels you use to ALTER data structures

If you need a reminder about these resources, see “Introduction to Operations on Data” on page 235.

## Authority Required to ALTER Data Structures

---

### Authority requirements for altering data structures

Whether you plan to alter a database, table space, index, or table, you must have DB2 authority. Any of these types of authority are accepted:

- SYSADM authority
- DBADM authority
- Authority implicit in having created the database, table space, index, or table

---

### Reminder about altering data structures within !DB/WORKBENCH

Although you must have specific levels of authority to use commands and selects that ALTER data structure, you do not immediately implement the ALTER statements. !DB/WORKBENCH generates the ALTER statements and saves them to a member in the user PDS. You can exit !DB/WORKBENCH without submitting the ALTER statements. You also can execute, edit, delete, or print the saved ALTER statements.

## Selecting Methods to Generate ALTER Statements

### Availability of ALTER statements using !DB/WORKBENCH

The chart shows the method to use with !DB/WORKBENCH if you want to generate ALTER statements for databases, table spaces, indexes, or tables.

SQL Statement You Want to Use	Object(s) to ALTER	Equivalent Action in !DB/WORKBENCH
ALTER DATABASE	All databases listed	On the Databases panel, the ALTER command
	A selected database	On the Databases panel, the Alter (A) select
ALTER INDEX	All indexes listed	See “Altering an index” on page 301.
	A selected index	See “Altering an index” on page 301.
ALTER TABLESPACE	All table spaces listed	On the Table Spaces panel, the ALTER command
	A selected table space	On the Table Spaces panel, the Alter (A) select
ALTER TABLE	A selected table	On the Tables panel, Alter (A) select
	A selected table	On the Aliases panel, the Alter (A) select

## Selecting Methods for Specific Tasks

### Overview

The unit contains information about actions you can perform for databases, table spaces, tables, or indexes. It also contains a detailed list of tasks you can perform for a table.

### Tasks you can perform for databases, table spaces, tables, and indexes

You can perform these tasks for databases, table spaces, tables, and indexes by using the ALTER command or Alter (A) select available in !DB/WORKBENCH.

Object(s) You Want to Modify	Panels to Use	Method to Use
All databases listed on a panel	Databases panel	ALTER command
A database you select	Databases panel All Objects panel	Alter (A) select
All indexes listed on a panel	Indexes panel	ALTER command*
An index you select	Indexes panel All Objects Panel	Alter (A) select*
All table spaces listed on a panel	Table Spaces panel	ALTER command
A table space you select	Table Spaces panel Aliases panel All Objects panel	Alter (A) select
A table you select	Tables panel Aliases panel All Objects panel	Alter (A) select

\*This function is not active in the current release. See “Altering an index” on page 301 for another method.

---

**Altering an index**

Use the following steps to alter an index.

Step	Action
1	On the Primary Menu, select <b>T-Tables</b> and press Enter. <b>Result:</b> The system displays the Tables panel listing the names of tables you can alter.
2	Type <b>A</b> before the name of table associated with the index you want to alter and press Enter. <b>Result:</b> The system displays the Alter Table pop-up.
3	Select <b>1</b> to access the !DB/QUICKCHANGE functions and press Enter. <b>Result:</b> The system displays the !DB/QUICKCHANGE Primary Menu.
4	On the !DB/QUICKCHANGE Primary Menu, select <b>2-Tables/Columns</b> and press Enter. <b>Result:</b> The system displays the Include Options panel.
5	Complete the fields on the Include Options panel and press Enter. <b>Result:</b> The system displays the Tables Being Changed panel.
6	Type <b>I</b> before the name of the table associated the index you want to alter and press Enter. <b>Result:</b> The system displays a panel that presents options for Add, Change, Drop, or Undrop for the indexes associated with the table.
7	Select the alter procedure that you want to use on the index and press Enter. Complete the alter panels accordingly.

### Detailed list of tasks you can perform for a table

You can perform these tasks for a table by using ALTER functions available in !DB/WORKBENCH.

- Add a column to the end of a table
- Add a primary or a foreign key to a table
- Drop a primary or foreign key from a table
- Specify an audit trail for the table
- Specify data capture
- Specify a validation procedure
- Change the label for a table
- Add or change comments for a table

---

### Methods to use to perform tasks for tables

To change an attribute for a table, use the Alter (A) select. !DB/WORKBENCH does not allow you to use the ALTER command on the Tables panel, because the attributes you can change for tables are seldom changed for more than one table at a time. For example, it would be unlikely that you add the same new column to multiple tables.

## Accessing Panels to Specify Data to ALTER

### Overview

The unit contains instructions for accessing panels that help you prepare ALTER statements for databases, table spaces, indexes, and tables. It includes information that you need to use the ALTER command or the Alter (A) select.

### Objects and the ALTER command or select

Review the chart for the consequences to data and the ALTER commands or Alter (A) selects with specific objects.

ALTER Function	What Data Is Affected	Where the Function Is Available
ALTER command	ALTER all objects listed on the panel	Databases panel Indexes panel* Table Spaces panel
Alter (A) select	Alter only the selected object	Databases panel Indexes panel* Table Spaces panel Tables panel

### Accessing panels to specify data to alter by using the ALTER command

\*This function is not active in the current release. See “Altering an index” on page 301 for another method.

If you want to use the ALTER command to alter all objects listed on the Databases, Table Spaces, or Indexes\* panel, follow these steps.

Step	Action
1	On the panel, type <b>ALTER</b> on the command line.
2	Press Enter. <b>Result:</b> The system displays a panel listing the values that you can alter.

---

### Accessing panels to specify data to alter by using the Alter (A) select

If you want to use the Alter (A) select to alter a selected object on a panel (whether the Databases, Indexes\*, Table Spaces, or Tables panel), follow these steps.

Step	Action
1	On the panel, type <b>A</b> in the Select field.
2	Press Enter. <b>Result:</b> The result varies with the products installed on your systems: <ul style="list-style-type: none"> <li>● If you have installed !DB/QUICKCHANGE along with !DB/WORKBENCH, the system displays a menu listing functions available from these products.</li> <li>● If you have installed !DB/WORKBENCH only, the system displays a panel listing the values you can alter.</li> </ul>
3	If the menu listing options available with !DB/QUICKCHANGE is displayed, type the number of the option for DB2 supported functions in the Select field.
4	Press Enter. <b>Result:</b> The system displays a panel listing the values that you can alter.

This function is not active in the current version. See “Altering an index” on page 301 for another method.

---

### If you want information about !DB/QUICKCHANGE

If you have installed !DB/QUICKCHANGE and you want to evaluate functions available from the product, see *!!DB/QUICKCHANGE® User's Guide*.



## Altering Databases, Tables Spaces, or Indexes

### Overview

The unit provides a chart listing the values that you can alter for databases, table spaces, and indexes and general instructions for developing ALTER statements for each of these objects.

### Values that you can alter for databases, table spaces, or indexes

You can change the values that are associated with databases, table spaces, and indexes. The chart lists which values you can establish or change with !DB/WORKBENCH using the ALTER command or the Alter (A) select on the specific panel. (To review the values that are associated with tables, see “Detailed list of tasks you can perform for a table” on page 302 in the previous unit of this chapter.)

	Alter Database	Alter Table Space	Alter Index
Buffer pool ID	√	√	√
CLOSE setting		√	√
COMPRESS setting		√	
ERASE setting		√	√
FREEPAGE value		√	√
Gbpcache		√	√
INDEX TYPE value			√
LOCKMAX setting		√	
LOCKSIZE setting		√	
PCTFREE value		√	√
Priqty value		√	√
ROSHARE setting	√		
Secqty value		√	√
Stogroup name	√	√	√
SUBPAGES value			√
VCAT name		√	√

### Data for databases, table spaces, and indexes

Although the values that you can alter vary for databases, table spaces, and indexes, the method you use to alter the data is the same. Follow these steps.

Step	Action
1	<p>On the Alter panel, type the new values that the system uses when creating the ALTER statements in the field.</p> <p><b>Example:</b> On the Database Alter panel, type <b>BP32K</b> in the Buffer Pool field.</p>
2	<p>Press Enter.</p> <p><b>Result:</b> The system generates the ALTER statement for values you have typed and displays the Process Member menu.</p>

### Determining what to do next

For instructions on options available with the Process Member menu, see the unit “Completing Processes for ALTER Statements” on page 318.

## Altering a Table

---

### Overview

This unit contains instructions for the tasks you can perform on the Alter a Table panel. It also provides an overview of the options you can select from the panel and the organization of information about these options.

---

### Background about embedded quotations

If you plan to alter the comments on the label for a table, use single quotation marks to embed quotations in the text. (!DB/WORKBENCH writes the ALTER statements and inserts double quotation marks.)

---

### Actions you can perform on the Alter a Table panel

You can use fields displayed on the Alter a Table panel to create ALTER statements to control the table. Review the chart for the actions you can perform using these fields and for the conditions for using these fields. (When you display the Alter a Table panel, the system displays the current values for the fields discussed in the chart.)

Field Name	Action You Can Perform	Condition
Audit	Set the audit trail for the table	If you change the value, you invalidate all plans using the table. Valid values for the field are: <ul style="list-style-type: none"> <li>● C (Audit changes only)</li> <li>● A (Audit all)</li> <li>● N (Do not audit)</li> </ul>
Comments	Change the comments for the table	Maximum length is 256 characters.
Data Capture	Direct the system to record SQL changes to the table to the DB2 log	Valid values for the field are: <ul style="list-style-type: none"> <li>● C (Write changes to the log)</li> <li>● N (Do not capture changes)</li> </ul>

---

**Actions you can perform on the Alter a Table panel (continued)**

These actions are also available on the panel.

<b>Field Name</b>	<b>Action You Can Perform</b>	<b>Condition</b>
Label	Change the label for the table	Maximum length is 30 characters.
Restrict w/Drop	Indicate that the table, database, or tablespace cannot be dropped.	Type Y for yes, N for no.
Validproc	Name the validation procedure for the table	A blank indicates there is no validation procedure for the table.  The system invokes the validation procedure just before a row is updated or inserted.

---

**Options you can select on the Alter a Table panel**

These options are available on the Alter a Table panel and are covered specifically in subsequent units.

- Adding a column
- Adding a primary key
- Adding a foreign key
- Dropping a primary key
- Dropping a foreign key

---

**Organization of information about options**

Each option that you can select from the Alter a Table panel is organized in the same way:

- A brief description of the option and an overview of the procedure you perform when using the option
- Supporting information such as prerequisites (if applicable)
- Procedure to generate the ALTER statement
- Information on what to do next

## Adding a Column to a Table

---

### Description of the option to add a column to the end of a table

The option generates ALTER statements required to add one or more columns to the table that you selected using the Alter (A) select. You perform the procedure by entering values in fields on a panel. If you want to add more than one column, you perform the procedure one time for each column.

---

### Prerequisites for adding a column

To add a column to the end of a table, you need to determine this information for the column:

- Name of the column
  - Whether you want to set a requirement for a default value for a not-null column
  - Data type (if you require a default value)
  - Length for the column
  - Scale for the column (if you define the data type as a decimal)
  - Value for For Bit (if you define the data type as character data)
- 

### Resources for determining the values for adding a column

These resources exist to help you determine the values you want to use to add a column to the end of a table:

- The panel that displays the fields required (The panel includes brief instructions and lists available data types.)
- Online Help
- Chapter “Values Used When Creating or Altering Objects” in *!DB/WORKBENCH Reference Manual*

### Procedure for adding a column

Follow these steps to add a column to a table.

Step	Action
1	On the Alter a Table panel, type <b>1</b> in the Option field.
2	Press Enter. <b>Result:</b> The system displays a panel listing the data required to add a new column.
3	Type the values in each field.
4	Press Enter. <b>Result:</b> The system redisplay the Alter a Table panel.

---

### Determining what to do next

Once you have added all of the columns you want to add to the table, see the unit “Completing Processes for ALTER Statements” on page 318.

## Adding a Primary Key to a Table

---

### Description of the option to add a primary key

The option generates ALTER statements required to add a primary key to the table that you selected using the Alter (A) select. You perform the procedure by selecting a unique index from a list of available indexes.

---

### Prerequisites for adding a primary key

Three prerequisites exist for adding a primary key to a table.

- The index you select must be a unique index. (A column indicating whether the index is unique is part of the list of available indexes that the system displays during the procedure.)
- The table you selected using the Alter (A) select must not have a primary key. (If you select the option and the table already has a primary key, the system displays an error message.)
- The table you select using the Alter (A) select must have indexes. (If you select the option and the table does not have indexes, the system displays an error message.)

---

### Procedure for adding a primary key

Follow these steps to add a primary key to a table.

Step	Action
1	On the Alter a Table panel, type <b>2</b> in the Option field.
2	Press Enter. <b>Result:</b> The system displays a panel listing the indexes.
3	Type <b>S</b> in the Select field for the index you want.
4	Press Enter. <b>Result:</b> The system redisplay the Alter a Table panel.

---

### Determining what to do next

To process the ALTER statements that the system generated, see the unit “Completing Processes for ALTER Statements” on page 318.

## Adding a Foreign Key to a Table

---

### Description of the option to add a foreign key

The option generates ALTER statements required to add a foreign key to the table that you selected using the Alter (A) select. You perform these tasks to add a foreign key:

- Select a primary key as the parent for the referential relationship, and simultaneously indicate the Delete Rule you want to be used for the referential relationship.
- If more than one match between the columns is possible, select the foreign key from a list of columns in the table.

---

### Prerequisites for data when adding a foreign key

The columns for the foreign and primary keys must be the same in these characteristics:

- Data type (such as CHAR or SMALL INT)
- Length of the data (such as 8 characters long)
- Number of columns

---

### Prerequisite for the Delete Rule

The system applies the Delete Rule you specify in this procedure if you later delete rows from a parent table. Three values are valid for the Delete Rule:

- C (With Cascade, the system deletes any related row or rows in a dependent table.)
- R (With Restrict, the system blocks anyone from deleting any rows in a parent table, if the parent table has dependents.)
- N (With Set Null, the system sets any rows in the dependent tables to nulls.)



---

### Procedure to select a parent table when adding a foreign key

Follow these steps to begin the process of adding a foreign key to a table by selecting the table to be the parent in the referential relationship. (You can select only one table as the parent table.)

Step	Action
1	On the Alter a Table panel, type <b>3</b> in the Option field.
2	Press Enter. <b>Result:</b> The system displays a panel of instruction for adding a foreign key. The first instruction asks you to give a name to the relationship between the foreign key and the table.
3	Perform the appropriate action: <ul style="list-style-type: none"> <li>● If you want to name the relationship, type the name in the field.</li> <li>● If you want DB2 to name the relationship, ignore the field.</li> </ul>
4	Press Enter. <b>Result:</b> The system displays a panel with instructions and lists all tables that have a primary key.
5	Type the appropriate value in the Select field for the table. <ul style="list-style-type: none"> <li>● To use the Cascade Delete Rule, type <b>C</b>.</li> <li>● To use the Restrict Delete Rule, type <b>R</b>.</li> <li>● To use the Set Null Delete Rule, type <b>N</b>.</li> </ul>
6	Press Enter. <b>Result:</b> The result varies with the table you selected: <ul style="list-style-type: none"> <li>● If only one match exists between the columns in the primary key and the table, the system generates the ALTER statements and redisplay the Alter a Table panel.</li> <li>● If multiple matches exist, the system displays the Add Foreign Keys panel that allows you to select from the columns in the parent table.</li> </ul>

---

### Determining what to do next

Two sources of information exist:

- If the system redisplayed the Alter a Table panel, see the unit “Completing Processes for ALTER Statements” on page 318.
- If the system displays the Add Foreign Keys panel, see the unit “If Multiple Matches Exist for Foreign Keys” on page 314.

## If Multiple Matches Exist for Foreign Keys

### Overview

Follow the instructions in this unit only if you are adding a foreign key and the system displays a panel that allows you to select from the columns in the parent table. The unit contains background information and instructions to use if only one primary key matches or if more than one primary key matches.

### Background about specifying a foreign key column

The way that the system operates depends on the number of possible matches that exist between the table that you initially selected with the Alter (A) select and the parent table that you selected in this procedure. The system continues to display a panel similar to this one until no more matches are possible. The panel includes the data type and the length for both the primary key columns and the columns of the table so that you can determine which columns have the prerequisite common values.

```

ADD FOREIGN KEYS ----- DB/WORKBENCH -- DB2=D23A----- LINE 1 OF 10
Cmd ==>                                     Scroll ==> PAGE

The table columns are listed. Select one Foreign Key column at a time.
Select a column, then press ENTER.

      SELECTED PRIMARY KEY TABLE      IDC122T.PRODUCT

          PRIKEY COLUMNS                                FOREIGN KEY COLUMNS
          -----
-->>  PRODUCT_CD          CHAR          4
-----
SEL  COLUMN NAME      TYPE      LENGTH  NL  UP
---  -----
-   TAX_CD            CHAR        4      NL
-   AR_DIVISION       CHAR        4      NL
    
```

### Background about alternative entry if more than one primary key matches

If the columns in the primary key are in the same order as the columns in the table, you can type **S** in the Select field for each table column and press Enter. You do not need to wait for the system to respond to each select as is explained in this procedure.

---

**If only one primary key matches the table columns**

If only one primary key matches the table column, follow these steps.

Step	Action
1	On the Add Foreign Key panel, type <b>S</b> in the Select field for the table column to become the foreign key.
2	Press Enter. <b>Result:</b> The system generates the ALTER statements and redisplay the Alter a Table panel.

---

**If more than one primary key matches the table columns**

If more than one primary key matches the table columns, follow these steps. (The procedure shows two primary keys; however, more keys are possible.)

Step	Action
1	On the Add Foreign Keys panel, type <b>S</b> in the Select field for the table column to become the foreign key for the first primary key column.
2	Press Enter. <b>Result:</b> The system displays the name of the column on the row with the primary key and highlights the next primary key.
3	Type <b>S</b> in the Select field for the table column to become the foreign key for the next primary key column.
4	Press Enter. <b>Result:</b> The system generates the ALTER statements and redisplay the Alter a Table panel.

---

**Determining what to do next**

To process the ALTER statements that the system generated, see the unit “Completing Processes for ALTER Statements” on page 318.

## Dropping a Primary Key from a Table

---

### Description of the option to drop a primary key

The option generates ALTER statements required to drop a primary key from the table that you selected using the Alter (A) select. You perform the procedure by selecting the option. The system generates the ALTER statements even if no primary key is defined for the table you selected.

---

### Procedure to drop a primary key from a table

Follow these steps to drop a primary key.

Step	Action
1	On the Alter a Table panel, type <b>4</b> in the Option field.
2	Press Enter. <b>Result:</b> The system generates the required ALTER statement.

---

### Determining what to do next

To process the ALTER statements that the system generated, see the unit “Completing Processes for ALTER Statements” on page 318.

## Dropping a Foreign Key from a Table

---

### Description of the option to drop a foreign key

The option generates ALTER statements required to drop a foreign key from the table that you selected using the Alter (A) select. You perform the procedure by selecting one or more dependent tables from a list of all tables dependent upon the table.

### Procedure to drop a foreign key from a table

Follow these steps to drop a foreign key.

Step	Action
1	On the Alter a Table panel, type <b>5</b> in the Option field.
2	Press Enter. <b>Result:</b> The system displays a panel listing all the tables that are dependent on the table you selected.
3	Type <b>D</b> in the Select field for each foreign key you want drop.
4	Press Enter. <b>Result:</b> The system generates the required ALTER statement.

### Determining what to do next

To process the ALTER statements that the system generated, see the unit “Completing Processes for ALTER Statements” on page 318.

## Completing Processes for ALTER Statements

---

### Overview

The unit contains an overview of the options available for using the ALTER statements you generated and explains how the system responds if there is a problem with the ALTER statements.

---

### Overview of options available for the ALTER statements

These options are available to use with the ALTER statements that you have generated.

Option on the Menu	System Response
DO NOW	Executes the ALTER statements you generated
EDIT	Invokes the ISPF editor and displays the contents of the member (When you complete editing, the system redisplay the Process Member menu.)
DELETE	Deletes the member containing the saved ALTER statements from the user PDS; returns to the object list panel
PRINT	Prints the contents of the PDS member to a JES printer
END	Leaves the member in the !DB/WORKBENCH user PDS and redisplay the object list panel (The next time you generate ALTER statements, the system overwrites the member.)

---

### If a problem occurs when the system executes the ALTER statements

If an error occurs when the system executes the ALTER statements, the system performs these actions:

- Executes a ROLLBACK.
- Displays an error panel describing the DB2 error.

---

**Completing processes for databases, table spaces, indexes or tables**

Follow these steps to complete the process for ALTER statements generated for databases, table spaces, indexes, or tables.

<b>Step</b>	<b>Action</b>
1	On the Alter a Table panel, type <b>END</b> on the command line and press Enter, or press the appropriate function key. <b>Result:</b> The system displays the Process Member menu.
2	On the Process Member menu, type the number of the option you want.
3	Press Enter.
4	If necessary, follow instructions on the panel to complete the option you chose.





## Introduction

This chapter provides an introduction to the creation and use of macros to help increase your productivity. It includes fundamentals for creating macros using commands, selects, filters, and sorts that you frequently use in !DB/WORKBENCH. Before using the information in this chapter, review “Introduction to Operations on Data” on page 235.

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## Overview of the Chapter

### Organization of information in the chapter

The chapter provides an introduction to !DB/WORKBENCH macros and includes basic prerequisites for creating and using macros. It provides an overview of how to use macros and charts listing the !DB/WORKBENCH commands that you can use in macros to perform tasks and to display objects. The chapter also includes instructions for invoking a macro and examples.

### Organization of information and your needs

Review the chart to select information appropriate for the task you want to perform.

	Prerequisites	Overview of Use	Functions	Common Tasks	Invoking Macros	Examples	Examples of Tasks
	p.323	p.324	p.326	p.328	p.329	p.330	p.332
Determine prerequisites for macros	√						
Review an introduction to macros and how they affect the system		√	√				
Review functions available for !DB/WORKBENCH macros			√				
Review symbols available in !DB/WORKBENCH macros				√			
Review detailed examples of macros and the system response						√	
Review examples of macros for commonly performed tasks							√
Create a macro	√	√	√	√			
Run an existing macro	√	√			√		

## Prerequisites for Macros in !DB/WORKBENCH

---

### Overview

This unit contains background information about macros and prerequisites for creating and using macros.

---

### Background about macros

In !DB/WORKBENCH, you can create macros, combinations of commands and selects that you can invoke by entering the member name for the macro. In a macro, you can use any command, select, sort, or filter that is available on the panel, and these functions operate in the macro as they do if you enter them one by one.

---

### Prerequisites for creating macros

When creating macros, you must meet these requirements:

- Write and keep all macros in the user PDS (your partitioned dataset).
  - When you name the member that will contain the macro, begin the member name with a \$ (dollar sign).
- 

### Prerequisites and restrictions for using macros

When using macros, you must meet these requirements:

- Before you use a macro on an object list panel, be sure that all of the commands, selects, sorts, and filters used in the macro are valid for the panel.
  - Do not invoke a macro from the !DB/WORKBENCH Primary Menu.
  - Not all commands are designed to work inside a macro. For instance, the PDSCOPY command and the PDSEEDIT command do not work inside either an edit macro or a !DB/WORKBENCH \$MACRO.
- 

### Reminders about command and selects

If you need a reminder about issues for using command and selects, see the chapter “Introduction to Display” on page 129.

---

## Overview of How to Use Macros

---

### Overview

This unit contains an example of how you can use simple macros to increase your productivity. The information on this page describes the characteristics of the example and shows the content of the two macros. The procedure shows how to use the macros and describes what the system does as a result of the macro.

---

### Characteristics of the example

In the example shown in this unit, you repetitively perform the same action with the same set of tables. The names of the tables begin with the letters *ACT*. In your !DB/WORKBENCH user PDS, you create a member that you name \$TBPLAN. The \$TBPLAN member contains these instructions:

```
NOF
TB=ACT*
STT
SORTD CR
PLAN
```

In your !DB/WORKBENCH user PDS, you also create a second member named \$N. The \$N member contains these instructions:

```
NOSTT
NOFILT
```

In your TSO/ISPF profile, you have programmed the PF3 key to perform as the END command.

---

## Procedure to invoke the example macro

The chart shows the events that occur if you invoked the example macro \$TBPLAN.

Step	Action
1	On the Tables panel, type <b>\$TBPLAN</b> on the command line.
2	Press Enter.  <b>Result:</b> The system processes the commands in the order that they are in the macro, one by one, without displaying panels, and only displays the result of the last command in the macro. When processing is complete, the system displays the Plans panel which lists (in descending order) all the plans that are dependent on the tables you specified in the macro.
3	When you are ready to see the results of the STT command (the command before the PLAN command) and all filtering, press the PF3 key.  <b>Result:</b> The system displays the Tables panel and the statistics for the tables. The only tables listed are those beginning with the letters <i>ACT</i> .
4	When you are ready to clear the statistics and all filtering from the Tables panel, type <b>\$N</b> on the command line.
5	Press Enter.  <b>Result:</b> The system redisplay the Tables panel with all tables listed and without statistics.

## Functions Available in Macros

---

### Overview

This unit provides background information about using selects in macros and about using macros within macros. It also includes examples of functions available in macros.

---

### Background about using selects in macros

The chart lists the method to use a macro to supply the value for a select to objects visible on the panel. (You also can use this method online.)

Task You Want to Perform	Action When Creating the Macro
Supply the value for a select to all the objects currently displayed on the panel, but not to the entire object list	Type <b>S</b> followed by the value for the select.  <b>Example:</b> If you want to apply the value <b>V</b> for the Views ( <b>V</b> ) select to all objects displayed, type <b>S V</b> in the macro.

---

### Additional information about using multiple selects

Before you use multiple selects, you should become familiar with the consequences to data that can occur with some selects. If you plan to use the **S** command to apply multiple selects and want to use a command that generates statements (such as **ALTER**, **BIND**, or **CREATE** statements), see “Introduction to Operations on Data” on page 235.

---

## Background about using macros in macros

You can create a macro that invokes another macro. For example, you can create a macro named \$TBFILT that contains the instructions:

```
TB=ACT*
DEPDTS>1
```

You can invoke the macro \$TBFILT from another macro by using these instructions:

```
$TBFILT
STT
PLAN
```

---

## Comparison of functions available online and in macros

In a macro, you can perform the functions that you can use on a panel (including using a macro). The chart lists functions and examples of how it is typed on the panel and how it is entered as an instruction in the macro.

Function Available in a Macro	Example When Entered on a Panel	Example of an Instruction in the Macro
Command	STT BIND (followed by the END command)	STT BIND/END
Select	S P	S P
Filter for names	DB=DBACCT	DB=DBACCT
Filter for a status	STATS=Y	STATS=Y
Filter using an operand for comparison	INDEXES<4	INDEXES<4
Sort	SORT DB	SORT DB
A macro	\$MACTEST	\$MACTEST

## Common Tasks When Creating Macros

---

### Overview

When you create macros in !DB/WORKBENCH, you can perform a variety of tasks such as adding comments or continuing lines of text in the macros. This unit provides a chart showing how to accomplish these tasks using !DB/WORKBENCH.

---

### Tasks frequently performed when creating macros

Review the chart for the method to perform common tasks when creating macros.

Task You Want to Perform	Action When Creating the Macro
Add a comment to a macro	Type an asterisk (*) as the first character of each line of the comment. (You cannot continue a comment line using a plus sign.)
Apply the subsequent command to each selected object	Type a forward slash (/) between the functions. <b>Example:</b> S P/REBIND
Continue a line of a macro to the next line	Type a plus sign (+) as the last character of the line that is being continued.
Suspend processing of the macro for the current panel and wait for you to supply input	Type ? on a line by itself.



## How to Invoke a Macro

---

### Invoking a macro

Be sure you meet all requirements for creating and using macros. Follow these steps to invoke the macro.

Step	Action
1	On the !DB/WORKBENCH Primary Menu, type the letter for the panel in the Option field. <b>Example:</b> If you want to run a macro with table spaces, type <b>S</b> in the Option field to access the Table Spaces panel.
2	Press Enter.
3	On the object list panel, type the member name for the macro on the command line. <b>Example:</b> If the member name is \$TSTEST, type <b>\$TSTEST</b> on the command line.
4	Press Enter.

## Detailed Examples of Macros

### Example of a macro using selects and commands

In this example, you must use the macro on the Databases panel. The macro filters the object list for databases to one database, displays the plan's dependents on the database, generates the REBIND statement, and saves the statements. In the macro, the slash (/) indicates that the subsequent command is to be applied to each select on the panel. The macro contains these instructions:

```
NOF
DB=DBACCT
S P/REBIND/END
END
```

Review the chart for a description of the response of the system to each instruction in the macro. The system responds to each of the instructions in the macro, but does not display data until the last instruction in the macro.

Instruction in the Macro	Internal Response of the System
NOF	Turns off all existing filters (optional)
DB=DBACCT	Filters the object list to one object (DBACCT)
S P/	Uses the P (Plan) select with DBACCT and lists plans that are dependent the DBACCT database
REBIND/	Accesses the option and values on the panel used with the REBIND command (Reminder: When you use the REBIND command online, you use the END command to process the panel.)
END	Generates REBIND statements using the values on the panel and accesses the Process Member menu that lists options for these statements
END	Saves the REBIND statements to the member in the user PDS for statements such as REBIND; displays the Plans panel

---

## Example of a macro within a macro

In this example, the macro invokes another macro (named \$TBFILT) with filters that you use regularly with tables and then performs the remaining task in the macro. The macro contains these instructions:

```
$TBFILT
PLAN
DEP
```

The macro \$TBFILT contains these instructions:

```
TB=ACT*
DEPDTS>1
```

Review the chart for a description of the responses of the system to each instruction in the macro. (The system responds to the instruction in the macro, but does not display data until the last instruction in the macro is invoked.)

Instruction in the Macro	Internal Response of the System
\$TBFILT	Invokes the \$TBFILT macro; filters the tables to list only those tables beginning with the letters <i>ACT</i> and that have more than one dependent relationship
PLAN	Executes the PLAN command and lists all plans dependent on the subset of tables
DEP	Executes the DEP command and displays all dependents on the plans

## Examples of Macros to Perform Common Tasks

---

### Overview

This unit provides examples of tasks you might perform using macros such as using utilities, displaying and printing data for reports, and generating statements for objects.

---

### Background about the Process Member menu

In the examples of macros, some macros result in the display of the Process Member menu. This menu allows you to review the statements (whether JCL or SQL or other statements) before you invoke DB2 to apply the statements to the system.

If you need a reminder about how to use the Process Member menu, see “Introduction to Operations on Data” on page 235.

---

### Background about the results of macros and the examples

The examples provide the required commands, selects, and filters to perform the tasks. You could, however, add the END command to the macro so that the system returns you to the original display.

---

### Characteristics of the examples

The examples cover use of displays, generation of statements, and utilities of data. They consist of charts consisting of two columns:

- Left columns describe the task you want to perform.
- Right columns describe the panel to be used as the starting point for the example, its macro contents, and the result.

## Examples of displaying data for reports

The chart provides examples of how you can display the data you want in a report.

Task You Want to Perform	Macro Instructions
<p>Print three reports for databases with tables that have referential data:</p> <ul style="list-style-type: none"> <li>● The table sets associated with the tables</li> <li>● The dependents in the referential relationships</li> <li>● A map of the referential relationship</li> </ul> <p>(The database names begin with the same three characters.)</p>	<p><b>Panel:</b> Tables</p> <p><b>Macro contents:</b></p> <pre>NOF DB=DSN* REFS&gt;0 TSSET PRNT END S F/DEP/PRNT/MAP/PRNT/END</pre> <p><b>Result:</b> The system prints the reports to the JES printer and redisplay the Tables panel.</p>
<p>Excluding any segmented table spaces, list table spaces that have more than one table, with the table space that has the greatest number of tables listed first.</p>	<p><b>Panel:</b> Table Spaces</p> <p><b>Macro contents:</b></p> <pre>NOF SEGSIZE=0 TABLES&gt;1 SORTD #T</pre> <p><b>Result:</b> The system displays the list of table spaces, with the table space with the greatest number of tables listed first.</p>
<p>Print two reports for each table with referential relationships:</p> <ul style="list-style-type: none"> <li>● The information about referential integrity for each table</li> <li>● The table spaces that contain referential data</li> </ul>	<p><b>Panel:</b> Tables</p> <p><b>Macro contents:</b></p> <pre>REFS&gt;0 S F/PRNT/SET/PRNT END</pre> <p><b>Result:</b> The system prints the reports to the JES printer and redisplay the Tables panel.</p>

**Examples of generating statements for specific objects**

The chart provides three examples of how to generate statements for specific objects.

Task You Want to Perform	Macro Instructions
<p>Generate REBIND statements for plans with these characteristics:</p> <ul style="list-style-type: none"> <li>● One or more DBRMs</li> <li>● Isolation level of R (Repeatable Read)</li> <li>● Validation time during runtime</li> </ul>	<p><b>Panel:</b> Plans</p> <p><b>Macro contents:</b></p> <pre>NOF VALIDT=R ISOLATN=R DBRMS&gt;0 REBIND END</pre> <p><b>Result:</b> The system displays the Process Member menu.</p>
<p>Generate REBIND statements for plans with these characteristics:</p> <ul style="list-style-type: none"> <li>● Same Creator ID (PRODCTL)</li> <li>● Names with characters in common (**ACC*)</li> <li>● Resources acquired at first use</li> <li>● Resources released at commit</li> </ul>	<p><b>Panel:</b> Plans</p> <p><b>Macro contents:</b></p> <pre>NOF PCR=PRODCTL PLAN=**ACC* ACQUIRE=U RELEASE=C REBIND END</pre> <p><b>Result:</b> The system displays the Process Member menu.</p>

---

**Examples of using DB2 utilities**

The chart provides an example of how you can use DB2 utilities with a macro.

Task You Want to Perform	Macro Instructions
<p>Create the utility JCL necessary to run image or system copies for selected table spaces. You want to review the JCL before you execute it.</p> <p>The table spaces have these characteristics:</p> <ul style="list-style-type: none"> <li>● Within a specific database (DBTSUK33)</li> <li>● Same Creator ID (TSUK33)</li> <li>● No image copies</li> <li>● The values you have in the utility profile for the copy utility result in the display of four panels, each requiring ENTER.</li> </ul>	<p><b>Panel:</b> Table Spaces</p> <p><b>Macro contents:</b></p> <pre> NOF DB=DBTSUK33 CR=TSUK33 ICOPY=N UTIL COPY ENTER ENTER ENTER ENTER </pre> <p><b>Result:</b> The system displays the Process Member menu.</p>

## Examples of Macros to Perform Common Tasks



# Appendix A. 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](http://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
<b>North America</b>	(800) 328-1811	
	(310) 535-3636	(310) 727-4204
<b>Europe</b>		
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.)		
<b>Asia Pacific - English Hub</b>		+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	
<b>Asia Pacific - Japanese Hub</b>	+81 3 3595 7150	+81 3 3595 7110
<b>Asia Pacific - Korean Hub</b>	+82 2 552 8744	+82 2 552 8746
<b>Asia Pacific - Mandarin Hub</b>	+88 62 2739 3223	+88 62 2378 5993
<b>Asia Pacific e-mail address: ap_support@candle.com</b>		

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**  
**E1 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.

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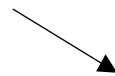
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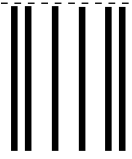
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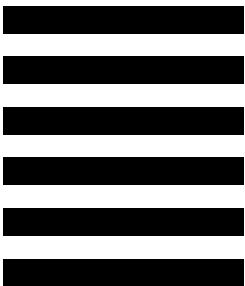
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