

Cincom

AD/ADVANTAGE

MANTIS Program Design and Editing
OS/390, VSE/ESA

P39-5013-00



AD/Advantage[®] MANTIS Program Design and Editing OS/390, VSE/ESA

Publication Number P39-5013-00

© 1992–1999, 2001 Cincom Systems, Inc.
All rights reserved

This document contains unpublished, confidential, and proprietary information of Cincom. No disclosure or use of any portion of the contents of these materials may be made without the express written consent of Cincom.

The following are trademarks, registered trademarks, or service marks of Cincom Systems, Inc.:

| | | |
|-----------------------------------------------------------------------------------|----------------------------------------|-------------------------------|
| AD/Advantage [®] | iD CinDoc [™] | MANTIS [®] |
| C+A-RE [™] | iD CinDoc Web [™] | Socrates [®] |
| CINCOM [®] | iD Consulting [™] | Socrates [®] XML |
| Cincom Encompass [®] | iD Correspondence [™] | SPECTRA [™] |
| Cincom Smalltalk [™] | iD Correspondence Express [™] | SUPRA [®] |
| Cincom SupportWeb [®] | iD Environment [™] | SUPRA [®] Server |
| CINCOM SYSTEMS [®] | iD Solutions [™] | Visual Smalltalk [®] |
|  | intelligent Document | VisualWorks [®] |
| gOOi [™] | Solutions [™] | |
| | Intermax [™] | |

All other trademarks are trademarks or registered trademarks of:

| | |
|---------------------------------------------|--------------------------------|
| Acucobol, Inc. | Micro Focus, Inc. |
| AT&T | Microsoft Corporation |
| Compaq Computer Corporation | Systems Center, Inc. |
| Data General Corporation | TechGnosis International, Inc. |
| Gupta Technologies, Inc. | The Open Group |
| International Business Machines Corporation | UNIX System Laboratories, Inc. |
| JSB Computer Systems Ltd. | |

or of their respective companies.

Cincom Systems, Inc.
55 Merchant Street
Cincinnati, OH 45246-3732
U. S. A.

PHONE: (513) 612-2300
FAX: (513) 612-2000
WORLD WIDE WEB: <http://www.cincom.com>

Attention:

Some Cincom products, programs, or services referred to in this publication may not be available in all countries in which Cincom does business. Additionally, some Cincom products, programs, or services may not be available for all operating systems or all product releases. Contact your Cincom representative to be certain the items are available to you.

Release information for this manual

AD/Advantage *MANTIS Program Design and Editing*, OS/390, VSE/ESA, P39-5013-00, is dated October 30, 2001. This document supports Release 5.5.01 of MANTIS.

We welcome your comments

We encourage critiques concerning the technical content and organization of this manual. Please take the [survey](#) provided with the online documentation at your convenience.

Cincom Technical Support for AD/Advantage

All customers

Web: <http://supportweb.cincom.com>

U. S. A. customers

Phone: 1-800-727-3525

FAX: (513) 612-2000

Attn: AD/Advantage Support

Mail:

Cincom Systems, Inc.

Attn: AD/Advantage Support

55 Merchant Street

Cincinnati, OH 45246-3732

U. S. A.

Customers outside U. S. A.

All:

Visit the support links at

<http://www.cincom.com> to find

contact information for your nearest

Customer Service Center.



Contents

| | |
|-------------------------------------------------------|-------------|
| About this book | xiii |
| Using this document..... | xiii |
| Document organization..... | xiii |
| Conventions..... | xv |
| MANTIS documentation series..... | xviii |
| Educational material | xix |
| | |
| Program Design Facility overview | 21 |
| Features of the Program Design Facility | 23 |
| General overview of the Program Design Facility | 24 |
| Accessing the Program Design Facility | 25 |
| Program Design group headings..... | 26 |
| Program Design options | 27 |
| Component Engineering Facility (CEF) options | 28 |
| Bind Options | 29 |
| Utilities options..... | 30 |
| | |
| Using the Program Design Facility | 31 |
| Panel overview | 32 |
| Command line | 35 |
| Message line | 37 |
| Function key area | 38 |
| Action Bar | 39 |
| Prompt..... | 41 |
| System navigation | 46 |
| Making a menu selection..... | 48 |
| Entering a command | 50 |
| Using PF keys | 53 |
| Using the Action Bar | 55 |
| Selecting from the Prompt..... | 59 |

Panel types.....64
 Menu panels.....65
 List panels67
 Parameter entry panels.....73
 Help panels79
 Error Condition Panels.....84

Program Design Facility commands 85

List of Program Design Facility commands.....86
ACTION.....89
AUDIT90
BILL.....91
BIND.....92
BROWSE93
CANCEL.....94
CEFCHECK95
CHECK.....96
CLEAR97
COMMAND98
COMPOSE.....99
CONFIRM100
COPY101
CREF104
DECOMPOSE.....106
DELETE108
EDIT110
ET.....113
EXECUTE114
EXHELP116
EXIT117
FORWARD118
HELP119
KEYSUPDATE121
L122
LEFT123
LIST.....124
LOGOFF126
MENU.....127
PROFILE.....128
PROMPT.....129
PURGE130
REFRESH.....131
RENAME.....132
RETRIEVE133
RIGHT134
SKIP135

| | |
|------------------------------------------------------------------------|------------|
| SQLBIND | 136 |
| SQLCHECK | 137 |
| SQLMAINT | 138 |
| SQLUNBIND | 139 |
| UNBIND | 140 |
| UPDATE | 141 |
| Program design | 143 |
| List | 145 |
| Moving around the Program Directory List | 147 |
| Selecting programs and components from the Program Directory List..... | 148 |
| Edit..... | 149 |
| Profile | 152 |
| UPDATE Program Profile panel | 154 |
| Addendum processing..... | 156 |
| Purge | 158 |
| Copy | 160 |
| Rename | 162 |
| Using the Full-Screen Editor | 165 |
| Accessing the Full Screen Editor..... | 166 |
| Creating a program..... | 168 |
| Selecting edit without a new program name..... | 168 |
| Selecting Edit with a new program name | 173 |
| Modifying a program | 176 |
| Selecting Edit without an existing program name..... | 176 |
| Selecting Edit with an existing program name..... | 182 |
| Using FSE commands..... | 184 |
| Primary commands | 185 |
| Line commands | 190 |
| Full-Screen Edit Profile..... | 195 |
| Exiting from the FSE..... | 198 |
| FSE programming considerations | 199 |
| Large programs | 199 |
| Priority of commands..... | 201 |
| Stacked commands..... | 202 |
| Multiple line commands..... | 202 |

| | |
|------------------------|-----|
| Editing commands | 203 |
| A (after) | 207 |
| ALTER..... | 209 |
| B (before) | 211 |
| BIND..... | 213 |
| BOTTOM..... | 216 |
| C (copy)..... | 217 |
| CANCEL..... | 219 |
| CHANGE..... | 220 |
| COPY | 226 |
| D (delete) | 229 |
| DOWN..... | 231 |
| END..... | 233 |
| ERASE | 234 |
| ERRCODE | 236 |
| FIND..... | 237 |
| HELP | 243 |
| I (insert) | 245 |
| KILL..... | 247 |
| LEFT | 248 |
| LIST..... | 250 |
| LOAD | 252 |
| LOCATE..... | 254 |
| LOGOFF | 256 |
| M (move)..... | 257 |
| MENU..... | 259 |
| NEW..... | 260 |
| O (overlay) | 262 |
| PRINT | 264 |
| PROFILE..... | 265 |
| PURGE | 267 |
| QUIT | 269 |
| R (repeat)..... | 270 |
| RCHANGE | 272 |
| REPLACE | 274 |
| RESET | 277 |
| RFIND | 279 |
| RIGHT | 281 |
| RUN | 283 |
| S (select) | 285 |
| SAVE..... | 289 |
| SCROLL..... | 291 |
| SEQUENCE | 293 |
| TOP..... | 294 |
| UP | 295 |
| USAGE..... | 296 |

| | |
|-------------------------------------------------------|----------------|
| Component Engineering Facility (CEF) | 297 |
| Overview of the Component Engineering Facility..... | 298 |
| Accessing the Component Engineering Facility | 299 |
| Component Engineering Facility elements | 300 |
| Relationship between source programs | 301 |
| How CEF works..... | 301 |
| Designing and modifying components..... | 303 |
| Designing components..... | 303 |
| Modifying components..... | 305 |
| Source programs..... | 307 |
| Naming conventions for source programs | 308 |
| Coding a new source program | 309 |
| Compose | 315 |
| COMPOSE Program Entry panel | 318 |
| COMPOSE Summary Report..... | 320 |
| COMPOSE Confirmation panel..... | 322 |
| General considerations for Compose..... | 325 |
| Decompose | 326 |
| Nominating components to be decomposed | 327 |
| Decomposing an executable program..... | 329 |
| SOURCE statement in executable programs..... | 330 |
| Decomposing composed programs | 331 |
| Decompose panels..... | 332 |
| General considerations for Decompose | 340 |
| CEF Check | 341 |
| CEFCHECK Program Entry panel..... | 343 |
| CEFCHECK Detail Report..... | 345 |
| CEFCHECK Summary Report..... | 348 |
| Creating COMPOSE trigger records with CEF Check | 350 |
| Cross Reference (CREF) | 352 |
| CREF Program Entry Panel | 354 |
| CREF Summary Report..... | 356 |
| Bill of Materials | 357 |
| Component Where Used List | 362 |
| Bind Options | 365 |
| Bind options for the Program Design Facility | 367 |
| Programming considerations for binding..... | 368 |
| HPO Check, HPO Bind, and HPO Unbind | 373 |
| Starting HPO Bind Options..... | 373 |
| HPO parameter entry panels..... | 377 |
| HPO status codes..... | 380 |

| | |
|-------------------------------------------------------------|------------|
| SQL Check, SQL Bind, SQL Unbind, SQL Maint..... | 381 |
| Starting SQL Bind options..... | 382 |
| SQL parameter entry panels..... | 386 |
| SQL Maint..... | 388 |
| Utilities | 389 |
| Utilities options..... | 390 |
| Audit Trail..... | 392 |
| Browse Audit Trail..... | 397 |
| Browse Program Profile..... | 398 |
| Trigger List..... | 399 |
| Creating trigger records..... | 399 |
| Trigger File List..... | 400 |
| Trigger File commands..... | 405 |
| Trigger File batch processing..... | 421 |
| Reorganize Trigger File..... | 424 |
| Field descriptions | 427 |
| Field descriptions quick reference table..... | 428 |
| Program Design Facility commands | 503 |
| Program Design Facility commands quick reference table..... | 503 |
| Editing commands | 507 |
| Editing commands quick reference table..... | 507 |
| Panels quick reference | 511 |
| Panels quick reference table..... | 511 |

| | |
|------------------------------------|------------|
| PF keys at installation | 517 |
| Trigger file JCL | 519 |
| Trigger file JCL example | 520 |
| Using the Line Editor | 523 |
| Accessing the Line Editor | 524 |
| Creating a program..... | 525 |
| Modifying a program | 526 |
| Exiting from the Line Editor | 528 |
| Glossary of terms | 529 |
| Index | 553 |

About this book

Using this document

MANTIS is an application development system that consists of design facilities (e.g., screens and files) and a programming language. This manual describes MANTIS program design and editing.

Document organization

The information in this manual is organized as follows:

Chapter 1—Program Design Facility overview

Describes the MANTIS Program Design Facility, which provides you with design features that simply program development and maintenance.

Chapter 2—Using the Program Design Facility

Describes the Program Design Facility and its functions.

Chapter 3—Program Design Facility commands

Describes the individual commands used with the Program Design Facility.

Chapter 4—Program design

Describes each menu option under the Program heading on the Program Design Facility menu .

Chapter 5—Using the Full-Screen Editor

Explains how to create and maintain your MANTIS programs using the Full-Screen Editor.

Chapter 6—Component Engineering Facility (CEF)

Describes how to create MANTIS programs that include reusable subroutines, called components.

Chapter 7—Bind Options

Describes Bind Options, which allow you to declare certain complex and simple variables and assign storage to them before program execution.

Chapter 8—Utilities

Describes the various options that are available under the Utilities group heading on the Program Design Facility menu.

Appendix A—Field descriptions

Describes the individual fields that are displayed on the Program Design Facility panels.

Appendix B—Program Design Facility commands quick reference

Provides a quick reference list of the commands used with the Program Design Facility.

Appendix C—Editing commands quick reference

Provides a quick reference list of the commands used with the Full-Screen Editor and the Line Editor.

Appendix D—Panels quick reference

Provides a quick reference list of panels used with the Program Design Facility.

Appendix E—PF keys at installation

Provides system default values of PF keys at the time of installation.

Appendix F—Trigger file JCL

Describes the Trigger file, an external file that hold actions you want to defer for later execution.

Appendix G—Using the Line Editor

Describes the MANTIS Line Editor, which allows you to create and modify your MANTIS programs line by line.

Glossary of terms

Index

Conventions

The following table describes the conventions used in this document series:

| Convention | Description | Example |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Constant width type | Represents screen images and segments of code. | Screen Design Facility GET NAME LAST INSERT ADDRESS |
| Slashed b (<i>b</i>) | Indicates a space (blank). The example indicates that a password can have a trailing blank. | WRITEPASS b |
| Brackets [] | Indicate optional selection of parameters. (Do not attempt to enter brackets or to stack parameters.) Brackets indicate one of the following situations. A single item enclosed by brackets indicates that the item is optional and can be omitted. The example indicates that you can optionally enter a program name. | COMPOSE [<i>program-name</i>] |
| | Stacked items enclosed by brackets represent optional alternatives, one of which can be selected. The example indicates that you can optionally enter NEXT, PRIOR, FIRST, or LAST. (NEXT is underlined to indicate that it is the default.) | <u>NEXT</u> PRIOR FIRST LAST |

| Convention | Description | Example |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Braces { } | <p>Indicate selection of parameters. (Do not attempt to enter braces or to stack parameters.) Braces surrounding stacked items represent alternatives, one of which you must select.</p> <p>The example indicates that you must enter FIRST, LAST, or a value for <i>begin</i>.</p> | <pre> { FIRST <i>begin</i> LAST } </pre> |
| <p><u>Underlining</u> (In syntax)</p> | <p>Indicates the default value supplied when you omit a parameter.</p> <p>The example indicates that if you do not specify ON, OFF, or a row and column destination, the system defaults to ON.</p> <p>Underlining also indicates an allowable abbreviation or the shortest truncation allowed.</p> <p>The example indicates that you can enter either PRO or PROTECTED.</p> | <pre> SCROLL [ON OFF [<i>row</i>][,<i>col</i>]] </pre> <p><u>PROTECTED</u></p> |
| Ellipsis points... | <p>Indicate that the preceding item can be repeated.</p> <p>The example indicates that you can enter (A), (A,B), (A,B,C), or some other argument in the same pattern.</p> | <pre>(<i>argument</i>, ...)</pre> |

| Convention | Description | Example |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| UPPERCASE | <p>Indicates MANTIS reserved words. You must enter them exactly as they appear.</p> <p>The example indicates that you must enter CONVERSE exactly as it appears.</p> | CONVERSE <i>name</i> |
| <i>Italics</i> | <p>Indicate variables you replace with a value, a column name, a file name, and so on.</p> <p>The example indicates that you can supply a name for the program.</p> | COMPOSE [<i>program-name</i>] |
| Punctuation marks | <p>Indicate required syntax that you must code exactly as presented.</p> <p>() parentheses . period , comma : colon ' ' single quotation marks</p> | $[\text{LET}]_p \begin{matrix} (i) \\ (i, j) \end{matrix} [\text{ROUNDED}(n)] = e1 [e2, e3\dots]$ |

MANTIS documentation series

MANTIS is an application development system designed to increase productivity in all areas of application development, from initial design through production and maintenance. MANTIS is part of AD/Advantage, which offers additional tools for application development. Listed below are the manuals offered with MANTIS in the IBM® mainframe environment, organized by task. You may not have all the manuals listed here.

- ◆ *MANTIS Installation, Startup, and Configuration, MVS/ESA, OS/390, P39-5018*
- ◆ *MANTIS Installation, Startup, and Configuration, VSE/ESA, P39-5019*
- ◆ *MANTIS Administration, OS/390, VSE/ESA, P39-5005*
- ◆ *MANTIS Messages and Codes, OS/390, VSE/ESA, P39-5004**
- ◆ *MANTIS Administration Tutorial, OS/390, VSE/ESA, P39-5027*
- ◆ *MANTIS XREF Administration, OS/390, VSE/ESA, P39-0012*

General use

- ◆ *MANTIS Quick Reference, OS/390, VSE/ESA, P39-5003*
- ◆ *MANTIS Facilities, OS/390, VSE/ESA, P39-5001*
- ◆ *MANTIS Language, OS/390, VSE/ESA, P39-5002*
- ◆ *MANTIS Program Design and Editing, OS/390, VSE/ESA, P39-5013*
- ◆ *MANTIS Messages and Codes, OS/390, VSE/ESA, P39-5004**
- ◆ *AD/Advantage Programming, P39-7001*
- ◆ *MANTIS DB2 Programming, OS/390, VSE/ESA, P39-5028*

- ◆ *MANTIS SUPRA SQL Programming, OS/390, VSE/ESA*, P39-3105
- ◆ *MANTIS XREF, OS/390, VSE/ESA, OpenVMS*, P39-0011
- ◆ *MANTIS Entity Transformers*, P39-0013
- ◆ *MANTIS DL/I Programming, OS/390, VSE/ESA*, P39-5008
- ◆ *MANTIS SAP Facility, OS/390, VSE/ESA*, P39-7000
- ◆ *MANTIS WebSphere MQ Programming*, P39-1365
- ◆ *MANTIS Application Development Tutorial, OS/390, VSE/ESA*, P39-5026



Manuals marked with an asterisk (*) are listed twice because you use them for both MASTER User tasks and general use tasks.

Educational material

AD/Advantage and MANTIS educational material is available from your regional Cincom education department.

1

Program Design Facility overview

The MANTIS Program Design Facility provides you with program design features that simplify program development and maintenance. The central feature of the Program Design Facility is its special development strategy called Component Engineering Facility (CEF). The Component Engineering Facility provides you with a powerful, flexible, and fast method for software design by allowing you to establish reusable “building blocks” of MANTIS code. These building blocks, called components, are tracked and reported automatically by the system to limit your maintenance effort, save time, and significantly improve accuracy.

When you code a COMPONENT statement in a source program to identify each component you plan to use in an application, CEF allows you to compose, or assemble, the source program into an executable program that contains expanded components to be altered and run. CEF can also perform the reverse process of decomposing, or splitting, an executable program into source and individual components. Again, the automatic and accurate record keeping of programs, components, and immediate updating of changes gives you system control over complex applications.

In addition to the CEF, the Program Design Facility provides you with system-controlled date and time stamps for program maintenance, extended program profile information, uppercase and lowercase support in the Full-Screen Editor, online help panels for explanations about general functions and specific fields, wildcard processing, special utilities, automated operations using a Trigger file, and the flexibility of both a menu-driven and command-driven design.

This chapter discusses the special features of the Program Design Facility, and provides an overview of the each option on the Program Design Facility Menu (see “[Accessing the Program Design Facility](#)” on page 25).

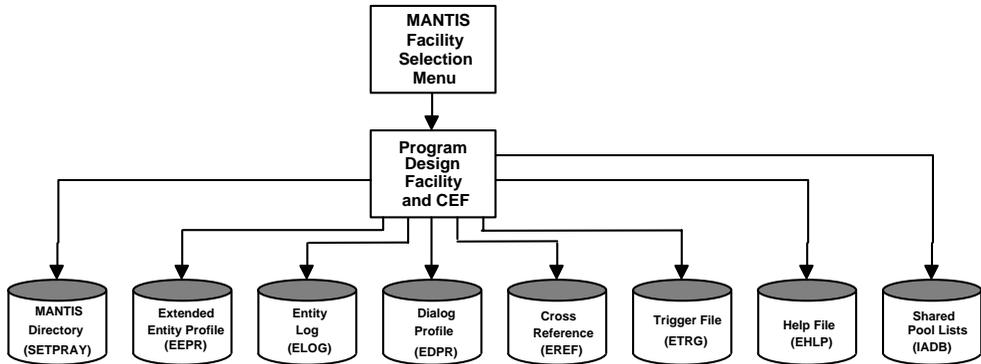
Features of the Program Design Facility

The Program Design Facility offers a new style of application design that uses several features to enhance your current version of MANTIS for programs and components. The following table shows an overview of these features:

| Feature | Description |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Change Control | Tracks date, time, version number, user library, terminal ID, and other information that helps to limit program and library maintenance. Accurate and automatic dates and times are available throughout the system to protect program integrity, for example, by showing the last date and time when a particular user issued an action on a specific program. |
| Online Help | Information panels are provided at your request for each action, command, panel field, and message. Help is available for the fields in which you supply information, and help is also offered for most display fields. |
| Online Reporting | Requested detail and summary reports generated at the conclusion of the Component Engineering (CEF) actions. In addition, status reports are available at the end of the Check, Bind, and Unbind options. Reports are displayed when CEF actions are issued online and printed when CEF actions are issued offline. |
| Trigger File | The Trigger file holds records of the actions you want deferred for later execution. Trigger records include the action you issued and the program name, which is the object of that action. You can view the Trigger file online and execute individual actions online or you can submit a batch job to execute these actions offline. The Trigger file is the central location in the system where all actions to be issued can be viewed. |
| Bill of Materials | Two online list panels built from the Cross Reference (CREF) action to: (1) show the components referred to in a source program (Bill of Materials List), and (2) show the source programs that use a component (Component Where Used List). |
| Addendum Processing | This option is a selective process you request to issue certain actions only on those programs that changed since the last time you issued that same action on them. Based on program change dates, addendum processing is an efficient way to save processing time and resources. |

General overview of the Program Design Facility

When using the Program Design Facility, the MANTIS Directory continues to maintain program definitions that are displayed on a Program Directory List. In addition to the MANTIS Directory, the system provides new, external files that are used internally to enhance program design functions and support the Component Engineering Facility (CEF). The following figure shows a general overview of the Program Design Facility:



When you work with the Program Design Facility, information is automatically written to, updated on, or deleted from, the external files shown above.

Accessing the Program Design Facility

To access the Program Design Facility, select the Design A Program option from the MANTIS Facility Selection Menu by typing the option number in the action field and pressing ENTER or by pressing the corresponding PF key. MANTIS returns the Program Design Facility menu as shown in the following screen illustration:

```

PRGMMENU01      Program Design Facility (ACCT)                YYYY/MM/DD HH:MM:SS
===>

Please select one of the menu items below.

   Program      Component Engineering  Bind Options      Utilities
--
  1. List       7. CEF Check                12. HPO Check     18. Audit Trail
  2. Edit       8.  " Compose                 13.  " Bind       19. Browse Audit Trail
  3. Profile    9.  " Decompose               14.  " Unbind     20.  " Prgm Profile
  4. Purge     10. CREF Programs             15. SQL Check     21. Trigger List
  5. Copy      11. Bill of Materials         16.  " Bind       22. SQL Maint
  6. Rename    17.  " Unbind

000:  READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F9=RETRIEVE  F12=CANCEL ...

```

From the Program Design Facility menu, you can select the options under the group headings Program, Component Engineering, Bind Options, and Utilities. In addition to selecting options from this menu, the system offers the flexibility of choosing other ways to start actions, including entering commands or pressing program function (PF) keys assigned to commands. For more information about how to start actions from the Program Design Facility menu and from other panels, see [“Using the Program Design Facility”](#) on page 31.

Program Design group headings

The four major group headings on the Program Design Facility menu are described in the following table, with a reference to more information:

| Group heading | Description | Chapter |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Program | Lets you choose options for creating and maintaining your MANTIS programs using the Full-Screen Editor. | “Program design” on page 143 and “Using the Full-Screen Editor” on page 165 |
| Component Engineering | This is the Component Engineering Facility (CEF) which provides options for using the methodology of Component Engineering to design structured applications with reusable components. | “Component Engineering Facility (CEF)” on page 297 |
| Bind Options | Offers the check, bind, and unbind actions for HPO (High-Performance Option) and SQL (Structured Query Language) programs in a DB2 or SQL/DS database environment. | “Bind Options” on page 365 |
| Utilities | Includes audit trail reporting, browsing individual program profile records and audit trail records, and management of the Trigger file. | “Utilities” on page 389 |

The following sections in this chapter give an overview of the options associated with each group heading.

Program Design options

The Program Design options allow you to access the Full-Screen Editor and use other actions related to creating and maintaining MANTIS programs. These options are described in the following table:

| Option | Description |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| List | Generates an interactive, online, and alphabetic list panel of the programs in your directory. You can issue commands directly from this list panel for specific programs. |
| Edit | Invokes a session with the MANTIS Full-Screen Editor where you can create and modify programs. |
| Profile | Displays program profile information including the audit attributes of date, time, version counts, user library, and user terminal. This action also lets you change program description, status, and password, and lets you set the selection (Sel) fields to indicate Addendum Processing. |
| Purge | Removes a program from your directory. |
| Copy | Copies the contents of a program from your library (or another library) to a program in your library, and allows you to change program name, description, and password. |
| Rename | Renames a program from your library to your library, and allows you to change program name, description, and password. |

Each Program Design option, with the exception of Edit, is discussed in more detail in “[Program design](#)” on page 143 of this manual. See “[Using the Full-Screen Editor](#)” on page 165 for a discussion of the Full-Screen Editor (FSE).

Component Engineering Facility (CEF) options

The Component Engineering Facility (CEF) is a series of options that allow you to use the methodology of Component Engineering to design structured applications with reusable components. The following table lists these options:

| Option name | Description |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CEF Check | Identifies program components and source code that changed since the last time you issued the Compose action. |
| CEF Compose | Assembles a source program and its COMPONENT statements into an executable program with expanded component code. |
| CEF Decompose | Disassembles a composed program back into individual components and updates libraries with the latest MANTIS source code and/or component code changes. |
| CREF Programs | Produces a cross reference (CREF) of the programs or components you designate and then builds the Bill of Materials List from this cross reference. |
| Bill of Materials | Displays the Bill of Materials List to show the components referred to in a source program, and displays the Component Where Used List to show the source programs that use a component. |

See “[Component Engineering Facility \(CEF\)](#)” on page 297 for a detailed discussion of the Component Engineering options.

Bind Options

Bind Options provide checking, binding, and unbinding for HPO (High-Performance Option) and SQL (Structured Query Language) programs in a DB2 or SQL/DS environment. These options are described in the following table:

| Option name | Description |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HPO Check | Checks an HPO-bound program to determine if any bound programs or components changed since the last time the program was bound. |
| HPO Bind | Creates a new bound version of an HPO-bound (or an unbound) program. |
| HPO Unbind | Replaces the bound version of an HPO-bound program with the unbound version. |
| SQL Check (DB2 or SQL/DS environment only) | <i>Static:</i> Determines if a program and its corresponding SQL support load module are consistent. <i>Extended Dynamic:</i> Determines if the program and its corresponding SQL/DS access module are consistent. |
| SQL Bind (DB2 or SQL/DS environment only) | <i>Static:</i> Places information about a program's SQL statements and their host variables into an internal file to create an SQL support module for static execution of the program. <i>Extended Dynamic:</i> Dynamically creates an SQL/DS access module for the program, saves information about SQL statements and host variables, and makes the program immediately executable at the end of the bind. |
| SQL Unbind (DB2 or SQL/DS environment only) | <i>Static:</i> Marks the program as not SQL-bound and deletes the SQL bind information from the internal file. <i>Extended Dynamic:</i> Marks the program as not SQL-bound and deletes the associated SQL/access module. |

Each of these Bind Options is discussed in more detail in “[Bind Options](#)” on page 365 of this manual.

Utilities options

Utilities options are audit trail reporting, browsing audit trail records and individual program profile records, managing the Trigger file, and performing SQL (Structured Query Language) maintenance. These options are shown in the following table:

| Option name | Description |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audit Trail | Displays the Audit Trail List that shows all activities performed on a program or component, with the last action you issued appearing at the top of the list. |
| Browse Audit Trail | Lets you browse through each log record on the external Entity Log to view Audit Trail information of the effects of program activity on your library. |
| Browse Program Profile | Lets you browse through each program in your directory to view individual profile information. |
| Trigger List | Displays a list panel of trigger records with the most recent record created appearing at the bottom of the list. You can execute, update, or delete trigger records from this list panel or execute these records in a batch job. |
| SQL Maint | (DB2 environment only.) Displays the SQL Bind Information panel and allows you to view and/or purge the information. |

Each Utilities Option, with the exception of SQL Maint, is discussed in more detail in “[Utilities](#)” on page 389 of this manual. For a discussion of the SQL Maint option, see “[Bind Options](#)” on page 365.

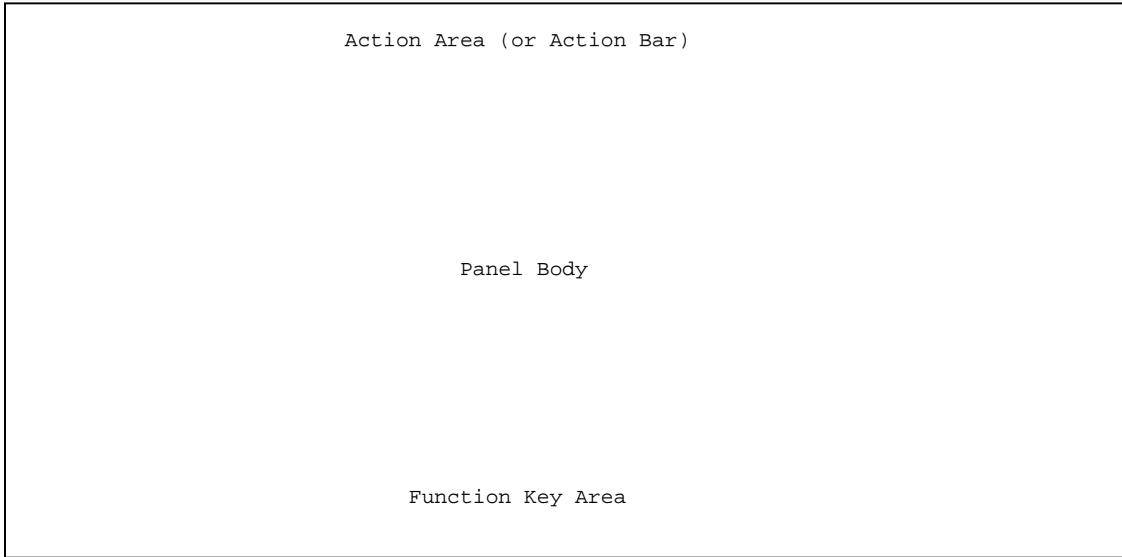
2

Using the Program Design Facility

The Program Design Facility consists of different types of panels from which you perform certain functions. Panel types include menu panels, list (display) panels, parameter entry panels, help panels and error condition panels. The Program Design Facility is a menu-driven and a command-driven system. This means you can move through the panels by making menu selections or by entering commands. This chapter describes the Program Design Facility panels and shows you how to navigate through the system.

Panel overview

Although there are different types of Program Design Facility panels, each panel has certain areas in common. These areas are the Action Area (contains the Action Bar), Panel Body, and Function Key Area. The following screen illustration demonstrates these areas:



The Panel Body contains fields that are specific to the panel and also contains the command line and the message line as shown in the following screen illustration. For an alphabetic list of panel fields and their detailed descriptions, see “[Field descriptions](#)” on page 427.

The Function Key Area contains the function key line or a short list of PF keys. Only the keys that can be displayed on a panel at one time are shown. To see all PF keys that pertain to the current panel, issue KEYSUPDATE or HELP KEYS.

```

PRGMLIST01          Program Directory List (ACCT)          YYYY/MM/DD HH:MM:SS
===>
Action      Name          Date          Time          Ver  FMT  Status
-----
CUST_BROWSE  YYYY/MM/DD  HH:MM:SS    5    C   ACTIVE
CUST_BROWSE@  YYYY/MM/DD  HH:MM:SS    3           ACTIVE

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

The Action Area provides the space on a list panel where the Action Bar is displayed. The Action Bar shows the action items you can issue from a list panel. The Action Bar is displayed if you invoke it by issuing ACTION. If the Action Bar is not displayed, the Action Area contains a display-only panel ID in the upper left corner (e.g., PRGMMENU01), a panel title in the center, and the current date and time in the upper right corner. The following screen illustration shows the Action Bar:

| Program | CEF | Bind | Exit | Help |
|---------|-------------|------|------|------|
| _____ | CUST_BROWSE | | | |
| _____ | CUST_DELETE | | | |
| _____ | CUST_INSERT | | | |
| _____ | CUST_MAINT | | | |
| _____ | CUST_MENU | | | |
| _____ | CUST_UPDATE | | | |

| Action | Name | Date | Time | Ver | FMT | Status |
|--------|-------------|------------|----------|-----|-----|--------|
| _____ | CUST_BROWSE | YYYY/MM/DD | HH:MM:SS | 5 | B | ACTIVE |
| _____ | CUST_DELETE | YYYY/MM/DD | HH:MM:SS | 3 | B | ACTIVE |
| _____ | CUST_INSERT | YYYY/MM/DD | HH:MM:SS | 7 | | ACTIVE |
| _____ | CUST_MAINT | YYYY/MM/DD | HH:MM:SS | 6 | | ACTIVE |
| _____ | CUST_MENU | YYYY/MM/DD | HH:MM:SS | 4 | | ACTIVE |
| _____ | CUST_UPDATE | YYYY/MM/DD | HH:MM:SS | 10 | | ACTIVE |

F03: MORE RECORDS FOLLOW
 ===>
 F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F8=FWD F9=RETRIEVE ...

The following sections describe the command line, message line, Function Key Area, the Action Bar, and information on using the Prompt to display function command and common dialog actions.

Command line

The command line appears in the body of panels preceded by the symbol (==>). It provides the place where you can enter commands, as shown in the following screen illustration where the EDIT command was typed:

```
PRGMLIST01          Program Directory List (ACCT)          YYYY/MM/DD HH:MM:SS
==> EDIT
Action      Name          Date          Time          Ver FMT  Status
-----
CUST_BROWSE  YYYY/MM/DD  HH:MM:SS     5  C   ACTIVE
CUST_BROWSE@  YYYY/MM/DD  HH:MM:SS     3             ACTIVE

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...
```

You can temporarily move the command line from the top of the panel to the bottom by entering COMMAND on the command line (or by pressing a PF key assigned to COMMAND). The command line will then be displayed below the message line and above the function key line as shown in the following screen illustration:

```

PRGMLIST01      Program Directory List (ACCT)
Action  Name      Date      Time      Ver  FMT  Status
-----
_____ CUST_UPDATE  YYYY/MM/DD HH:MM:SS  3  C   ACTIVE
_____ CUST_UPDATE@  YYYY/MM/DD HH:MM:SS  4             ACTIVE

===>
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

COMMAND (whether entered as a command or pressed as a PF key) toggles the command line from the top of your panel to the bottom. In both cases, using COMMAND to move the command line to the bottom (or top) of your panel is in effect only for the duration of the current action. This means that when you exit from the current panel, the command line will be reset to its original location on the panel.

To reset the command line to its original position on the panel, press the COMMAND PF key twice (pressing this key once temporarily removes the command line from the panel). If you don't have COMMAND assigned to a PF key, you can also issue EXIT (enter the EXIT command on the command line or press the EXIT PF key) to reset the position of the command line.

For the detailed descriptions of commands, see [“Program Design Facility commands”](#) on page 85. For a quick-reference list of these commands, see [“Editing commands”](#) on page 507. To view a list of all valid commands for the current panel, issue PROMPT.

Message line

The message line appears on panels at the bottom of the Panel Body, directly above the Function Key Area. This line displays messages, as shown in the following screen illustration with F03: MORE RECORDS FOLLOW:

```

PRGMLIST01      Program Directory List (ACCT)      YYYY/MM/DD HH:MM:SS
===>
Action   Name                               Date      Time      Ver FMT Status
-----
_____ CUST_INSERT                          YYYY/MM/DD HH:MM:SS   4  C  ACTIVE
_____ CUST_INSERT@                        YYYY/MM/DD HH:MM:SS  10             ACTIVE
_____ CUST_MAINT                          YYYY/MM/DD HH:MM:SS   7  C  ACTIVE
_____ CUST_MAINT@                        YYYY/MM/DD HH:MM:SS   7             ACTIVE

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

For online help for any message, enter the command HELP on the command line followed by the 3-character message code, for example, HELP F03 or HELP U31. You can also get this same help for a message by placing the cursor on the message line and issuing EXHELP.

For online help about the message line only, place the cursor on the message line and press HELP.

For explanations and corrective actions for error messages, refer to [MANTIS Messages and Codes, OS/390, VSE/ESA, P39-5004](#).

Function key area

Program Function (PF) keys allow you to start an action by pressing a single key associated with the action. The Program Design Facility displays a “short-list” (a single line) of function keys at the bottom of panels in the Function Key Area, below the message line. This function key line shows the PF key number and the action assigned to it.

The following screen illustration shows the function key line that is displayed at the bottom of the Program Directory List when the Program Design Facility is installed. Although your Master User can change the assignments of the keys on this line, this sample illustrates how a typical function key line appears.

| Program | CEF | Bind | Exit | Help |
|-----------------------------------------------------------------------|-------------|------------|----------|----------------|
| ----- | ----- | ----- | ----- | ----- |
| Action | Name | Date | Time | Ver FMT Status |
| ----- | ----- | ----- | ----- | ----- |
| _____ | CUST_BROWSE | YYYY/MM/DD | HH:MM:SS | 5 B ACTIVE |
| _____ | CUST_DELETE | YYYY/MM/DD | HH:MM:SS | 3 B ACTIVE |
| _____ | CUST_INSERT | YYYY/MM/DD | HH:MM:SS | 7 ACTIVE |
| _____ | CUST_MAINT | YYYY/MM/DD | HH:MM:SS | 6 ACTIVE |
| _____ | CUST_MENU | YYYY/MM/DD | HH:MM:SS | 4 ACTIVE |
| _____ | CUST_UPDATE | YYYY/MM/DD | HH:MM:SS | 10 ACTIVE |
| | | | | |
| ====> | | | | |
| F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F8=FWD F9=RETRIEVE ... | | | | |

After the last key shown, the ellipsis (...) indicates that there are more PF keys to view for this panel. Up to 24 keys are available for each panel. In addition to viewing the keys, you can also temporarily change the assignments for the duration of the current action. (See “Using PF keys” on page 53 for information on changing PF Key assignments.)

Action Bar

The Action Bar is displayed across the top of a list panel to provide the action items that you can select to use with the current list panel. (See “List panels” on page 67 for a discussion of list panels.) If the Action Bar does not appear, you can display it by entering ACTION on the command line.

The following screen illustration shows how the Action Bar looks across the top of the Program Directory List:

| _____ | Program | CEF | Bind | Exit | Help | ----- | | |
|---------|-------------|---------|-----------|------------|--------|-------------|----------|----------------|
| Action | Name | | | | | Date | Time | Ver FMT Status |
| ----- | | | | | | | | |
| _____ | CUST_BROWSE | | | | | YYYY/MM/DD | HH:MM:SS | 5 B ACTIVE |
| _____ | CUST_DELETE | | | | | YYYY/MM/DD | HH:MM:SS | 3 B ACTIVE |
| _____ | CUST_INSERT | | | | | YYYY/MM/DD | HH:MM:SS | 7 ACTIVE |
| _____ | CUST_MAINT | | | | | YYYY/MM/DD | HH:MM:SS | 6 ACTIVE |
| _____ | CUST_MENU | | | | | YYYY/MM/DD | HH:MM:SS | 4 ACTIVE |
| _____ | CUST_UPDATE | | | | | YYYY/MM/DD | HH:MM:SS | 10 ACTIVE |
| | | | | | | | | |
| ====> | | | | | | | | |
| F1=HELP | F2=EXHELP | F3=EXIT | F4=PROMPT | F5=REFRESH | F8=FWD | F9=RETRIEVE | ... | |

Action Bar pull-down

The Action Bar can be displayed for Program Design Facility list panels.

Generally, the action items shown on the Action Bar include Program Design, CEF (Component Engineering Facility), Bind Options, Exit (from CEF or MANTIS), and Help Panels. When you select one of these options from the Action Bar, the Action Bar pull-down, an extension of the Action Bar, is displayed, showing the specific options available for the action item you selected.

For example, if you select the CEF action item, the Action Bar pull-down will be displayed as shown in the following screen illustration:

```

_   Program  CEF  Bind  Exit  Help
-----
Action  N| 3  1  CEF Check          e   Time      Ver FMT Status
----- -| 2  CEF Compose          -----
C|      3  CEF Decompose      MM/DD HH:MM:SS  5  B  ACTIVE
C|      4  CREF Programs      MM/DD HH:MM:SS  3  B  ACTIVE
C|      5  Bill of Material    MM/DD HH:MM:SS  7      ACTIVE
C|                                MM/DD HH:MM:SS  6      ACTIVE
C| 000: READY                  MM/DD HH:MM:SS  4      ACTIVE
C| F12=CANCEL                  MM/DD HH:MM:SS  4      ACTIVE
C+-----+MM/DD HH:MM:SS  4      ACTIVE
CUST_MENU                      YYYY/MM/DD HH:MM:SS  4      ACTIVE

====>
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...
    
```

Neither the Action Bar nor the Action Bar pull-down starts an action automatically. To start an action, you must select a specific option from the Action Bar pull-down. (See [“Using the Action Bar”](#) on page 55 for information on starting an action from the Action Bar pull-down.)

Prompt

Prompt is an online list of the commands that are valid for the current panel. The list includes *function commands* (for specific actions like EDIT, COPY, COMPOSE, DECOMPOSE, CREF) and *common dialog actions* (e.g., EXIT, RETRIEVE, MENU, and LOGOFF which are valid on all Program Design Facility panels).

Prompt lets you select a single command or action from the displayed list and then executes the selected command or action when you exit from the Prompt.

Each panel has a Prompt list that is valid only for that panel. For example, some commands that work for the Compose action do not work for the Edit action. In contrast, common dialog actions (EXIT, RETRIEVE, MENU, LOGOFF) work on all Program Design Facility panels that display a command line, so the same common dialog actions appear on all Prompt lists.

Displaying the Prompt

To display the Prompt, type the PROMPT command on the command line. A list similar to the one shown in the following screen illustration will be displayed temporarily over the current panel:

```
PROMPTCMD                Prompt for Commands                YYYY/MM/DD HH:MM:SS
                                More:                +
Select one of the actions below by placing a "/" in the selection
field. Use Extended Help for more information.

Select      Action          Description          Status
-----
          BILL             Bill of Materials
          BIND             HPO Bind
          CEFCHECK        CEF Check
          CHECK           HPO Check
          COMPOSE         CEF Compose
          COPY            Copy
          CREF            CREF
          DECOMPOSE       CEF Decompose
          EDIT            Edit (s)
          FORWARD        Forward
          FWD            Forward
          L               Locate
          LEFT           Left
          PROFILE        Profile
          PURGE          Purge

PFC: COMMANDS FOR APPLICATION
F1=HELP  F2=EXHELP  F3=EXIT  F5=REFRESH  F7=BKWD  F8=FWD  F12=CANCEL
```

The list shown in the preceding screen illustration is the Prompt for the Program Directory List. Although you can enter any function command or common dialog action listed on the Prompt directly on the command line of the current panel, the Prompt is helpful because selecting from the Prompt list saves typing and ensures accuracy.

The Prompt displays a panel ID, title, and current date and time across the top of the panel.

The Select field () provides the single space for typing the selection indicator (/) to choose a command or action to be executed. The Action field lists the valid commands and actions from which you can select. The Description field is either a brief title or an abbreviation for the command or action. The Status field displays the selection indicator (/) after you press ENTER to indicate the Prompt action you have chosen.

To view a field-specific help panel for the Select field (_), position the cursor on any of the three spaces of the field and press HELP.

To view an extended help panel that describes a specific action, position the cursor on the action name (like BILL, BIND, etc.) and press EXHELP.

To view an extended help panel about Prompt, position the cursor in any area other than the action name, and press EXHELP.

To exit from Prompt and return to the current panel, press CANCEL.

To scroll forward through a multiple page Prompt, press FWD; to scroll backward, press BKWD. The “MORE - or +” heading indicates whether the Prompt has multiple pages as follows:

| If MORE indicator is: | You can: |
|-----------------------|-------------------------------------------------------------------|
| MORE | Single panel only; no other panels to view. |
| MORE - | Scroll backward to view previous Prompt panel. |
| MORE + | Scroll forward to view more Prompt panel. |
| MORE - + | Scroll backward or forward to view new and previous Prompt panel. |

Function commands and common dialog actions

The Prompt shows an alphabetic list of function commands and common dialog actions for the current action. A function command starts an action from a specific panel type. For example, the function commands COMPOSE, DECOMPOSE, and EDIT are available on the Program Design Facility menu and list panels, however, the function command RIGHT is available only on list panels.

In contrast, a common dialog action starts the same action on all panels. For example, the common dialog actions CANCEL, EXHELP, and EXIT work the same way on panels that display a command line.

Both the function command list and the common dialog action list are arranged alphabetically as items to select on the Prompt. The function commands appear first, followed by the common dialog actions as shown in the following screen illustration:

```
PROMPTCMD                      Prompt for Commands                      YYYY/MM/DD HH:MM:SS
                                More: +
Select one of the actions below by placing a "/" in the selection
field. Use Extended Help for more information.

Select      Action              Description                      Status
-----
          RENAME              Rename
          RIGHT              Right
          SQLBIND            SQL Bind
          SQLCHECK          SQL Check
          SQLUNBIND        SQL Unbind
          UNBIND            HPO Unbind
          *****          DIALOG *****
          CANCEL            CANCEL
          CLEAR            CLEAR
          COMMAND          CMD
          EXHELP          EXHELP
          EXIT            EXIT
          HELP            HELP
          KEYSUPDATE      KUPD
          LOGOFF          LOGOFF

PFC: COMMANDS FOR APPLICATION
F1=HELP  F2=EXHELP  F3=EXIT  F5=REFRESH  F7=BKWD  F8=FWD  F12=CANCEL
```

Note the ***** DIALOG ***** heading. Actions that follow this heading are the common dialog actions. The following table lists the common dialog actions for all panels:

| Common dialog action | Description |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| CANCEL | Allows you to back up in your session one panel at a time or to back up from the Action Bar pull-down to the Action Bar. |
| CLEAR | Supports the 3270 hardware feature as a common dialog action. CLEAR is not a command; if entered as a command, the current panel displays unchanged. |
| COMMAND | Toggles the command line from the top of your panel to the bottom (or from the bottom to the top). |
| EXHELP | Displays a help panel to explain an action. |
| EXIT | Terminates the current function and returns you to a higher level function. |
| HELP | Displays a help panel that explains a specific field, command, message, or displays the KEYSTEMP panel where you can alter PF key settings. |
| KEYSUPDATE | Displays a list of PF key settings that you can change for the duration of the current function. |
| LOGOFF | Exits from MANTIS. (If you are editing using the Full-Screen Editor, issuing LOGOFF will save your changes). |
| MENU | Returns you to the MANTIS Facility Selection Menu. (If you are editing using the Full-Screen Editor, issuing MENU will save your changes). |
| PROMPT | Shows an online list of the valid actions you can issue from the current panel. |
| REFRESH | Updates date and time on list panels, restores the Action fields on lists, and resets Entry and Function Options on parameter entry panels. |
| RETRIEVE | Redisplays the last seven commands, one at a time, that you issued from the command line of a panel. |

System navigation

The Program Design Facility is a menu-driven and a command-driven system. Consequently, you can move through the system in the following ways:

- ◆ **Make a menu selection.** Perform one of the following to make menu selections (for more information on making menu selections, see [“Making a menu selection”](#) on page 48):
 - Either on the command line or in the selection field, enter the number that corresponds to the desired action.
 - On the command line, enter the appropriate action command . For example, to access the Full-Screen Editor, you can enter the EDIT command on the command line of the Program Design Facility menu.
 - Make menu selections from the Action Bar (when displayed).
 - Enter an Action Bar mnemonic.
- ◆ **Enter a command.** Enter commands on menu panels, list panels, and parameter entry panels. (See [“Entering a command”](#) on page 50 for information on entering commands. See [“Program Design Facility commands”](#) on page 85 for command descriptions.)
- ◆ **Press a function (PF) key.** You can use PF keys on every panel. Display the PF key assignments for the current panel by entering the HELP KEYS command or the KEYSUPDATE command. For more information on using PF keys, see [“Using PF keys”](#) on page 53 .)
- ◆ **Use the Action Bar.** On each list panel, use the Action Bar to access the selectable action items. (For more information on using the Action Bar, see [“Action Bar”](#) on page 39.)
- ◆ **Select from the Prompt.** Prompt provides an online list of the valid commands for the current panel (for example, the Compose parameter entry panel). You can select a single action or command from the displayed list. (See [“Prompt”](#) on page 41 for information on displaying the Prompt. See [“Selecting from the Prompt”](#) on page 59 for information on selecting from a Prompt.)

Choose one of the methods shown above to start other Program Design Facility actions as shown for the Compose action. To be sure an action is valid for the current panel, issue PROMPT to display a list of valid actions.

Note that the expressions “issue an action,” “issue PROMPT,” “issue EXIT,” “issue CANCEL,” “issue COMPOSE,” and so on, appear throughout this manual. *Issue* is a generic term to represent any of the methods previously listed that *start* an action: making a menu selection, entering a command, pressing a PF key, or selecting from the Action Bar. The term *issue* in this manual means you can start the action the way you prefer, as listed in the previous five options.



In keeping with the documentation style for standard MANTIS commands, when an action is referred to in this manual as an option that appears on the Program Design Facility menu (e.g., “the Edit option”), the name of the option (Edit) appears with an initial capital letter only. Other examples in this manual include Prompt, Compose, Decompose, and Bind. This style shows that the action is a name like any other function, option, or panel name you have used with MANTIS before.

In contrast, when an action is referred to in this manual as a *command* (e.g., “Enter the DECOMPOSE command on the command line”), the name of the command (DECOMPOSE) appears with capital letters, like other MANTIS commands.

The following sections provide detailed discussions of how to use each method of starting actions in the Program Design Facility.

Making a menu selection

Menu selections are made by entering the option number corresponding to the action desired on the command line or selection field.

Alternatively, the action command can be entered on the command line (e.g., you can type the EDIT command on the command line of the Program Design Facility menu, shown in the following screen illustration, to access the Full-Screen Editor). You can also make menu selections from the Action Bar (when displayed) or by entering an Action Bar mnemonic.

For example, you can start the Compose option by entering its option number on the command line (==> 8) or in the Selection field (__) on the Program Design Facility menu as shown in the following screen illustration:

```

PRGMMENU01      Program Design Facility (ACCT)                YYYY/MM/DD HH:MM:SS
==> 8

Please select one of the menu items below.

   Program      Component Engineering  Bind Options      Utilities
8__ 1. List      7. CEF Check      12. HPO Check     18. Audit Trail
    2. Edit      8. " Compose      13. " Bind        19. Browse Audit Trail
    3. Profile   9. " Decompose    14. " Unbind      20. " Prgm Profile
    4. Purge     10. CREF Programs 15. SQL Check     21. Trigger List
    5. Copy      11. Bill of Materials 16. " Bind        22. SQL Maint
    6. Rename    17. " Unbind

000:  READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F9=RETRIEVE  F12=CANCEL ...

```

You can also enter the option number on the command line, a space, and a MANTIS program name, for example ==> 8 CUST_MAINT@.

You can make a menu selection from the Action Bar. The Action Bar can be displayed on list panels, and provides a list of the action items that you can select for the current list panel. When you select an action item from the Action Bar, the Action Bar pull-down is displayed, which is an extension of the Action Bar, showing the specific options available for the action item you selected.

For example, if you select the CEF item at the Program Directory List panel, the Action Bar pull-down would be displayed as shown in the following screen illustration. Option 3 (CEF Decompose) was selected by typing 3 in the 1-space Selection field on the Action Bar pull-down. When you press ENTER, the CEF Decompose action will be applied to the programs you selected from the list.

```

_      Program CEF Bind Exit Help
-----
Action  N| 3 1 CEF Check                e      Time      Ver FMT Status
----- -|-----
C      | 2 CEF Compose
C      | 3 CEF Decompose                MM/DD HH:MM:SS  5  B  ACTIVE
C      | 4 CREF Programs                MM/DD HH:MM:SS  3  B  ACTIVE
C      | 5 Bill of Material            MM/DD HH:MM:SS  7      ACTIVE
C      |                                MM/DD HH:MM:SS  6      ACTIVE
C      | 000: READY                    MM/DD HH:MM:SS  4      ACTIVE
C      | F12=CANCEL                    MM/DD HH:MM:SS  4      ACTIVE
C+-----+MM/DD HH:MM:SS  4      ACTIVE
/----- CUST_MENU                YYYY/MM/DD HH:MM:SS  4      ACTIVE

F03: MORE RECORDS FOLLOW
====>
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

In this example, note that the program CUST_MENU has been selected by typing the selection character (/) in the Action field for each program.

Entering a command

Some Program Design Facility commands move you forward to the next logical panel for an action; other commands move you backward to the previous panel. For example, entering an option number on a menu panel and pressing ENTER moves you forward in the system; entering the command CANCEL takes you back one step to the previous panel without saving changes or executing an action. Depending on your location in the system, entering the command EXIT takes you back to your previous panel or lets you exit from the system.

There are two places you can enter a command:

- ◆ On the command lines of menu panels and parameter entry panels
- ◆ In the action field of a list panel

For example, you can enter the COMPOSE command, a space, and a source program name on the command line of the Program Design Facility menu (or other panel where COMPOSE is a valid command) as shown in the following screen illustration:

```

PRGMMENU01      Program Design Facility (ACCT)                YYYY/MM/DD HH:MM:SS
===> COMPOSE CUST_BROWSE@

Please select one of the menu items below.

      Program      Component Engineering  Bind Options  Utilities
=====
 1. List          7. CEF Check          12. HPO Check  18. Audit Trail
 2. Edit          8. " Compose           13. " Bind    19. Browse Audit Trail
 3. Profile      9. " Decompose         14. " Unbind  20. " Prgm Profile
 4. Purge        10. CREF Programs      15. SQL Check 21. Trigger List
 5. Copy         11. Bill of Materials  16. " Bind    22. SQL Maint
 6. Rename       17. " Unbind

000:  READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F9=RETRIEVE  F12=CANCEL ...
    
```

When you press ENTER, the Compose action is started on the specified program. If you enter the command without a program name, the parameter entry panel associated with the command will be displayed to allow you to enter a program name and set processing options.

You can also enter a command on the command line of a list panel. For example, you can type the COMPOSE command on the command line of a list panel and tag one or multiple programs by typing a selection indicator (/) in their corresponding Action fields. In the following screen illustration, the COMPOSE command has been entered and the CUST_BROWSE@ program has been selected:

```

PRGMLIST01          Program Directory List (ACCT)          YYYY/MM/DD HH:MM:SS
===> COMPOSE
Action   Name                Date           Time           Ver FMT Status
-----
_____ CUST_BROWSE             YYYY/MM/DD HH:MM:SS   5 C  ACTIVE
/ _____ CUST_BROWSE@          YYYY/MM/DD HH:MM:SS   3   ACTIVE
_____ CUST_DELETE           YYYY/MM/DD HH:MM:SS   7 C  ACTIVE
_____ CUST_DELETE@        YYYY/MM/DD HH:MM:SS   6   ACTIVE
_____ CUST_INSERT          YYYY/MM/DD HH:MM:SS   4 C  ACTIVE
_____ CUST_INSERT@       YYYY/MM/DD HH:MM:SS  10   ACTIVE
_____ CUST_MAINT          YYYY/MM/DD HH:MM:SS   7 CB ACTIVE
_____ CUST_MAINT@       YYYY/MM/DD HH:MM:SS   7   ACTIVE

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

When you press ENTER, the program is processed. If you select multiple programs, they will be processed one at a time in sequence as they appear on the list.

You can enter a command in the action field of a list panel. For example, you can type the COMPOSE command in the Action field of a list panel for a specific source program. Use the equal sign (=) to indicate that you want the same command applied to a consecutive list of programs as shown in the following screen illustration. Note that you can stack commands on the same list panel.

```

_      Program  CEF  Bind  Exit  Help
-----
Action   Name                Date      Time      Ver  FMT  Status
-----
compose_ CUST_BROWSE@              YYYY/MM/DD HH:MM:SS   5    ACTIVE
=_____ CUST_DELETE@              YYYY/MM/DD HH:MM:SS   3    ACTIVE
=_____ CUST_INSERT@             YYYY/MM/DD HH:MM:SS   7    ACTIVE
edit_____ CUST_MAINT                YYYY/MM/DD HH:MM:SS   6    ACTIVE
=_____ CUST_MENU                YYYY/MM/DD HH:MM:SS   4    ACTIVE
_____ CUST_UPDATE            YYYY/MM/DD HH:MM:SS  10    ACTIVE

====>
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

When you press ENTER, multiple programs selected will be processed one at a time in sequence as they appear on the list.

Using PF keys

Program Function (PF) keys allow you to start an action by pressing a single key associated with the action. The PF key assignments are displayed in the Function Key Area at the bottom of the panel (see “Function key area” on page 38).

To view and change any of the 24 PF key settings for a specific panel, issue HELP KEYS or KEYSUPDATE. The KEYSTEMP panel is displayed, similar to the one shown in the following screen illustration:

```

KEYSTEMP          Program Directory List (ACCT)          YYYY/MM/DD HH:MM:SS

Below is a list of the PF keys available for your application.  You can
make temporary changes to these keys that will remain in effect for the duration of
the current function only.  To make permanent changes please
see your Master User.

PF Keys ( 1-12 )          PF Keys ( 13-24 )
-----
1  HELP                   13  HELP KEYS
2  EXHELP                 14
3  EXIT                   15  MENU
4  PROMPT                 16
5  REFRESH                17
6  EXECUTE                18
7                          19  LEFT
8  FWD                    20  RIGHT
9  RETRIEVE               21  COMMAND
10 ACTION                 22
11                        23
12 CANCEL                 24

F3=EXIT  F6=EXECUTE  F12=CANCEL

```

The KEYSTEMP panel lets you view all 24 keys for a given panel and temporarily change the assignments of these keys. Numbers cannot be changed but their assignments can be changed. Make changes by typing over a displayed assignment, adding a new assignment to an open assignment area, or clearing a displayed assignment by pressing the EOF key or the space bar. Any changes you make will be in effect only for the duration of the current action. This means that PF keys are reset to their original system default values when you exit from the current action.

The preceding screen illustration shows a list of the current PF key assignments for the Program Directory List. If you want to change F2=EXHELP to F2=ACTION in the above example, type ACTION over EXHELP. Press ENTER, EXIT, or EXECUTE to confirm your changes. The ENTER key keeps the KEYSTEMP panel displayed for more changes; the EXIT and EXECUTE keys save your changes and return the previous panel, which in this example is the Program Directory List. You will notice on this returned Program Directory List that F2=ACTION will appear on the function key line and will remain displayed until you issue EXIT from this list.



If you make changes to the assignments of PF keys and press CANCEL (even if you press ENTER), you will be returned to the previous panel but your changes will be lost. To save your PF key changes, press EXIT or EXECUTE.

For a list of the system default values for PF keys as they were installed, see “[PF keys at installation](#)” on page 517. Your Master User can permanently alter these assignments to comply with the standards of your environment. Even if PF key assignments have been altered, you can still consult the appendix for the generic description of the function key itself. This appendix also provides a place for you to enter your current, user-defined assignments for quick reference.

Using the Action Bar

When you select one of the action items from the Action Bar, the Action Bar pull-down (an extension of the Action Bar) is displayed, showing the specific options available for the action item you selected.

You can use the following methods to select an action item from the Action Bar:

- ◆ Position the cursor in the 1-space Selection field () to the left of the Action Bar. Enter the first letter (mnemonic) of the action item; for example, enter P for Program, C for CEF, and so forth. Press ENTER.
- ◆ Use the Tab key to skip to the first position of the action item you want. Press ENTER.
- ◆ Use the Tab key or right and left arrow keys to move the cursor anywhere in between the first position of an action item and its single trailing space. Press ENTER.

The following screen illustration demonstrates selecting the CEF action item by typing the first letter (mnemonic) in the selection field:

```

C      Program  CEF  Bind  Exit  Help
-----
Action  Name                Date      Time      Ver FMT Status
-----
_ CUST_BROWSE                YYYY/MM/DD HH:MM:SS  5  B  ACTIVE
_ CUST_DELETE                YYYY/MM/DD HH:MM:SS  3  B  ACTIVE
_ CUST_INSERT                YYYY/MM/DD HH:MM:SS  7  B  ACTIVE
_ CUST_MAINT                 YYYY/MM/DD HH:MM:SS  6  B  ACTIVE
_ CUST_MENU                  YYYY/MM/DD HH:MM:SS  4  B  ACTIVE
_ CUST_UPDATE                YYYY/MM/DD HH:MM:SS 10  B  ACTIVE

====>
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

When you select an action item from the Action Bar, the Action Bar pull-down, which is an extension of the Action Bar, is displayed, showing the specific options available for the action item you selected.

The following screen illustration shows how the Action Bar pull-down is displayed over the Program Directory List listing the options available for CEF. Notice that the Action Bar remains in its original position when the Action Bar pull-down is displayed.

```

_      Program CEF Bind Exit Help
-----
Action  N|_ 1 CEF Check          |e      Time      Ver FMT Status
----- -|-----
      C| 2 CEF Compose           |-----
      C| 3 CEF Decompose         |MM/DD HH:MM:SS 5 B ACTIVE
      C| 4 CREF Programs          |MM/DD HH:MM:SS 3 B ACTIVE
      C| 5 Bill of Material        |MM/DD HH:MM:SS 7 ACTIVE
      C|                          |MM/DD HH:MM:SS 6 ACTIVE
      C| 000: READY               |MM/DD HH:MM:SS 4 ACTIVE
      C| F12=CANCEL                |MM/DD HH:MM:SS 4 ACTIVE
      C+-----+MM/DD HH:MM:SS 4 ACTIVE
      C| CUST_MENU                |YYYY/MM/DD HH:MM:SS 4 ACTIVE
-----
===>
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F8=FWD F9=RETRIEVE ...

```

When you select an action item from the Action Bar, you can then select one or more programs displayed on the list panel on which the action will be executed. You can also do the reverse by selecting one or more programs first and then selecting an action item. You can select only one action item from the Action Bar at a time, but you can select multiple programs from the current list panel.

To start an option, for example the DECOMPOSE option, from the Action Bar pull-down, enter the number of the option (3) in the 1-space selection field, as shown below in the following screen illustration and press ENTER:

```

_   Program   CEF   Bind   Exit   Help
-----
Action  N | 3 | 1 | CEF Check          | e   Time   Ver  FMT  Status
----- - | - | - | -----           | --- -- --  ---  ---
C       C |   | 2 | CEF Compose        |     |         |    |    |
C       C |   | 3 | CEF Decompose     | MM/DD HH:MM:SS | 5  B  ACTIVE
C       C |   | 4 | CREF Programs     | MM/DD HH:MM:SS | 3  B  ACTIVE
C       C |   | 5 | Bill of Material  | MM/DD HH:MM:SS | 7    ACTIVE
C       C |   |   |                   | MM/DD HH:MM:SS | 6    ACTIVE
C       C | 000: READY       | MM/DD HH:MM:SS | 4    ACTIVE
C       C | F12=CANCEL        | MM/DD HH:MM:SS | 4    ACTIVE
C+-----+MM/DD HH:MM:SS | 4    ACTIVE
/_____ CUST_MENU          | YYYY/MM/DD HH:MM:SS | 4    ACTIVE
_____ CUST_SELECT       | YYYY/MM/DD HH:MM:SS | 2    ACTIVE
/_____ CUST_UPDATE       | YYYY/MM/DD HH:MM:SS | 3    ACTIVE

===>
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

When you press ENTER, the CEF Decompose action will be applied to the programs you selected from the list. In this example, note that programs CUST_MENU and CUST_UPDATE have been selected by typing the selection character (/) in the Action field for each program.

When multiple programs are selected, as in this example, the action will be performed on those programs in sequential order as they appear on the currently displayed list panel. For example, when you exit from the action for the first selected program (CUST_MENU in the example), the same action will be performed on the second selected program on the list (CUST_UPDATE in the example), and so forth for other programs that can follow.

You can select one or more programs from a list panel, but select from one page of the list at a time. For example, if you select programs from the first page, scroll forward, and then select more programs from the second page, the list panel will be automatically refreshed (as if you issued REFRESH) and the selections made on the first page will be lost.

To remove the Action Bar pull-down, issue CANCEL. The original list panel will be redisplayed with the Action Bar in place.

If you select an Action Bar pull-down option, but do not select a program from the list panel, a parameter entry panel will be displayed which is associated with the option (e.g., the COMPOSE Program Entry panel for the CEF Compose action). This parameter entry panel lets you specify a program name (or names) and allows you to set the Entry and Function Options that determine how the action will be processed.

Selecting from the Prompt

Prompt is an online list of the commands that are valid for the current panel. The list includes *function commands* (for specific actions like EDIT, COPY, COMPOSE, DECOMPOSE, CREF) and *common dialog actions* (e.g., EXIT, RETRIEVE, MENU, and LOGOFF which are valid on all Program Design Facility panels). You can select a single command or action from the displayed list and then execute the selected command or action when you exit from the Prompt.

To select from the Prompt, type the selection indicator (/) in the Select field of one item displayed on the Prompt and press ENTER. (You can only select one item at a time from the Prompt). The selection indicator (/) will then display in the Status field and the action you have chosen will be shown at the top of the Prompt as indicated in the following screen illustration:

```
PROMPTCMD                Prompt for Commands                YYYY/MM/DD HH:MM:SS
                                More:                +
Select one of the actions below by placing a "/" in the selection
field. Use Extended Help for more information.
COMPOSE
Select      Action      Description      Status
-----
-          BILL          Bill of Materials
-          BIND          HPO Bind
-          CEFCHECK      CEF Check
-          CHECK          HPO Check
-          COMPOSE        CEF Compose          /
-          COPY          Copy
-          CREF          Cref Programs
-          DECOMPOSE      CEF Decompose
-          EDIT          Edit (s)
-          FORWARD       Forward
-          FWD           Forward
-          L             Locate
-          LEFT          Left
-          PROFILE        Profile
-          PURGE         Purge
PFC: COMMANDS FOR APPLICATION
F1=HELP  F2=EXHELP  F3=EXIT  F5=REFRESH  F7=BKWD  F8=FWD  F12=CANCEL
```

General considerations

- ◆ When you exit from the Prompt by pressing EXIT, the action you selected is executed (COMPOSE in this example).
- ◆ In addition, you can select an action from the Prompt with the selection character (/) and then immediately press EXIT (to bypass pressing ENTER first).
- ◆ If you select one action, then immediately select another action, the second selection replaces the first selection.
- ◆ To bypass a selection and return to the current panel, press CANCEL. To refresh the Prompt and keep the Prompt displayed, press REFRESH or type D (delete) in the Select field of a selected action and press ENTER.

Prompt subsets

A Prompt subset is a partial prompt list that results when you search the Prompt for specific functions and actions using the wildcard characters “*” and “?”. These wildcard characters help you meet search criteria as described:

- “*” The asterisk represents an indefinite number of characters in a generic pattern. For example, *F* locates all Prompt commands and actions that contain an F in any position of their Action Name. To search for a B in the first position of all commands and actions, type B*.
- “?” The question mark character represents a single character in a generic pattern. For example, ?O* retrieves all Prompt commands or actions that contain an O in the second position.

To search the Prompt and display a subset, type a generic pattern (using the wildcard characters “*” and “?”) on the dashed line (below the Action heading) and press ENTER.

The following screen illustration shows the format and position of the generic pattern *CHECK that selects and displays all Prompt commands and actions that contain “check” in any position of the name:

| PROMPTCMD | Prompt for Commands | YYYY/MM/DD HH:MM:SS | |
|------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|--------|
| | | More: + | |
| Select one of the actions below by placing a "/" in the selection field. Use Extended Help for more information. | | | |
| Select | Action | Description | Status |
| ----- | *CHECK----- | ----- | ----- |
| | BILL | Bill of Materials | |
| | BIND | HPO Bind | |
| | CEFCHECK | CEF Check | |
| | CHECK | HPO Check | |
| | COMPOSE | CEF Compose | |
| | COPY | Copy | |
| | CREF | Cref Programs | |
| | DECOMPOSE | CEF Decompose | |
| | EDIT | Edit (s) | |
| | FORWARD | Forward | |
| | FWD | Forward | |
| | L | Locate | |
| | LEFT | Left | |
| | PROFILE | Profile | |
| | PURGE | Purge | |
| | PROFILE | Profile | |
| PFC: COMMANDS FOR APPLICATION | | | |
| F1=HELP F2=EXHELP F3=EXIT F5=REFRESH F7=BKWD F8=FWD F12=CANCEL | | | |

When you press ENTER, the Prompt items that match the selection criteria are displayed as shown in the following screen illustration:

```
PROMPTCMD                Prompt for Commands                YYYY/MM/DD HH:MM:SS
                               More:

Select one of the actions below by placing a "/" in the selection
field. Use Extended Help for more information.

Select      Action          Description          Status
-----
___         *CHECK-----
___         CEFCHECK       CEF Check
___         CHECK          HPO Bind
___         SQLCHECK       SQL Check
___         *****       DIALOG *****

PFS: SUBSET OF COMMANDS
```

Note that the generic pattern *CHECK remains displayed as you entered it under the Action heading. In this example, only the function commands CEFCHECK, CHECK, SQLCHECK met the selection criteria. No common dialog actions were found with “check” in the name. If common dialog actions are found in a search, they will be listed directly below the DIALOG heading line.

If you do not know the exact name of a command or action, you can search alphabetically by entering a generic pattern with the wildcard and the first character of the command or action. For example, if you enter C* under the Action field, the Prompt subset will be displayed as shown in the following screen illustration:

```
PROMPTCMD                Prompt for Commands                YYYY/MM/DD HH:MM:SS
                                                                More:

Select one of the actions below by placing a "/" in the selection
field.  Use Extended Help for more information.

Select   Action           Description           Status
-----   -
          C*-----
          CEFCHECK        CEF Check
          CHECK           HPO Bind
          COMPOSE         CEF Compose
          COPY            Copy
          CREF            Cref Programs
          *****        DIALOG *****
          CANCEL          CANCEL
          CLEAR           CLEAR
          COMMAND         CMD

PFS: SUBSET OF COMMANDS
```

Note the common dialog actions that appear under the DIALOG heading line. To return to the full Prompt list from a Prompt subset, press REFRESH.

Panel types

The Program Design Facility contains five basic types of panels; menu panels, list panels, parameter entry panels, help panels and error condition panels. The following table provides a brief description and section reference for each panel type discussed in this section:

| Panel type | Description | Section |
|-----------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Menu Panel | A panel which is the main menu (Program Design Facility) to provide a list of options to be selected. | "Menu panels" on page 65 |
| List Panel | A panel which displays a list of items (programs or records) from which an action can be issued on one or more items. | "List panels" on page 67 |
| Parameter Entry Panel | A panel which starts an action by letting you supply a program name (or names) and setting Entry and Function Options. | "Parameter entry panels" on page 73 |
| Help Panel | An information panel which explains an action, specific field, command, or message. | "Help panels" on page 79 |
| Error Condition Panel | A panel that shows an error code, message, description, and program. | "Error Condition Panels" on page 84 |

Menu panels

The Program Design Facility menu is the entry point to enhanced program design options and the functions of the Component Engineering Facility (CEF). This menu panel provides a list of options from which you can select one at a time to execute. These options are arranged under the four major group headings of the system: Program Design, Component Engineering Facility (CEF), Bind Options, and Utilities. A sample of the Program Design Facility menu is shown in the following screen illustration:

```

PRGMMENU01      Program Design Facility (ACCT)      YYYY/MM/DD HH:MM:SS
===>

Please select one of the menu items below.

      Program      Component Engineering      Bind Options      Utilities
--  1. List        7. CEF Check          12. HPO Check     18. Audit Trail
    2. Edit        8.  " Compose         13.  " Bind       19. Browse Audit Trail
    3. Profile     9.  " Decompose       14.  " Unbind     20.  " Prgm Profile
    4. Purge       10. CREF Programs     15. SQL Check     21. Trigger List
    5. Copy        11. Bill of Materials 16.  " Bind       22. SQL Maint
    6. Rename      17.  " Unbind

000:  READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F9=RETRIEVE  F12=CANCEL ...

```

To select from the menu panel, do one of the following:

- ◆ Enter an option number in the Selection field (___).
- ◆ Enter an option number (or equivalent command) on the command line. For example, enter 8 or COMPOSE.
- ◆ Enter an option number, a space, and a program name on the command line. For example, enter 2 CUST_INSERT@.
- ◆ Enter a command, a space, and a program name on the command line. For example, enter EDIT CUST_INSERT@.
- ◆ Enter a command, a space, and a wildcard selection criteria. For example, enter COMPOSE CUST*@.

To view available commands for a panel, issue PROMPT. See “[Selecting from the Prompt](#)” on page 59 for information on selecting from the Prompt. For an alphabetic list of commands, definitions, syntax, and usage guidelines, see “[Program Design Facility commands](#)” on page 85.

To return to the MANTIS Facility Selection Menu, issue MENU, CANCEL, or EXIT. To exit from MANTIS, issue LOGOFF.

List panels

List panels display an arrangement of items, like the programs shown on the Program Directory List. From a list, you can select one or more items and specify one or more actions to be performed on those items. The following list panels are used with the Program Design Facility:

| Panel title | Description |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Program Directory List | An online display of the programs in your directory shown in alphabetic order by name. Extended profile information about each program is also provided on this list panel. This includes description, date of change, time of change, version number, bind information, and status. |
| Bill of Materials List | An online list panel built from the Cross Reference (CREF) action to show the components referred to in a source program. The second part of this list panel (Component Where Used List) shows the source programs that use a component. |
| Audit Trail List | An online list that shows the effect of actions on a program with the most recent program activity shown at the top of the list. |
| Trigger File List | A list of the trigger records you created with most recent record shown at the bottom of the list. |

List panels allow you to enter commands in the Action field for a specific program or record displayed on the list. For a display of the valid actions for the current list, issue Prompt.

In the case of the Trigger file, in addition to managing trigger records with the Action field, you can also submit a batch job to execute all trigger records. For information about this batch job and the Trigger file, see [“Component Engineering Facility \(CEF\)”](#) on page 297.

A sample of the Program Directory List is shown in the following screen illustration. The commands EDIT and COPY were typed in the Action fields for specific programs. The equal sign (=) was typed to repeat the command typed directly above it. If you supply a command in the Action field, you can use the (=) to select multiple items from the list panel to be processed one at a time in the order they appear on the list.

Some examples of program names in this manual show the at sign (@) appended to the program name, like CUST_BROWSE@ and CUST_DELETE@. The at sign indicates a Component-Engineered source program. Source programs and the Component Engineering methodology are discussed in “Program design” on page 143.

```

PRGMLIST01          Program Directory List (ACCT)                90/08/13 11:28:05
====>
Action   Name                                     Date           Time           Ver FMT Status
-----
EDIT ___ CUST_BROWSE                                     YYYY/MM/DD    HH:MM:SS       5  C   ACTIVE
= _____ CUST_BROWSE@                               YYYY/MM/DD    HH:MM:SS       3                ACTIVE
_____ CUST_DELETE                               YYYY/MM/DD    HH:MM:SS       7  C   ACTIVE
COPY ___ CUST_DELETE@                             YYYY/MM/DD    HH:MM:SS       6                ACTIVE
_____ CUST_INSERT                               YYYY/MM/DD    HH:MM:SS       4  C   ACTIVE
= _____ CUST_INSERT@                           YYYY/MM/DD    HH:MM:SS      10                ACTIVE
_____ CUST_MAINT                                YYYY/MM/DD    HH:MM:SS       7  CB  ACTIVE
= _____ CUST_MAINT@                             YYYY/MM/DD    HH:MM:SS       7                ACTIVE

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...
    
```

In the above example, when ENTER is pressed, each action occurs in the sequence as it appears on the list panel. The EDIT command loads CUST_BROWSE into the Full-Screen Editor first. When you exit from the edit session, CUST_BROWSE@ will then be loaded and displayed for editing.

After you complete the edit session with CUST_BROWSE@, the COPY action will display a copy parameter entry panel where you can specify the target program name and processing options for the first program where the COPY command is indicated, CUST_DELETE@. When you exit from that parameter entry panel, a new copy parameter entry panel is displayed for CUST_INSERT@. When you exit from that parameter entry panel, a copy parameter panel for CUST_MAINT@ is displayed. Actions are started in the order of their appearance on the list panel.

General considerations

- ◆ If you issue EXIT from a panel (for example, from a parameter entry panel), any unsubmitted actions in the series of programs are terminated, and the Program Directory List is redisplayed.
- ◆ To terminate a series of actions while you are in the Full-Screen Editor, perform one of the following:
 - Enter the MENU command. Changes are saved and the MANTIS Facility Selection Menu is returned.
 - Enter the LOGOFF command. Changes are saved and you are logged off MANTIS.
 - Enter the QUIT command. Changes are not saved for the current program being edited, but any changes made to previous programs in a series are saved. The Program Directory List is redisplayed.

To make a single selection from a list panel:

- ◆ Type a command in the Action field next to a specific item and press ENTER.
- ◆ Type the selection character (/) in the Action field next to a specific item and issue an action.

To make multiple selections from a list panel, do one of the following:

- ◆ Type the selection character (/) in the Action field next to multiple items and issue an action.
- ◆ Type a command in an Action field for a specific item. Repeat the command in other Action fields by typing an equal sign (=). Be sure the equal sign (=) is entered in Action fields below the Action field where you typed the command. (This method is illustrated in “Function key area” on page 38.) Press ENTER. In addition, you can enter multiple commands in various Action fields (like EDIT and COPY shown in “Function key area” on page 38). Only one command in an Action field is permitted. Multiple selections are processed in the order they appear on the list panel.

You can select one or more programs from a list panel, but select from one page of the list at a time. For example, if you select programs from the first page, scroll forward, and then select more programs from the second page, the list panel will be automatically refreshed (as if you issued REFRESH) and the selections made on the first page will be lost.

To view the commands that are valid for the current list panel, issue PROMPT. For information on displaying Prompt, see “Prompt” on page 41. For information on selecting an action from Prompt see “Selecting from the Prompt” on page 59.

When you redisplay a list panel after the commands are *executed*, the Action fields contain an asterisk (*) immediately preceding the command as shown in the following screen illustration:

```

PRGMLIST01          Program Directory List (ACCT)          YYYY/MM/DD HH:MM:SS
===>
Action      Name                                     Date      Time      Ver FMT Status
-----
*EDIT _    CUST_BROWSE                                     YYYY/MM/DD HH:MM:SS    5 C   EDITED
*EDIT _    CUST_BROWSE@                                  YYYY/MM/DD HH:MM:SS    3     EDITED
_          CUST_DELETE                                   YYYY/MM/DD HH:MM:SS    7 C   ACTIVE
*COPY _    CUST_DELETE@                                  YYYY/MM/DD HH:MM:SS    6     COPIED
_          CUST_INSERT                                   YYYY/MM/DD HH:MM:SS    4 C   ACTIVE
*COPY _    CUST_INSERT@                                  YYYY/MM/DD HH:MM:SS   10    COPIED
_          CUST_MAINT                                    YYYY/MM/DD HH:MM:SS    7 CB  ACTIVE
*COPY _    CUST_MAINT@                                  YYYY/MM/DD HH:MM:SS    7     COPIED

```

```
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F8=FWD F9=RETRIEVE ...
```

Note that the Status field on this redisplayed list shows the completed action, such as EDITED and COPIED. To execute one of these commands again, use the space bar to clear the asterisk (*) and then press ENTER.

General considerations

- ◆ If you are processing a series of program names, and you break out of the series before all programs have processed, the asterisk (*) noted in the previous panel will appear before all commands—even those that did not execute. To verify that a command executed, see the Status field. Note the status of executed commands (EDITED, COPIED) in the previous panel. If the action did not execute, the Status field will show the current status (as it appears on the UPDATE Program Profile panel).
- ◆ If the actions change the order or appearance of the items on the list panel (e.g., Purge because it deletes programs, Compose because it changes date and time, or Copy action because it creates a new program), issue the REFRESH command to redisplay a current, updated list panel.
- ◆ To move forward through the list, issue FORWARD (or FWD).
- ◆ To reposition the list at a specific location, type a reposition value (the name of the program you want to locate, or the partial name, such as CUST_BROWSE (or CUST) over the current program name at the top of the list (CUST_BROWSE in the example). Delete any remaining characters from the current name and press ENTER. The list will redisplay beginning with the program that corresponds to your value, or the next higher program name, if your value is not found on the list.
- ◆ You can also enter the command LOCATE (or L) on the command line of a list panel followed by a program name. For example, ===> L CUST_MAINT repositions the list at this program name, or the next name on the list if the name you entered cannot be found.
- ◆ Entering LOCATE on the command line without a program name (e.g., ===> L) is a quick way to reposition the list panel at the beginning. In addition, you can reposition the list to a specific program by entering L in the Action field next to that program name.
- ◆ To exit from the list panel and return to the Program Design Facility menu, issue CANCEL or EXIT. To display the MANTIS Facility Selection Menu, issue MENU. To exit from MANTIS, issue LOGOFF.

Parameter entry panels

A parameter entry panel starts a Program Design Facility action. In addition, parameter entry panels let you supply library name (when the action allows you to access other user libraries), password (when the action allows you to supply it), one or more program names, and processing options (known as Entry and Function Options). Parameter entry panels also display the results of processing by showing processing statistics.

Generally, parameter entry panels are displayed when you select an option from the Program Design Facility menu or a list panel without supplying a program name. However, for the Copy and Rename actions, even if you supply a program name, parameter entry panels will be displayed, showing the “from” name you supplied and allowing you to supply the “to” name.

To illustrate the use of a parameter entry panel, if you select Compose from the Program Design Facility menu and do not provide a source program name, the parameter entry panel for the Compose action (shown under “**Action Bar pull-down**” on page 40) will be displayed. This panel lets you specify a single program name, a range of program names, or a generic pattern of program names to be composed. In addition, the panel allows you to alter the settings of Entry and Function Options that will take place during the Compose. When the Compose ends, statistics about the execution of the Compose action are displayed for viewing.

The following screen illustration shows a sample of the parameter entry panel for the Compose action:

```
PRGMENT01A      COMPOSE Program Entry      YYYY/MM/DD HH:MM:SS
===>
From
  Library . . . ACCT
  Name . . . .
  Description .

Thru
  Name . . . .

Entry Options      Function Options      Process Statistics
Immediate? . . . . Y      Component stmt? . . D      Processed . .
Confirmation? . . N      Force compose? . . D      Skipped . . .
Addendum? . . . . N      Display summary? . . Y      Errors . . . .

000: READY
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F6=EXECUTE F7=CONFIRM ...
```

Most fields on one parameter entry panel are common to other parameter entry panels. The following table lists these fields:

| Parameter entry field | Description |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (From) Library, Name, Description | Identifies the “from” program designated for the action. |
| (Thru) Name | Identifies the ending program name in a range of program names designated for the action (not Copy and Rename). |
| (To) Library, Name, Password, Description | Identifies the target program for the Copy action only. |
| (To) Name, Password, Description | Identifies the target program for the Rename action only. |
| Entry and Function Options | Lists certain options that let you determine how an action will be executed. Entry and Function Options are set to system default values at installation; however, the Master User can customize these setting for each user. You can alter these options for the current action. When you exit from the parameter entry panel, the settings will be restored to their system default values. |
| Process Statistics | <p>The Processed, Replaced, Skipped, and Errors fields show the results of an action by incrementing each time an action is issued for a program:</p> <ul style="list-style-type: none"> ◆ Processed. Incremented each time a program is processed successfully by a specific action. ◆ Replaced. (Copy and Replace actions only). Incremented each time a program is found in your library that has the same name as the target program designated for Copy or Rename. ◆ Skipped. Incremented each time an action is bypassed for a specific program (by issuing SKIP), or when a designated program has a status other than the value ACTIVE. ◆ Errors. Incremented each time the system encounters a processing error, such as a program that does not exist in your library, or the attempt to issue Compose on a source program that contains no COMPONENT statements. |

Generally, Function Options are unique on parameter entry panels. The following table gives an overview of these options:

| Action | Parameter entry panel | Function option(s) |
|------------------------|-------------------------|-----------------------------------------------------------|
| Edit | EDIT Program Entry | Uppercase? Nulls on? Indent on? Scroll? (P H C) |
| Profile | PROFILE Program Entry | None |
| Purge | PURGE Program Entry | None |
| Copy | COPY Program Entry | Replace if found? |
| Rename | RENAME Program Entry | Replace if found? |
| CEF Check | CEFCHECK Program Entry | Create trigger? Display detail? Display summary? |
| Compose | COMPOSE Program Entry | Component stmt? Force compose? Display summary? |
| Decompose | DECOMPOSE Program Entry | Decompose all? Display detail? Display summary? |
| CREF (Cross Reference) | CREF Program Entry | Display summary? |
| HPO Check | CHECK Program Entry | Display status? |
| HPO Bind | BIND Program Entry | Display status? |
| HPO Unbind | UNBIND Program Entry | Display status? |
| SQL Check | SQLCHECK Program Entry | Display status? |
| SQL Bind | SQLBIND Program Entry | Display status? |
| SQL Unbind | SQLUNBIND Program Entry | Display status? |

For the detailed descriptions of Function Options and other panel fields, see “[Field descriptions](#)” on page 427. Function Options are also described with their individual parameter entry panels.

To start an action from a parameter entry panel, follow these steps:

1. Complete the From and Thru (or From and To) fields to designate a single program, a range of program names, or a generic pattern of program names. (For Copy or Rename, a range of names is not accepted).
2. Set the Entry Options and Function Options or leave them at the displayed system default values.
3. Press ENTER for a preliminary edit of the names and options you typed. The message “U00: OK TO EXECUTE” will be displayed. If you want to change any names or options at this point, you can still do so.
4. Issue EXECUTE to start the action for the designated program(s). (You can bypass the U00 message by issuing EXECUTE directly.)

To return to the previous panel, issue CANCEL or EXIT. To display the MANTIS Facility Selection Menu, issue MENU; to exit from MANTIS, issue LOGOFF.

Parameter entry panels display a message that shows the results of the action you issued. For example, the PROCESSED THRU message in the following screen illustration shows that Compose was issued on each program in the generic pattern CUST*@:

```

PRGMENT01A      COMPOSE Program Entry      YYYY/MM/DD HH:MM:SS
===>
From
  Library . . . ACCT
  Name . . . . CUST*@
  Description .

Thru
  Name . . . .

Entry Options      Function Options      Process Statistics
Immediate? . . . . Y      Component stmt? . . D      Processed . .      12
Confirmation? . . . Y      Force compose? . . D      Skipped . . .
Addendum: . . . . N      Display summary? . . Y      Errors . . . .

PROCESSED CUST_BROWSE@      THRU CUST_UPDATE@

000: READY
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F6=EXECUTE F7=CONFIRM ...

```

The space in which the variable program name appears in the PROCESSED THRU message is 31 characters. Program names larger than this will be truncated.

Help panels

You can access help panels for information about actions, fields, messages, and commands used in the Program Design Facility. When a help panel is displayed, it is temporarily placed over the current panel. When you are finished reviewing a help panel, return to the current panel by pressing EXIT or CANCEL. Displaying a help panel will not change the current panel.

The following screen illustration is a help panel displayed by entering HELP BROWSE. The panel describes the browse option for the program profile.

```
HELPP000          Help for:  Browse Program Profile          Page 1 of 2
The Browse Program Profile utility lets you scroll through extended profile
information for individual programs in your directory.

TO SELECT BROWSE PROGRAM PROFILE, USE ONE OF THESE METHODS:

  o Enter the option number for the Browse Program Profile in the
    Selection field ( _) or on the Command Line (==>) of the Program
    Design Facility menu.

  o Enter the BROWSE command on the Command Line of the Program Design
    Facility menu.

F1=HELP  F3=EXIT  F7=BKWD  F8=FWD  F9=KEYS HELP  F12=CANCEL
```

The example above shows the first page of a 2-page help panel. Other topics (like Compose, Decompose, or CEF Check) could contain several panels. The “Page X of Y” indicator in the upper right corner lets you know how many help panels are available. Use the forward and backward scroll key to browse multiple help panels.

Several types of help panels are provided to assist you with general topics (like the Compose action) or specific topics (like the “Immediate?” Entry Option). The following table presents the type of help panels in the Program Design Facility. More detailed information follows the table.

| Type of help | What it does | How you access it |
|--------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field Help | Describes a panel field and entry requirements. | Position the cursor on any panel field that contains variable data (not headers) and press the HELP key (or enter the HELP command). |
| Extended help | Explains the current action (COMPOSE, EDIT, COPY, RENAME, and others) | Press the EXHELP key or enter the EXHELP command. You can also type HELP, space, and an option number (from the Program Design Facility menu only). |
| Message help | Describes a message by providing the explanation and corrective action. | Type HELP, space, and the 3-character message code on the command line and press ENTER. You can also position the cursor on the message line of the panel and press the EXHELP key.* |
| Command help | Describes a command. | Type HELP, a space, and the command on the command line and press ENTER. |
| Keys help | Displays the KEYSTEMP panel to let you view and temporarily alter the settings of the PF keys for the current panel. | Type HELP KEYS or KEYSUPDATE on the command line of a panel and press ENTER. |
| Function key area help | Displays a help panel for each PF key on the current panel. | Position cursor on the specific PF key and press EXHELP. For help about the function key line only, position cursor on the function key line and press HELP. |
| Help for help panels | Displays a series of pop-up windows that explain how to get online help. | Press HELP from a help panel, |
| Help for Pull-down Items | Displays help panels for options on pull-down panels. | Type the pull-down option number in the selection field and press PF1. |

* Message help from within the FSE is accessed differently. Refer to the FSE HELP command in “Using the Full-Screen Editor” on page 165.

Field help

Field help assists you with the individual fields on panels. Field help can be requested from any field on your panel (unprotected and protected) in which there is variable data, either entered by you or displayed by the system. Help is even available to explain the panel ID, title, and date and time shown on panels. An example of field help is the placing of the cursor on a field, for example the Y or N of the Entry Option “Immediate?” on a parameter entry panel, and pressing HELP to display a help panel that describes the “Immediate?” option.

You can also place the cursor on a display field to obtain field help. For example, the Errors field on parameter entry panels is for viewing only and cannot be changed. However, if you position the cursor on the Errors field (in the area where data is displayed) and issue HELP, a help panel will appear with information about the Errors field.

If you position the cursor on a nonvariable data area, such as the group headers From and Thru on parameter entry panels, the HELPF000 panel is displayed to instruct you on the correct positioning of the cursor to obtain field help. Field Help is also available from the Prompt and the Action Bar.

Extended help

Extended help assists you by explaining an action. Extended help can be issued with the cursor in any position on your panel. For example, you can issue EXHELP from any position on the DECOMPOSE Program Entry panel to display information about the Decompose action. If the topic of extended help displays multiple panels, you can use the scroll keys displayed on the help panel to scroll backward and forward to view all information on the topic. Extended Help is also available from the Action Bar and the Prompt.

Message help

Message help assists you with information about a specific message. Message help can be issued two ways. The first way is to enter HELP xxx on the command line of a panel (where xxx is the 3-character message code, such as F02 or U31). An example is ===> HELP U28. The second way to access message help is to position the cursor on the message line of a panel and press the EXHELP key. This method will display a help panel for the current message displayed.

To display a help panel that explains the message line, position the cursor on the message line and press the HELP key.

Message help pertains to only those help panels designed specifically for the Program Design Facility; these panels are not MANTIS prompters. Also note that you can request message help for any message, regardless of the CEF panel that is currently displayed.

Message help from within the FSE is accessed differently. See the FSE HELP command in [“Using the Full-Screen Editor”](#) on page 165.

Refer to [MANTIS Messages and Codes, OS/390, VSE/ESA](#), P39-5004, for explanations and corrective actions for specific messages.

Command help

Command help assists you by giving detailed information about a specific command. You can access help for any command in the Prompt for that active panel by entering HELP xxx (where xxx is the command).

Keys help

Keys help displays information about the PF key assignments for your current panel. Keys help can be issued by entering HELP KEYS or KEYSUPDATE on the command line. The KEYSTEMP panel is displayed to allow you to temporarily alter PF keys by typing over them with the new settings. You cannot change the numbers but you can change the settings with a valid action. Keys help is available for panels that display a command line and is also available from a panel when a PF key is assigned to HELP KEYS.

Function Key Area help

To display a help panel that explains the purpose and use of the function key line, place the cursor in any position on the function key line and press HELP.

To display a help panel that explains the purpose and use of a specific PF key, position the cursor anywhere on the displayed PF key (or one space before or after the key), and press EXHELP. For example, positioning the cursor in any of these underscored positions gives you help for the Prompt PF key: `F4=PROMPT`.

Help for help panels

For an online set of windows that describes the help panels associated with the Program Design Facility, press HELP or EXHELP from any help panel. The “How to Get Help” windows will be displayed, describing the types of help panels presented in this chapter.

To move around the “How to Get Help” windows, press the FORWARD (FWD) or BACKWARD (BKWD) keys shown at the bottom of the window. To alter the PF keys for the current action, press KEYS HELP.

To exit from the help panels and return to the current function, press EXIT. To return to the current help panel, press CANCEL.

Help for pull-down items

To get help for a pull-down item enter the pull-down option number, for example 4, in the selection field and press PF1. If you place the cursor on the name of the option and press ENTER, you will get the Help for Help panel.

Error Condition Panels

The Error Condition Panel is displayed when an error is encountered to show the current action, message code, message text, and current library and program in error. The following screen illustration is a sample of this panel:

```
ERROR                               Error Condition                               YYYY/MM/DD HH:MM:SS
An error occurred while you were doing the following:
Action . . . . . DELETE
Code . . . . . CDT
Description . .
CANNOT DELETE TRIGGER CONTROL RECORD
Context . . . . . ACCT:00000
ENTER  F1=HELP  F3=EXIT  F12=CANCEL
```

The fields on this panel are for viewing only and cannot be altered. The Action field shows the current action you attempted; Code shows the 3-character MANTIS message code; Description shows the text associated with this code; Context indicates the user library and program name (or sequence number, if Trigger file processing) that is in error. To view a help panel for the specific message shown, press HELP. To return to the previous panel, press ENTER, EXIT, or CANCEL.

Refer to *MANTIS Messages and Codes, OS/390, VSE/ESA*, P39-5004, for descriptions of and actions for Program Design Facility messages.

3

Program Design Facility commands

This chapter describes the individual commands used with the Program Design Facility. The commands are presented in alphabetical order in the following format:

- Description** Provides a general description of the command.
- Format** Shows the required format of the command followed by a description of each of the parameters. Notation conventions are described in at the beginning of this manual. Accepted abbreviations appear with each command.
- Considerations** Explains special limitations, considerations, or guidelines for command usage. The type of panel (menu, list, parameter entry, update) on which this command can be used is also indicated here.

You can issue commands from the command line of panels as well as from the Action fields of list panels. To display an online list of the valid commands for the current action, issue PROMPT. See “[Entering a command](#)” on page 50 for information on navigating through the system using commands. For information about the primary commands and line commands used with the Full-Screen Editor, see “[Using the Full-Screen Editor](#)” on page 165.

List of Program Design Facility commands

The following table provides an alphabetic list and a brief description of the Program Design Facility commands:

| Command | Description |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACTION (ACTN) | Displays the Action Bar across the top of a list panel. |
| AUDIT | Displays the Audit Trail List. |
| BILL | Displays the Bill of Materials List. |
| BIND | Creates an HPO-bound version of a MANTIS program. |
| BROWSE | Lets you scroll through profile information for each program in your directory. |
| CANCEL | Allows you to exit from a session with the Program Design Facility, one panel at a time, or to exit from the Action Bar pull-down to the Action Bar. |
| CEFCHECK | Identifies program components and source code that changed since the last Compose was issued. |
| CHECK | Checks an HPO-bound program to determine if any programs or components changed since the last time the program was bound. |
| CLEAR | Supports the 3270 hardware feature to clear a panel of the data you typed. |
| COMMAND | Toggles the command line from the top of your panel to the bottom (or from the bottom to the top). |
| COMPOSE | Assembles a source program and its COMPONENT statement(s) into an executable program with expanded component code. |
| CONFIRM | Lets you confirm execution of an action from a parameter entry panel. |
| COPY | Copies the contents of a program from your library (or another library) to a program in your library. |
| CREF | Cross references source programs and components in your library and then builds the Bill of Materials List from the cross reference. |
| DECOMPOSE | Disassembles an executable program into individual components and then updates program libraries with source changes and component changes. |
| DELETE | Deletes a record from the Trigger file |

| Command | Description |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EDIT | Starts a session with the Full-Screen Editor (FSE) where you can view, create, and modify MANTIS programs. |
| ET | Accesses Entity Transformers (if available) directly from the Program Design Facility menu. |
| EXECUTE | Executes an action on a trigger record, parameter entry panel, or updates the program profile. |
| EXHELP | Displays a help panel to explain a specific action. |
| EXIT | Terminates the current function and returns to a higher level function. |
| FORWARD (FWD) | (1) Repositions a list forward one panel, and (2) retrieves the next record on a browse panel. |
| HELP | Displays a help panel that explains a specific field, command, or message, or displays the KEYSTEMP panel where you can alter PF keys. |
| KEYSUPDATE (KUPD) | Displays a list of PF key settings that you can change for the duration of the current action. |
| L (locate) | Repositions a list panel to a specific program or component. |
| LEFT | Moves the columns of a list panel to the left to allow you to view all fields that extend beyond the width of your screen. |
| LIST | Displays the Program Directory List to let you select programs for editing (using the Full-Screen Editor), or to let you select programs for other actions. |
| LOGOFF | Lets you exit from MANTIS (if you are editing using the Full-Screen Editor, your changes are saved). |
| MENU | Lets you return to the MANTIS Facility Selection menu (if you are editing using the Full-Screen Editor, your changes are saved). |
| PROFILE | Displays program profile information. |
| PROMPT (PMPT) | Displays a list of the valid commands and actions you can issue from the current panel. |
| PURGE | Deletes a program from your directory. |

| Command | Description |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REFRESH | Updates date and time on list panels, restores the Action fields on list panels, incorporates new entries on list panels, removes deleted entries from list panels, and resets Entry and Function Options on parameter entry panels. |
| RENAME | Renames a program from your library to your library. |
| RETRIEVE (?) | Redisplays the last seven commands, one at a time, issued from the command line of a panel. |
| RIGHT | Moves the columns of a list panel to the right to allow you to view all fields that extend beyond the width of your screen. |
| SKIP | Bypasses execution of an action on a parameter entry panel for a specific program. |
| SQLBIND | DB2 and SQL/DS environments only. <i>Static</i> : Places information about a program's SQL statements and host variables into an internal file to create an SQL support module for static execution. <i>Extended Dynamic</i> : Creates an SQL/DS access module for the program, saves information about SQL statements and host variables, and makes the program immediately executable. |
| SQLCHECK | DB2 and SQL/DS environments only. <i>Static</i> : Determines if a program and its corresponding SQL support load module are consistent. <i>Extended Dynamic</i> : Determines if the program and corresponding SQL/DS access module are consistent. |
| SQLMAINT | DB2 environment only. Displays the SQL Bind Information panel and allows you to view and/or purge the information. |
| SQLUNBIND | DB2 and SQL/DS environments only. <i>Static</i> : Marks a MANTIS program as not SQL bound and deletes the SQL bind information from the internal file. <i>Extended Dynamic</i> : Marks the program as not SQL bound, removes SQL statements and host variables, and deletes the associated SQL/DS access module. |
| UNBIND | Replaces the HPO-bound version of a MANTIS program with the unbound version. |
| UPDATE | Updates program profile information and trigger records. |

ACTION

The ACTION command displays the Action Bar across the top of list panels.

{ ACTION }
{ ACTN }

General considerations

- ◆ The ACTION command is available only on list panels.
- ◆ You can issue ACTION or its abbreviation ACTN. Both formats work identically.
- ◆ The Action Bar allows you to select an action item; you can then select the program(s) displayed on a list on which the action item will be issued.
- ◆ The Action Bar is displayed on a list panel if you display it by issuing ACTION (or ACTN); the Action Bar can be displayed permanently if your Master User establishes it for your user ID.
- ◆ When you issue ACTION on a list panel, the command line (===>) is moved to the bottom of your panel.
- ◆ For more information about the Action Bar, see “[Action Bar](#)” on page 39 and “[Using the Action Bar](#)” on page 55.

AUDIT

The AUDIT command displays the Audit Trail List.

AUDIT

General considerations

- ◆ AUDIT is available on the Program Design Facility menu.
- ◆ AUDIT is issued without a program name on the command line of a panel to display the Audit Trail List.
- ◆ The Audit Trail List shows the actions you issued on programs. The Audit Trail List displays the most recent program activity record at the top of the list.
- ◆ For more information about the Audit Trail List, see “[Utilities](#)” on page 389.

BILL



The BILL command is available to AD/Advantage users only.

The BILL command displays the Bill of Materials List.

BILL [program-name]

program-name

Description *Optional.* Specifies the name of the program (in your library only) on which to display the Bill of Materials List.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the BILL command.
- ◆ The BILL command is available on the Program Design Facility menu and on list panels.
- ◆ When you issue BILL on the command line of a panel, the Bill of Materials List displays.
- ◆ Entering the LOCATE (or L) command in the Action field of the Bill of Materials List displays the Component Where Used List to show the source programs in your library that use a specific component.
- ◆ For more information about the Bill of Materials List and use of the BILL command for the Component Engineering Facility (CEF) functions, see “[Utilities](#)” on page 389.

BIND

The BIND command creates an HPO-bound version of a MANTIS program.

BIND [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing program (in your library only) to be designated for the Bind.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user’s library with the BIND command.
- ◆ The BIND command is available on the Program Design Facility menu and on list panels.
- ◆ You cannot bind a Component-Engineered source program. Composed (executable) programs can be bound.
- ◆ If you enter BIND without a program name, the BIND Program Entry panel is displayed to allow you to specify program names and set Entry and Function Options for the Bind action. If you enter BIND with a program name, the Bind action is executed and the HPO Status Report will be displayed to show the program information, status code, and status message resulting from the Bind action.
- ◆ If you want to bind a set of programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, BIND CUST* and BIND CUS? are acceptable and will display the BIND Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ For more information about binding and the BIND Program Entry panel, see “[Bind Options](#)” on page 365.

BROWSE

The BROWSE command lets you scroll through profile information for each program in your directory.

BROWSE [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing program (in your library only) where the browse will begin, or the next sequential (alphabetic) program if the name you entered does not exist.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the BROWSE command.
- ◆ The BROWSE command is available on the Program Design Facility menu.
- ◆ If you issue BROWSE without a program name, the BROWSE Program Profile Records panel is displayed to allow you to view the profile information for the first program on file. If you issue BROWSE with a program name, the BROWSE Program Profile Records panel is displayed, but it starts with the program you specified.
- ◆ For more information about the BROWSE Program Profile Records panel, see "[Utilities](#)" on page 389.

CANCEL

The CANCEL command allows you to exit from a session with the Program Design Facility, one panel at a time, or to exit from the Action Bar pull-down to the Action Bar.

CANCEL

General considerations

- ◆ CANCEL is a common dialog action that can be used on panels that display a command line.
- ◆ When you issue CANCEL, the previous panel is displayed. When processing a range of program names or a generic pattern of program names, changes that were made before you issued CANCEL will be saved.

CEFCHECK



The CEFCHECK command is available to AD/Advantage users only.

The CEFCHECK command identifies program components and source code that changed since the last Compose was issued.

CEFCHECK [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing source program.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the CEFCHECK command.
- ◆ If you issue CEFCHECK without a source program name, the CEFCHECK Program Entry panel displays, allowing you to specify program names and set Entry and Function Options for the Check action. If you issue CEFCHECK with a source program name, the CEF Check action will execute on the designated program.
- ◆ To check a set of source programs whose names correspond to a particular pattern, use the wildcard characters * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, CEFCHECK CUST* and CEFCHECK CUS? are acceptable and will display the CEFCHECK Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ For more information about using the CEF Check action with the Component Engineering Facility (CEF), see "[Component Engineering Facility \(CEF\)](#)" on page 297.

CHECK

The CHECK command is used to check an HPO-bound program to determine if any programs or components changed since the last time the program was bound.

CHECK [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing program (in your library only) to be HPO-checked.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the CHECK command.
- ◆ CHECK is available on the Program Design Facility menu and on list panels.
- ◆ If you issue CHECK without a program name, the CHECK Program Entry panel is displayed to allow you to specify program names and set Entry and Function Options. If you issue CHECK with a program name, the Check action is executed and the HPO Status Report will be displayed to show the program information, status code, and status message resulting from the Check action.
- ◆ If you want to CHECK a set of programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, CHECK CUST* and CHECK CUS? are acceptable and will display the CHECK Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ For more information about the Check action and the CHECK Program Entry panel, see “[Bind Options](#)” on page 365.

CLEAR

CLEAR is a common dialog action that supports the 3270 hardware feature to clear a panel of the data you typed.

CLEAR

General considerations

- ◆ CLEAR is a common dialog action to be used on panels where you can type data (menu, lists, parameter entry panels).
- ◆ Press the CLEAR key on your keyboard (before you press ENTER) to clear the variable data typed on your terminal screen.
- ◆ When you press the CLEAR key, the terminal screen is displayed unchanged.

COMMAND

The COMMAND command toggles the command line from the top of a panel to the bottom (or from the bottom to the top).

{
COMMAND
CMD
}

General considerations

- ◆ COMMAND is a common dialog action that can be used on all panels displaying a command line.
- ◆ You can issue COMMAND or its abbreviation CMD. Both formats work identically.
- ◆ The command line (===>) on your panel indicates where you enter commands.
- ◆ If the command line is at the top of your panel, issue COMMAND to move it to the bottom. If the command line is at the bottom of your panel, issue COMMAND to move it to the top. Your Master User establishes the original location of the command line on your panels.
- ◆ To reset the command line to its original position on the panel, press the COMMAND PF key twice (pressing this key once temporarily removes the command line from the panel). If you don't have COMMAND assigned to a PF key, you can also issue EXIT (enter the EXIT command on the command line or press the EXIT PF key) to reset the position of the command line.

COMPOSE



The COMPOSE command is available to AD/Advantage users only.

The COMPOSE command assembles a source program and its COMPONENT statement(s) into an executable program with expanded component code.

COMPOSE [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing source program (in your library only) to be composed.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the COMPOSE command.
- ◆ The COMPOSE command is available on the Program Design Facility menu, Program Directory List, Bill of Materials List, and Audit Trail List.
- ◆ Issue the COMPOSE command on source programs that contain at least one COMPONENT statement.
- ◆ If you issue COMPOSE without a program name, the COMPOSE Program Entry panel is displayed to allow you to specify program names and set Entry and Function Options for the Compose action. If you issue COMPOSE with a program name, the Compose action will execute on the designated program.
- ◆ If you want to COMPOSE a set of source programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, COMPOSE CUST* and COMPOSE CUS? are acceptable and will display the COMPOSE Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ For more information about using the Compose action and the COMPONENT statement used in source programs, see “[Component Engineering Facility \(CEF\)](#)” on page 297.

CONFIRM

The CONFIRM command lets you confirm the execution of an action from a parameter entry panel.

CONFIRM

General considerations

- ◆ CONFIRM is available on parameter entry panels only.
- ◆ CONFIRM is automatically invoked when you issue an action from a parameter entry panel on a range of program names or a generic pattern of program names.
- ◆ Setting the “Confirmation?” Entry Option to N (no) on parameter entry panels turns off the confirmation prompt so the action issued on all designated programs in the range of names or in the generic pattern will be executed, and you will not be prompted to issue CONFIRM (or SKIP) for individual programs.
- ◆ For an explanation of the parameter entry panel, see “[Parameter entry panels](#)” on page 73. For more information about the SKIP command, see the detailed command description in this section.

COPY

The COPY command copies the contents of a program from your library (or another library) to a program in your library.

```
COPY [type.][ { " } ] library :[program - name][/password][ { " } ]
```

type.

- Description** *Optional.* Defines the entity type or class of entity.
- Default** PROGRAM.
- Format** A text literal (with a trailing period) equating to a valid type.
- Options** PGRM. or PROGRAM. (for a MANTIS program).
- Consideration** The trailing period (.) is required to distinguish *type* from other parameters and entity names in the command string.

```
{ " } library:
```

- Description** *Optional.* Specifies the name of the user library on which the program to be copied resides.
- Default** Your sign-on library.
- Format** MANTIS standard name, 1–16 characters in length
- Consideration** If the library is supplied, double quotes (") or single quotes (') are required, starting from the *library* parameter and ending after the last parameter coded. Examples COPY PGRM. "ACCT:CUST_UPDATE" or COPY PGRM.'ACCT:CUST_UPDATE' are both acceptable. A space between *type* and *library* (as shown in the first example) is permitted but is not required (as shown in the second example).

program-name

- Description** *Optional.* Specifies the name of the existing program to be designated for the Copy action.
 - Format** MANTIS standard name, 1–32 characters in length.
-

/password

- Description** *Conditional.* Specifies the program password used when the program was saved.
 - Default** In your library, the default will be the existing program password or (for a new program) the library password. In another user's library, the password will default to your sign-on password.
 - Format** 1–16 alphanumeric characters.
 - Consideration** Password is required only if the program to be copied resides in another user's library and the program password is different than your sign-on password.
-



- Description** *Optional.* Indicates close of user *library* parameter.
- Consideration** Required only if the library is supplied. You can use double quotes (") or single quotes ('), starting from the *library* parameter and ending after the last parameter coded.

General considerations

- ◆ You can copy from your own user library or from another user's library (if you know the program password). You can only copy into your own user library.
- ◆ COPY is available on the Program Design Facility menu and on list panels.
- ◆ If you issue COPY with or without a program name, the COPY Program Entry panel displays to allow you to specify the target program name and set Entry and Function Options for the Copy action.
- ◆ To COPY a set of programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, COPY CUST* and COPY CUS? are acceptable and will display the COMPOSE Program Entry panel showing the first program name that matches the wildcard criteria. Note that wildcard processing for the COPY command is only good for the "from" program, not the target program.
- ◆ For more information about the Copy action and the COPY Program Entry panel, see "[Program design](#)" on page 143.

CREF



The CREF command is available to AD/Advantage users only.

The CREF (Cross Reference) command cross references programs and components in your library and then builds the Bill of Materials List from the cross reference.

CREF [*program-name*]

program-name

- Description** *Optional.* Specifies the name of the existing source program (in your library only) to be cross referenced.
- Format** MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the CREF (Cross Reference) command.
- ◆ CREF is available on the Program Design Facility menu and on list panels.
- ◆ If you add new source programs (that contain components) to your library, issue CREF to make certain that the most current cross reference of these programs and components is reflected in the Bill of Materials List. If you purge source programs, a CREF is not needed before viewing the Bill of Materials.
- ◆ If you issue CREF without a source program name, the CREF Program Entry panel displays to allow you to specify program name(s) and set Entry and Function Options for the Cross Reference (CREF) action. If you issue CREF with a source program name, the Cross Reference action executes on the designated program.
- ◆ To issue CREF for a set of source programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, CREF CUST* and CREF CUS? are acceptable and will display the CREF Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ For more information about cross referencing programs and components in the Component Engineering Facility (CEF), see ["Component Engineering Facility \(CEF\)"](#) on page 297.

DECOMPOSE



The DECOMPOSE command is available to AD/Advantage users only.

The DECOMPOSE command disassembles an executable program into individual components and then updates program libraries with source changes and component changes.

DECOMPOSE [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing executable program (in your library only) to be decomposed.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the DECOMPOSE command.
- ◆ DECOMPOSE is available on the Program Design Facility menu and on list panels.
- ◆ Before issuing the DECOMPOSE command, make certain you nominate the COMPONENT statements for the component code you changed. Nominate a COMPONENT statement by changing the asterisk (*) to an at sign (@) (CEF character). For example, change |*COMPONENT to |@COMPONENT.
- ◆ Setting the "Decompose all?" Entry Option to Y (yes) on the DECOMPOSE Program Entry panel updates all component code, whether you changed it or not. Using this option eliminates the need to nominate individual components.
- ◆ If you issue DECOMPOSE without an executable program name, the DECOMPOSE Program Entry panel is displayed to allow you to specify program names and set Entry and Function Options for the Decompose action. If you issue DECOMPOSE with an executable program name, the Decompose action will execute on the designated program.
- ◆ If you want to DECOMPOSE a set of executable programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, DECOMPOSE CUST* and DECOMPOSE CUS? are acceptable and will display the DECOMPOSE Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ For more information about the Decompose action and the DECOMPOSE command used with the Component Engineering Facility (CEF), see "[Component Engineering Facility \(CEF\)](#)" on page 297.

DELETE

The DELETE command deletes a record from the Trigger file.

DELETE [*type.*] [*sequence number*]

type.

- Description** *Optional.* Defines the entity type or class of entity.
- Default** ETRG. (for Trigger file).
- Options** ETRG. (for Trigger file).
- Format** A text literal (with a trailing period) equating to a valid type.
- Consideration** The trailing period (.) is required to distinguish type from other parameters and entity names in the command string.
-

sequence number

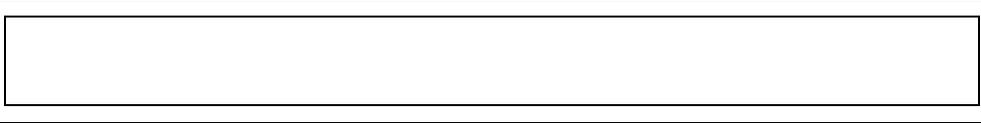
- Description** *Optional.* Specifies the sequence number shown in the SeqNo field on the Trigger File List.
- Format** Up to five numeric characters, automatically zero-filled.

General considerations

- ◆ The DELETE command is valid only on the Trigger File List.
- ◆ DELETE functions for the Trigger file only and does not remove programs or components from your directory.
- ◆ You can enter DELETE in the Action field of the Trigger File List to delete a specific trigger record. When the record is deleted, *DELETE will be redisplayed in the Action field of the Trigger File List.
- ◆ If you issue DELETE on the command line of the Trigger File List, the DELETE Trigger Record Entry panel is displayed to let you delete one or more trigger records by sequence number (SeqNo).
- ◆ You can enter the DELETE command with the optional parameters *type*. and *sequence number*. For example, entering DELETE ETRG. 2 will display the DELETE Trigger Record Entry panel with the specific trigger record 00002 (automatically zero-filled) shown in the SeqNo field. This panel lets you then confirm or skip the deletion.
- ◆ If you want to DELETE a set of sequence numbers (SeqNo field on the Trigger File List) that correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, DELETE ETRG. 0000* and DELETE ETRG. 0000? are acceptable and will display the DELETE Trigger Record Entry panel showing the first sequence number that matches the wildcard criteria. Note that the type (ETRG.) must be entered.
- ◆ For more information about the Trigger file and the DELETE Trigger Record panel, see “[Utilities](#)” on page 389.

EDIT

The EDIT command starts a session with the Full-Screen Editor (FSE) where you can view, create, and modify MANTIS programs.



type.

- Description** *Optional.* Defines the entity type or class of entity.
- Default** PROGRAM.
- Format** A text literal (with a trailing period) equating to a valid type.
- Options** PGRM. or PROGRAM. (for a MANTIS program).
- Consideration** The trailing period (.) is required to distinguish type from other parameters and entity names in the command string.

library:

- Description** *Optional.* Specifies the name of the user library on which the program to be edited resides.
- Default** Your sign-on library.
- Format** MANTIS standard name, 1–16 characters in length
- Consideration** If the library is supplied, double quotes (") or single quotes (') are required, starting from the *library* parameter and ending after the last parameter coded. Examples EDIT PGRM. "ACCT:CUST_UPDATE" or EDIT PGRM.'ACCT:CUST_UPDATE' are both acceptable. A space between type and library (as shown in the first example) is permitted but is not required (as shown in the second example).

program-name

- Description** *Optional.* Specifies the name of the new or existing program to be edited using the Full-Screen Editor.
- Format** MANTIS standard name, 1–32 characters in length.

/password

- Description** *Conditional.* Specifies the program password used when the program was saved.
- Default** In your library, the default will be the existing program password or (for a new program) the library password. In another user's library, the password will default to your sign-on password.
- Format** 1–16 alphanumeric characters.
- Consideration** Password is required only if the program to be edited resides in another user's library and the program password is different than your sign-on password.

/description

- Description** *Optional.* Specifies the text description of the program.
- Format** 1–46 alphanumeric characters.

Considerations

- ◆ If you enter a new program name with a description, the description will be saved and will be displayed on the UPDATE Program Profile panel. If you enter an existing program name with a description, the description you entered will be ignored. To change the description, use the UPDATE Program Profile panel.
- ◆ If you include a description, you must either supply the password parameter or you must include a double slash (//) between the program name and the description. The format required is shown in this example: EDIT CUST_MAINT//THIS IS A SAMPLE DESCRIPTION.

{ " }

Description *Optional.* Indicates close of user *library* parameter.

Consideration Required only if the library is supplied. You can use double quotes (") or single quotes ('), starting from the *library* parameter and ending after the last parameter coded.

General considerations

- ◆ You can edit a program from another user's library (if you know the program password). However, you can save or replace the program in your library only.
- ◆ The EDIT command is available on the Program Design Facility menu, Program Directory List, Audit Trail List, and Bill of Materials List.
- ◆ If you issue EDIT with a new program name, an empty Full-Screen Editor panel displays to let you code new program statements. If you issue EDIT with an existing program name, the program is displayed in the Full-Screen Editor to view and/or make changes.
- ◆ To EDIT a set of programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, EDIT CUST* and EDIT CUS? are acceptable and will display the EDIT Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ For more information about the Edit action, see "[Program Design Facility commands](#)" on page 85. For information about using editing commands with the Full-Screen Editor, see "[Using the Full-Screen Editor](#)" on page 165.

ET

The ET command allows you to access the Entity Transformers facility directly from the Program Design Facility menu or program list. Previously, Entity Transformers could only be accessed from the MANTIS Facility Selection menu.

ET

General consideration

- ◆ If you are not authorized to access the Entity Transformers facility, you will receive an error message.
- ◆ When you exit from the Entity Transformers facility you will be returned to where you issued the ET command.
- ◆ See *MANTIS Entity Transformers*, P39-0013, for information on using the Entity Transformers facility.

EXECUTE

The EXECUTE command executes an action on a trigger record, parameter entry panel, or updates the program profile.

EXECUTE [*type.*] [*sequence number*]

type.

- Description** *Optional.* Defines the entity type or class of entity.
- Default** ETRG. (for Trigger file).
- Format** A text literal (with a trailing period) equating to a valid type.

Considerations

- ◆ The trailing period (.) is required to distinguish *type* from other parameters and entity names in the command string.
 - ◆ *type* is valid for the Trigger file only.
-

sequence number

- Description** *Optional.* Specifies the sequence number shown in the SeqNo field on the Trigger File List.
- Format** Up to five numeric characters (automatically zero-filled).
- Consideration** *sequence number* is valid for the Trigger file only.

General considerations

Trigger File List:

- ◆ EXECUTE is a valid command on parameter entry panels, panels associated with the Trigger file, and the UPDATE Program Profile panel. EXECUTE is not valid on the Program Design Facility menu or list panels.
- ◆ You can enter EXECUTE in the Action field of the Trigger File List to execute specific trigger record. When the record is executed, *EXECUTE is redisplayed in the Action field of the Trigger File List.
- ◆ You can also issue EXECUTE on the command line of the Trigger File List to display the EXECUTE Trigger Record Entry panel.
- ◆ You can issue EXECUTE with the optional parameters *type*. and *sequence number*. For example, entering EXECUTE ETRG. 2 from the Trigger File List will display the EXECUTE Trigger Record Entry panel with the specific trigger record 00002 (automatically zero-filled) shown in the SeqNo field. This panel lets you then confirm or skip the execution of this trigger record.
- ◆ If you want to EXECUTE a set of sequence numbers (SeqNo field on the Trigger File List) that correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, EXECUTE ETRG. 0000* and EXECUTE ETRG. 0000? are acceptable and will display the EXECUTE Trigger Record Entry panel showing the first sequence number that matches the wildcard criteria. Note that the type (ETRG.) must be entered.

Parameter Entry Panel

- ◆ When you issue EXECUTE from a parameter entry panel, the action (e.g., Decompose, Edit, CEF Check) is executed.
- ◆ You can type a generic pattern of program names (e.g., CUST* or CUST?) in the From Name field of a parameter entry panel, then enter the EXECUTE command using "*" or "?".
- ◆ For more information about the Trigger file and use of the EXECUTE command, see “Utilities” on page 389. For information about executing commands with EXECUTE on parameter entry panels, see the specific panel title listed in the Table of Contents.

EXHELP

The EXHELP command displays a help panel to explain a specific action.

EXHELP

General considerations

- ◆ EXHELP (extended help) is a common dialog action that can be used on panels where EXHELP is available.
- ◆ You can issue the EXHELP command with the cursor in any position on the panel. One or more help panels will be displayed to explain the current action (Compose, Decompose, Purge, and others.). Use the scroll keys shown on the help panel to page through and review multiple help panels. Pressing EXIT returns you to the previous panel.
- ◆ EXHELP is also available from the Action Bar, the Prompt, and the Function Key Area.
- ◆ For more information about extended help, see “[Help panels](#)” on page 79. For information about field-level help, see the detailed description in this section for the HELP command.

EXIT

The EXIT command terminates the current function and returns a higher level function.

EXIT

General considerations

- ◆ EXIT is a common dialog action that can be used on panels that have a command line, as well as on display-only panels like the reports. For example, the COMPOSE Summary Report shows EXIT as a valid action displayed as a PF key.
- ◆ If you issue an action on a range of program names or a generic pattern of program names, and then issue EXIT before all programs in the series have processed, the series will be broken and the parameter entry panel for the current action will be displayed.

FORWARD

The FORWARD command (1) repositions a list panel forward one panel, and (2) retrieves the next record on a browse panel.

{ FORWARD }
{ FWD }

General considerations

- ◆ The FORWARD command (or FWD) is available on list panels, the BROWSE Audit Trail Records panel, and the BROWSE Program Profile Records panel.
- ◆ You can issue FORWARD or the abbreviation FWD.
- ◆ Issue FORWARD on the command line of a list panel (Program Directory List, Audit Trail List, Bill of Materials List, or Trigger File List) to move forward one panel. Also, you can issue FORWARD on the command line of the Audit Trail Browse, Program Profile Browse, and Trigger File Browse panels to view the next record.
- ◆ For more information about list panels, see “List panels” on page 67.

HELP

The HELP command displays a help panel that explains a specific field, command, message, or displays the KEYSTEMP panel where you can alter PF key settings.

HELP { *xxx*
command
keys }

xxx

Description *Optional.* Specifies the 3-character message code for which you want a help panel. For example, entering HELP U31 on the command line displays a help panel to explain the U31 message and offer corrective action.

Format Three alphanumeric characters.

Consideration Refer to *MANTIS Messages and Codes, OS/390, VSE/ESA*, P39-5004, for explanations and corrective actions for specific messages.

command

Description *Optional.* Specifies the name of Program Design Facility command (e.g., COMPOSE, EDIT, COPY, CREF) for which you want a help panel.

Format Alphanumeric characters that equate to a valid command used in the Program Design Facility.

Consideration For a list of commands used in the Program Design Facility, see “*Editing commands*” on page 507. For detailed command descriptions, see the individual commands in this section.

keys

Description *Optional.* Specifies that the KEYSTEMP panel should be displayed to allow you to view and alter the PF key settings for the duration of the current panel.

Format KEYS

Considerations

- ◆ To change the PF key settings shown on the KEYSTEMP panel, type HELP KEYS on the command line of the current panel. The KEYSTEMP panel will be displayed. Type over the displayed values and press ENTER and then press EXIT (or just press EXIT). When you return to the current panel, the new settings will be in effect, but only for the duration of your current function. When you exit from the current panel, the PF key settings will be reset to system default values.
- ◆ The HELP KEYS command and the KEYSUPDATE command (both issued from the command line) work the same way to temporarily change PF key settings.
- ◆ Your Master User can alter the settings of your PF keys permanently for your user ID.
- ◆ For a list of PF key settings at installation, see “[PF keys at installation](#)” on page 517. For more information on the KEYSTEMP panel, see “[Using PF keys](#)” on page 53.

General considerations

- ◆ HELP is a common dialog action that can be used on panels displaying a command line.
- ◆ If you issue HELP on the command line of a Program Design Facility panel and do not supply parameters, a help panel will be displayed to explain the command line.
- ◆ HELP is available for any field on your panel (unprotected and protected) in which there is variable data that you enter or data that is displayed. To view field-specific help, position the cursor on the desired field and press the HELP key.
- ◆ HELP is also available from the Action Bar and the Prompt.
- ◆ For more information about help panels, see “[Help panels](#)” on page 79. For information about the EXHELP command, see the detailed description in this section.

KEYSUPDATE

The KEYSUPDATE command displays a list of PF key settings that you can change for the duration of the current action.

```
{KEYSUPDATE}
{KUPD}
```

General considerations

- ◆ KEYSUPDATE is a common dialog action that can be used on panels displaying a command line.
- ◆ You can issue the KEYSUPDATE command or its abbreviation KUPD. Both formats work identically. The KEYSUPDATE command (and the equivalent HELP KEYS) can be issued from the command line to let you temporarily change PF key settings.
- ◆ To change the PF key settings shown on the KEYSTEMP panel, issue KEYSUPDATE from the current panel. The KEYSTEMP panel will be displayed. Type over the displayed values and press ENTER and then press EXIT (or just press EXIT). When you return to the current panel, the new settings will be in effect, but only for the duration of your current function. When you exit from the current panel, the PF key settings will be reset to system default values.
- ◆ Your Master User can alter the settings of your function keys permanently for your user ID.

L

The L (locate) command repositions a list panel to a specific program or component.

```
L [ program - name
   component - name ]
```

General considerations

- ◆ The L command is available on list panels only.
- ◆ You can enter L on the command line or in the Action field of a list panel. When entered on the command line with a program name (or partial name), (e.g., ==> L CUST_UPDATE or ==> L CUST), the list will be repositioned to CUST_UPDATE or the first CUST program (or the next greater item on the list panel if this name or partial name cannot be found). Entering L without a program name (e.g., ==> L) repositions the list at the top. Entering L in the Action field for a specific program will reposition that program at the top of the list.
- ◆ When you enter L in the Action field for a specific item on the Bill of Materials List, the Component Where Used List will display for that item.

LEFT

The LEFT command moves the columns of a list panel to the left to allow you to view all fields that extend beyond the width of your screen.

LEFT [*n*]

n

Description *Optional.* Defines the number of columns you want the list panel to move to the left.

Format 1–3 numeric characters.

Consideration Entering LEFT *n* (where *n* is a designated number of columns) shifts the list panel to the left by this number of columns.

General considerations

- ◆ The LEFT command is available on the command line of list panels only.
- ◆ If you issue LEFT without a column parameter, the list panel will be scrolled to a predefined number of columns; this number varies depending on the list panel.
- ◆ For more information about list panels, see “[List panels](#)” on page 67. Also, see the detailed description in this section for the RIGHT command.

LIST

The LIST command displays the Program Directory List to let you select programs for editing with the Full-Screen Editor, or to let you select programs for other actions.

LIST [*type.*] [*program-name*]

type.

- Description** *Optional.* Defines the entity type or class of entity.
- Default** PROGRAM.
- Format** A text literal (with a trailing period) equating to a valid type.
- Options** PGRM. or PROGRAM (for the Program Directory List).

Considerations

- ◆ The trailing period (.) is required to distinguish type from other parameters and entity names in the command string.
- ◆ Entering LIST without a type defaults to display the Program Directory List.

program-name

Description *Optional.* Specifies the name of the program (or alphabetic character string) to be located and displayed at the top of the Program Directory List.

Format MANTIS standard name, 1–32 characters in length.

Consideration Entering LIST CUST will position the list at the first program that begins with CUST. Entering LIST B will position the list at the first program beginning with B. In either case, if the full name, partial name, or alphabetic string cannot be located on the list, the list will be repositioned at the next greater value.

General considerations

- ◆ The LIST command is available on the Program Design Facility menu to display the Program Directory List, starting with the first program on the list.
- ◆ When entered on the command line with a program name (e.g., ==> LIST CUST_UPDATE), the list is repositioned with CUST_UPDATE at the top (or the next greater item if the one specified is not on the list). A partial program name can also be entered, for example, CUST.
- ◆ For more information about list panels, see “[List panels](#)” on page 67.

LOGOFF

The LOGOFF command lets you exit from MANTIS.

LOGOFF

General considerations

- ◆ LOGOFF is a common dialog action that can be used on panels displaying a command line.
- ◆ You can issue LOGOFF from the command line of any panel to log off from MANTIS.
- ◆ When you issue LOGOFF from the command line of a parameter entry panel, any changes to Entry Options, Function Options, and PF key settings are not saved before you are logged off from MANTIS.
- ◆ When you issue LOGOFF from the command line of the Full-Screen Editor, any edit changes you made are saved, and you are then logged off from MANTIS.
- ◆ For more information about the Prompt and common dialog actions, see “[Prompt](#)” on page 41.

MENU

The MENU command returns the MANTIS Facility Selection menu.

MENU

General considerations

- ◆ MENU is a common dialog action and can be used on panels displaying a command line.
- ◆ You can issue MENU from the command line of any panel to return to the MANTIS Facility Selection menu.
- ◆ When you issue MENU from the command line of a parameter entry panel, any changes to Entry Options, Function Options, and PF key settings are not saved before you are returned to the Facility Selection menu.
- ◆ When you issue MENU from the command line of the Full-Screen Editor, any edit changes you made are saved, and you are then returned to the Facility Selection menu.

PROFILE

The PROFILE command displays program profile information.

PROFILE [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing program (in your library only) for which profile information will be displayed.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the PROFILE command.
- ◆ The PROFILE command is available on the Program Design Facility menu and on list panels.
- ◆ If you issue PROFILE without a program name, the PROFILE Program Entry panel is displayed to allow you to specify program names and set Entry and Function Options for the Profile action. If you issue PROFILE with a program name, the UPDATE Program Profile panel is displayed to let you change the program's description, status, and password fields. This update panel also allows you to set the selection field (Sel) for addendum processing.
- ◆ If you change a program description using the PROFILE command, you cannot use the slash character (/) in the description, such as, "WORKING STORAGE UPDATED 1/20/92". The slash character (/) and everything following it will be ignored. This is because the slash character is reserved in the FSE to separate "*program/description/password*".
- ◆ If you want to issue PROFILE for a set of programs whose names correspond to a particular pattern of characters, use the wildcard character an asterisk (*) to represent an indefinite number of generic characters, and a question mark (?) to represent a single generic character. For example, PROFILE CUST* and PROFILE CUS? Are acceptable and will display the PROFILE Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ For more information about the Profile action and addendum processing see "[Program design](#)" on page 143.

PROMPT

The PROMPT command displays a list of the valid commands and actions you can issue from the current panel.

{ PROMPT }
{ PMPT }

General considerations

- ◆ PROMPT is a common dialog action and can be used on panels displaying a command line.
- ◆ You can issue PROMPT or its abbreviation PMPT on the command line of a panel. Both formats work identically. Or, you can position the cursor anywhere on your panel and press a PF key assigned to PROMPT.
- ◆ PROMPT lets you select a single command or common dialog action for the current panel. When you select a command or action and then exit from the Prompt list, the action is executed.
- ◆ The selection character (/) is used to select a command or action from the Prompt.

PURGE

The PURGE command deletes a program from your directory.

PURGE [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing program (in your library only) to be purged.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the PURGE command.
- ◆ PURGE is available on the Program Design Facility menu and on list panels.
- ◆ When you issue the PURGE command, the designated program is removed from your library.
- ◆ If you issue PURGE without a program name, the PURGE Program Entry panel is displayed to allow you to specify program names and set Entry and Function Options for the Purge action.
- ◆ If you want to PURGE a set of programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, PURGE CUST* and PURGE CUS? are acceptable and will display the PURGE Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ For more information about the Purge action and the PURGE Program Entry panel, see “[Program design](#)” on page 143.

REFRESH

The REFRESH command updates date and time on list panels, restores Action fields on list panels, incorporates new entries on list panel, removes deleted entries from list panels, and resets Entry and Function Options on parameter entry panels.

REFRESH

General considerations

- ◆ REFRESH is available on list panels, parameter entry panels, and the Program Design Facility menu.
- ◆ REFRESH updates a list panel with the current date and time of a program change. In addition, REFRESH clears any commands entered in the Action fields of the list panel. If you purge a program, issuing REFRESH redisplay the list panel to show the program was removed.
- ◆ When you issue REFRESH from a current parameter entry panel, variable data fields are cleared and options are reset to their system default values. REFRESH also incorporates any new entries on list panels and removes any deleted entries from list panels.
- ◆ When you issue REFRESH from the Program Design Facility menu, any commands, option numbers, or program names are cleared from the command line, and any option numbers typed in the Selection field are cleared.

RENAME

The RENAME command lets you rename a program from your library to your library, and allows you to change program name, description, and password.

RENAME [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing program to be designated for this action.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the RENAME command. This means you can only rename a program in your own user library.
- ◆ RENAME is available on the Program Design Facility menu and on list panels.
- ◆ RENAME purges the original program name and the new name is saved. The contents of the program are not affected by the RENAME command.
- ◆ If you issue RENAME with or without a program name, the RENAME Program Entry panel is displayed to allow you to specify program names and set Entry and Function Options for the Rename action.
- ◆ You can alter the password and/or description for the program you are renaming on the RENAME Program Entry panel.
- ◆ If you want to RENAME a set of programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, RENAME CUST* and RENAME CUS? are acceptable and will display the RENAME Program Entry panel showing the first program name that matches the wildcard criteria. Note that wildcard processing for the RENAME command is only good for the “from” program, not the target program.
- ◆ For more information about the Rename action and use of the RENAME Program Entry panel, see “[Program design](#)” on page 143.

RETRIEVE

The RETRIEVE command redisplay the last seven commands, one at a time, that you issued from the command line of a panel.

RETRIEVE
?

General considerations

- ◆ RETRIEVE is a common dialog action that can be used on panels displaying a command line.
- ◆ You can issue RETRIEVE or its abbreviation (?). Both formats work identically.
- ◆ When you issue RETRIEVE, the most recent command that you issued from the command line of the current panel is redisplayed. Each time you issue RETRIEVE, the previous command is redisplayed. RETRIEVE can redisplay up to the last seven commands issued. If you issue an eighth command, the oldest command is dropped.
- ◆ RETRIEVE redisplay only those commands issued from the command line of the current panel—it does not redisplay commands issued from the Action field of a list panel or commands issued from a panel other than the current panel.

RIGHT

The RIGHT command moves the columns of a list panel to the right to allow you to view all fields that extend beyond the width of your screen.

RIGHT [*n*]

n

Description *Optional.* Defines the number of columns you want the list panel to move to the right.

Format 1–3 numeric characters.

Consideration Entering RIGHT *n* (where *n* is a designated number of columns) shifts the list panel to the right by this number of columns.

General considerations

- ◆ RIGHT is available on the command line of list panels only.
- ◆ If you issue RIGHT without a column parameter, the list will scroll to a predefined number of columns; this number varies depending on the list.
- ◆ After you issue the RIGHT command, you can issue the LEFT command to return to the original position of the list panel.
- ◆ For more information about list panels, see “List panels” on page 67. Also see the detailed description in this section for the LEFT command.

SKIP

The SKIP command bypasses execution of an action on a parameter entry panel for a specific program.

SKIP

General considerations

- ◆ SKIP is available on parameter entry panels only.
- ◆ When you designate a single program, range of programs, or a generic pattern to be processed on a parameter entry panel, SKIP gives you the chance to bypass issuing the action on a specific program.
- ◆ Issuing SKIP increments the Skipped field by 1 on the current parameter entry panel. In addition, the next program in the range or generic pattern is displayed on this panel for you to bypass (with the SKIP command) or to execute (with the CONFIRM command).
- ◆ Setting the “Confirmation?” Entry Option to N (no) on parameter entry panels turns off the confirmation prompt so the action issued on all designated programs in the range of names or in the generic pattern will be executed. When the confirmation prompt is turned off, you will not be prompted to issue SKIP (or CONFIRM) for individual programs.
- ◆ When the “Confirmation?” Entry Option is set to N (no), you can break out of a series of programs by issuing EXIT. You can do the same thing in the Full-Screen Editor by issuing QUIT.
- ◆ For an explanation of the parameter entry panel, see “[Parameter entry panels](#)” on page 73. For more information about the CONFIRM command, see the detailed command description in this section.

SQLBIND

The SQLBIND command applies to DB2 and SQL/DS environments only:

- ◆ For static SQL, use the SQLBIND command to place information about a program's SQL statements and their host variables into an internal file to create an SQL support module for static execution of the program.
- ◆ For extended dynamic SQL, use the SQLBIND command to create an SQL/DS access module for the program, save information about SQL statements and host variables, and make the program immediately executable at the end of the bind.

SQLBIND [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing program (in your library only) to be SQL-bound.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the SQLBIND command.
- ◆ SQLBIND is available on the Program Design Facility menu and on list panels.
- ◆ If you want to SQLBIND a set of programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, SQLBIND CUST* and SQLBIND CUS? are acceptable and will display the SQLBIND Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ If you set UPPERCASE to OFF in the Full-Screen Editor (FSE), SQL commands must be entered in uppercase mode in order to be recognized.
- ◆ For information about the SQLCHECK and SQLUNBIND commands, see the detailed descriptions in this section.

SQLCHECK

The SQLCHECK command applies to the DB2 and SQL/DS environments only:

- ◆ For static SQL, use the SQLCHECK command to determine if a program and its corresponding SQL support load module are consistent.
- ◆ For extended dynamic SQL, use the SQLCHECK command to determine if the program and its corresponding SQL/DS access module are consistent.

SQLCHECK [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing program (in your library only) to be SQL-checked.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the SQLCHECK command.
- ◆ SQLCHECK is available on the Program Design Facility menu and on list panels.
- ◆ If you want to SQLCHECK a set of programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, SQLCHECK CUST* and SQLCHECK CUS? are acceptable and will display the SQLCHECK Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ If you set UPPERCASE to OFF in the Full-Screen Editor (FSE), SQL commands must be entered in uppercase mode in order to be recognized.
- ◆ For information about the SQLBIND and SQLUNBIND commands, see the detailed descriptions in this section.

SQLMAINT

The SQLMAINT command is available in DB2 environments only.

The SQLMAINT command allows you to view and/or purge SQL Bind Information. When you issue SQLMAINT, the SQL Bind Information panel is returned. This panel displays the program name, the corresponding module name and the date and time when the program was bound.

SQLMAINT

General considerations

- ◆ When you issue the SQLMAINT command, all DB2 SQLBIND modules will be accessed.
- ◆ SQLMAINT is available on the Program Design Facility menu only.
- ◆ If you want to issue SQLMAINT for a set of programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, SQLMAINT CUST* and SQLMAINT CUS? are acceptable and will display the SQL Bind Information panel showing the first program name that matches the wildcard criteria, the corresponding module name and the date and time when the program was bound.
- ◆ If you set UPPERCASE to OFF in the Full-Screen Editor (FSE), SQL commands must be entered in uppercase mode in order to be recognized.
- ◆ For more information on using the SQLMAINT command, refer to *MANTIS DB2 Programming, OS/390, VSE/ESA*, P39-5028.

SQLUNBIND

The SQLUNBIND command applies to the DB2 and SQL/DS environments only:

- ◆ For static SQL, use the SQLUNBIND command to mark a MANTIS program as not SQL-bound and to delete the SQL bind information from the internal file.
- ◆ For extended dynamic SQL, use the SQLUNBIND command to mark the program as not SQL-bound and to delete the associated SQL/DS access module.

SQLUNBIND [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing program (in your library) to be SQL-unbound.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user's library with the SQLUNBIND command.
- ◆ SQLUNBIND is available on the Program Design Facility menu and list panels.
- ◆ If you want to SQLUNBIND a set of programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, SQLUNBIND CUST* and SQLUNBIND CUS? are acceptable and will display the SQLUNBIND Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ If you set UPPERCASE to OFF in the Full-Screen Editor (FSE), SQL commands must be entered in uppercase mode in order to be recognized.
- ◆ For information about the SQLBIND and SQLCHECK commands, see the detailed descriptions in this section.

UNBIND

The UNBIND command replaces the HPO-bound version of a MANTIS program with the unbound version.

UNBIND [*program-name*]

program-name

Description *Optional.* Specifies the name of the existing program (in your library only) to be HPO-unbound.

Format MANTIS standard name, 1–32 characters in length.

General considerations

- ◆ You cannot access another user’s library with the UNBIND command.
- ◆ UNBIND is available on the Program Design Facility menu and list panels.
- ◆ If you issue UNBIND without a program name, the UNBIND Program Entry panel is displayed to allow you to specify program names and set Entry and Function Options for the Unbind action. If you issue UNBIND with a program name, the Unbind action is executed and the HPO Status Report will be displayed to show the program information, status code, and status message resulting from the Unbind action.
- ◆ If you want to UNBIND a set of programs whose names correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, UNBIND CUST* and SQLUNBIND CUS? are acceptable and will display the UNBIND Program Entry panel showing the first program name that matches the wildcard criteria.
- ◆ For more information about the unbind process and the UNBIND Program entry panel, see “[Bind Options](#)” on page 365.

UPDATE

Use this command to update program profile information and trigger records.

UPDATE [*type.*] [*sequence number*]

type.

| | |
|--------------------|-------------------------------------------------------------------|
| Description | <i>Optional.</i> Defines the entity type or class of entity. |
| Default | ETRG. (for Trigger file). |
| Options | ETRG. (for Trigger file). |
| Format | A text literal (with a trailing period) equating to a valid type. |

Considerations

- ◆ The trailing period (.) is required to distinguish type from other parameters and entity names in the command string.
- ◆ Type is valid for the Trigger file only.

sequence number

| | |
|----------------------|---------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> Specifies the sequence number shown in the SeqNo field on the Trigger File List. |
| Format | Up to five numeric characters (automatically zero-filled). |
| Consideration | Sequence number is valid for the Trigger file only. |

General considerations

On the Trigger File List

- ◆ To update a trigger record, issue the UPDATE command from the Trigger File List or the UPDATE Trigger Record Entry panel to alter the record's status and Function Options.
- ◆ If you enter UPDATE in the Action field of the Trigger File List for a specific record, the UPDATE Trigger Entry panel is displayed for that trigger record.
- ◆ If you issue UPDATE on the command line of the Trigger File List, the UPDATE Trigger Record Entry panel is displayed.
- ◆ You can issue UPDATE with the optional parameters *type*. and *sequence number*. For example, entering UPDATE ETRG. 2 on the Trigger File List will display the UPDATE Trigger Record Entry panel with the specific trigger record 00002 (automatically zero-filled) shown in the SeqNo field. This panel lets you alter the status of the specific trigger record and/or the Function Options.
- ◆ If you want to UPDATE a set of sequence numbers (SeqNo field on the Trigger File List) that correspond to a particular pattern of characters, use the wildcard character * (asterisk) to represent an indefinite number of generic characters, and ? (question mark) to represent a single generic character. For example, UPDATE ETRG. 0000* and UPDATE ETRG. 0000? are acceptable and will display the UPDATE Trigger Record Entry panel showing the first sequence number that matches the wildcard criteria. Note that the type (ETRG.) must be entered.

On the UPDATE Program Entry Panel

- ◆ To update profile information, issue the UPDATE command from the UPDATE Program Profile panel to alter a program's password, description, and status, and set the selection (Sel) fields that invoke Addendum Processing.
- ◆ For more information about the Trigger file and use of the EXECUTE command, see “Utilities” on page 389. For information about the program profile, see “Program design” on page 143.

4

Program design

This chapter describes each menu option under the Program heading on the Program Design Facility menu (the following screen illustration) including descriptions of the parameter entry panels available for the Edit, Profile, Purge, Copy, and Rename options. These options allow you to create and maintain MANTIS programs using the Full-Screen Editor and other program design functions.

```
PRGMMENU01      Program Design Facility (ACCT)      YYYY/MM/DD HH:MM:SS
===>

Please select one of the menu items below.

  Program      Component Engineering  Bind Options  Utilities
1. List        7. CEF Check          12. HPO Check 18. Audit Trail
2. Edit        8. " Compose          13. " Bind    19. Browse Audit Trail
3. Profile     9. " Decompose        14. " Unbind  20. " Prgm Profile
4. Purge       10. CREF Programs     15. SQL Check 21. Trigger List
5. Copy        11. Bill of Materials 16. " Bind    22. SQL Maint
6. Rename

000:  READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F9=RETRIEVE  F12=CANCEL ...
```

For information on using the Full-Screen Editor to create programs, see [“Using the Full-Screen Editor”](#) on page 165. For the detailed descriptions of panel fields, see [“Field descriptions”](#) on page 427.

The following table lists the Program Design options with a description and a section reference where more information can be found in this chapter:

| Option | Description | See |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| List | Displays the Program Directory List to let you select programs for editing (using the Full-Screen Editor), or to let you select programs for other actions. | “List” on page 145 |
| Edit | Starts a session with the Full-Screen Editor where you can view, create, and modify MANTIS programs. | “Edit” on page 149 |
| Profile | Displays program profile information; lets you update program description, status, and password; also lets you select addendum processing. | “Profile” on page 152 |
| Purge | Deletes a program from your directory. | “Purge” on page 158 |
| Copy | Copies the contents of a program from your library (or another library) to a program in your library, allowing you to supply program name, description, and password of the target program. | “Copy” on page 160 |
| Rename | Renames a program from your library to your library, allowing you to supply program name, description, and password of the target program. | “Rename” on page 162 |

List

The List option displays your program directory in alphabetic order by name. From this display of your directory, you can select one or more programs to be edited using the Full-Screen Editor, or you can select programs to be processed by the other actions.

When you select List, the Program Directory List is displayed as shown in the following screen illustration:

```

PRGMLIST01      Program Directory List (ACCT)                      YYYY/MM/DD HH:MM:SS
===>
Action   Name                                     Date           Time           Ver FMT Status
-----
CUST_BROWSE          YYYY/MM/DD HH:MM:SS      5 CB  ACTIVE
CUST_BROWSE@        YYYY/MM/DD HH:MM:SS      1     ACTIVE
CUST_DELETE         YYYY/MM/DD HH:MM:SS      1     ACTIVE
CUST_DELETE@       YYYY/MM/DD HH:MM:SS      1     ACTIVE
CUST_INSERT         YYYY/MM/DD HH:MM:SS      4     ACTIVE
CUST_INSERT@       YYYY/MM/DD HH:MM:SS      9     ACTIVE
CUST_MAINT          YYYY/MM/DD HH:MM:SS      2  B  ACTIVE
CUST_MAINT@        YYYY/MM/DD HH:MM:SS      7     ACTIVE

F03: MORE RECORDS FOLLOW
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

In addition to viewing a list of program names, you can enter commands on the command line (===>) of the Program Directory List. You can also enter commands for a specific program in the Action field to the left of the program Name field. In addition, you can use the PF keys to issue a command. To view the valid commands for the Program Directory List, issue PROMPT.

The program description extends to the right of the screen beyond the width of most terminals. To view the Description field, issue RIGHT and the Program Directory List will be displayed as shown in the following screen illustration:

```
PRGMLIST01      Program Directory List (ACCT)                YYYY/MM/DD HH:MM:SS
===>
Action   Name                                           Description
-----
CUST_BROWSE          CUSTOMER BROWSE
CUST_BROWSE@        CUSTOMER BROWSE - SOURCE
CUST_DELETE         CUSTOMER DELETE
CUST_DELETE@       CUSTOMER DELETE - SOURCE
CUST_INSERT         CUSTOMER INSERT
CUST_INSERT@       CUSTOMER INSERT - SOURCE
CUST_MAINT          CUSTOMER MAINTENANCE
CUST_MAINT@        CUSTOMER MAINTENANCE - SOURCE

F03: MORE RECORDS FOLLOW
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...
```

Note that Action and Name remain in their original positions. To return the original display of the Program Directory List, issue LEFT.

To return to the Program Design Facility menu, issue EXIT. To return to the MANTIS Facility Selection menu, issue MENU. To exit from MANTIS, issue LOGOFF.

For detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

Moving around the Program Directory List

To move forward in the list panel and view one full panel at a time, press your forward scroll key or issue FORWARD (or FWD).

You cannot scroll a list backward. However, you can reposition the Program Directory List at a specific location by typing a reposition value (the name of the program you want to locate or the partial name, such as CUST_BROWSE or CUST, over the current program name (highlighted) at the top of the list panel (CUST_BROWSE in the example). Delete any remaining characters from the current name and press ENTER. The list panel will redisplay beginning with the program that corresponds to your value, or the next greater name if your value cannot be located.

You can also use L (locate) on the command line of the Program Directory List, followed by a program name. For example, ==> L CUST_MAINT repositions the list panel at this program, or the next greater name if this name cannot be found. If you enter L without a program name, for example, ==> L, the Program Directory List will be repositioned at the top.

Selecting programs and components from the Program Directory List

To select a program from the Program Directory List, do one of the following:

- ◆ Enter a command in the Action field for a specific program on the list panel.
- ◆ Type a command on the command line and select one or more programs or components from the Program Directory List by entering a selection indicator (/) in the Action field that corresponds to the program(s) you want. When you press ENTER, the command is executed in sequence on each program selected.
- ◆ Type a command in the Action field and select other programs on the list panel for the same action by typing an equal sign (=) in each Action field next to the program(s) you want. The equal sign (=) must appear in Action fields below the Action field where you typed the command. Multiple selections will be processed in the order they appear on the list panel.
- ◆ Type an S (shortcut for the EDIT command) in the Action field of the program(s) you want. When you press ENTER, each program is processed in order by the Full-Screen Editor.

You can make a single selection or multiple selections from a list, but you can only select from one page of the list at a time. For example, you cannot select items from the first page, scroll forward, and then select items from the second page. If you do so, the list does an automatic refresh (like the REFRESH command) and the selections on the first page are ignored.

Edit

The Edit option starts a session with the Full-Screen Editor to allow you to create new programs and modify programs already in your library.

If you supply a new program name with the Edit action and press ENTER, an empty Full-Screen Editor panel is displayed to let you enter new lines of code. If you supply an existing program name, the program will be shown in the Full-Screen Editor to let you view and make changes.

If you do not supply a program name with the Edit action, the EDIT Program Entry panel is displayed to let you designate a single program name (for a new or existing program) or a range of program names or generic pattern (for existing programs only). In addition, you can alter the program password and set the Entry Options and Function Options to be used during your edit session. The following screen illustration shows an example of the EDIT Program Entry panel:

```

PRGMENT01E          EDIT Program Entry                      YYYY/MM/DD HH:MM:SS
===>
From
  Library . . . . ACCT
  Name . . . .
  Description .
Thru
  Name . . . .
Entry Options          Function Options          Process Statistics
Immediate? . . . . Y   Uppercase? . . . . Y   Processed . .
Confirmation? . . N   Nulls on? . . . . Y   Skipped . . .
                        Indent on? . . . . Y   Errors . . . .
                        Scroll? (P H C). . . P
000: READY
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F6=EXECUTE F7=CONFIRM ...

```

Enter a command that is valid for the EDIT Program Entry panel on the command line (==>) or press a PF key assigned to the command. To view a list of the valid commands for the EDIT Program Entry panel, issue PROMPT.

Function Options on the EDIT Program Entry panel control the way the Edit action is executed from this panel. You can change the Function Option settings for the duration of the Edit action, and when you exit from the panel, your changes will default to the original values. The following field descriptions apply to the Edit Function Options:

Uppercase?

Description *Display.* Indicates if MANTIS will treat displayed characters as uppercase or lowercase.

Consideration You can also set this option on the Full-Screen Editor Profile panel (see [“Using the Full-Screen Editor”](#) on page 165).

Nulls on?

Description *Optional.* Lets you choose whether the fields on the Full-Screen Editor screen will have trailing nulls or trailing blanks. “Nulls on?” also appears on the Full-Screen Editor Profile.

Indent on?

Description *Optional.* Determines whether MANTIS program lines are displayed on the Full-Screen Editor panel with an indented hierarchy. “Indent on?” also appears on the Full-Screen Editor Profile.

Scroll? (P H C)

Description *Optional.* Allows you to control the vertical forward and backward scrolling amount for your Full-Screen Editor screen. “Scroll? (P H C)” also appears on the Full-Screen Editor Profile.

To display the Full-Screen Editor from the EDIT Program Entry panel, supply names and options and press ENTER. The message U00: OK TO EXECUTE will be displayed. Issue EXECUTE and the Full-Screen Editor will be displayed. To bypass the message, after entering names and setting options, you can issue EXECUTE directly. For information on using the Full-Screen Editor see “[Using the Full-Screen Editor](#)” on page 165.

The Edit action allows you to view and edit programs in your user library or in another user library (if you know the program password). If the program is in another library, supply the program password in the Password field on the EDIT Program Entry panel. Note that programs edited from another user library can only be saved or replaced in your library.

Consider the following conditions for completing the From Name and Thru Name fields on the EDIT Program Entry panel:

- ◆ **New program.** Enter a single, new program name in the From Name field. Leave the Thru Name field blank.
- ◆ **Existing program.** Enter a single, existing program name in the From Name field. Leave the Thru Name field blank.
- ◆ **Range of existing program names.** Enter the beginning name in From Name and the ending name in Thru Name.
- ◆ **Generic pattern of existing program names.** Enter the generic pattern in the From Name field. Leave Thru Name blank.

If you are editing a range of programs or a generic pattern, issue the QUIT command on the command line of the Full-Screen Editor to break out of the series and return to the previous panel. If you issue END after a program in the range, the EDIT Program Entry panel will be displayed to let you confirm or skip editing of the next program in the series (unless the Entry Option “Confirmation?” is set to N for no).

If you are editing a series of existing program names, you will have to confirm (or skip) each program in the series if the “Confirmation?” Entry Option is set to Y (yes).

For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

Profile

The Profile action displays profile information about each program in your directory and provides an update function for changing program status, description, and password.

Profile also shows a program's audit attribute information, which includes the selection field (Sel) and date and time stamps. The Sel field lets you set addendum processing for specific actions. The date and time stamps reflect the last time you issued an action on the program.

If you do not supply a program name with the Profile option, the PROFILE Program Entry panel is displayed to let you designate a single program name, a range of program names, or a generic pattern of names to be processed. In addition, you can also set the Entry Options that are in effect during the Profile action. The following screen illustration is a sample of the PROFILE Program Entry panel:

```

PRGMENT01B      PROFILE Program Entry      YYYY/MM/DD HH:MM:SS
===>
From
  Library . . . ACCT
  Name . . . . CUST_BROWSE@
  Description .

Thru
  Name . . . .

Entry Options      Function Options      Process Statistics
Immediate? . . . . Y      Processed . .
Confirmation? . . . N      Skipped . . .
                               Errors . . . .

000: READY
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F6=EXECUTE F7=CONFIRM ...

```

Enter a command that is valid for the PROFILE Program Entry panel on the command line (===>) or press a PF key assigned to this command. To view a list of the valid commands for the PROFILE Program Entry panel, issue PROMPT.

The Profile action allows you to access programs in your own user library only. For the detailed descriptions of panel fields, see [“Field descriptions”](#) on page 427.

To start the Profile action, supply program names and entry options on the PROFILE Program Entry panel and press ENTER. The message U00: OK TO EXECUTE will be displayed. Issue EXECUTE and the UPDATE Program Profile panel will be displayed. To bypass the message, after entering names and setting options, you can issue EXECUTE directly.

If you are requesting profile information for a series of program names, you will have to confirm (or skip) each program in the series if the “Confirmation?” Entry Option on the PROFILE Program Entry panel is set to Y (yes).

The UPDATE Program Profile panel shows the designated program name and related profile information. You can change password, description, status, and set the selection fields for addendum processing on this update panel.

UPDATE Program Profile panel

If you supply a program name with the command PROFILE on the command line of the Program Design Facility menu, or enter PROFILE in the Action field for a specific program on a list panel, or specify a program name (or names) on the PROFILE Program Entry panel, the update panel is displayed as shown in the following screen illustration:

```

PRGMUPDT01          UPDATE Program Profile          YYYY/MM/DD HH:MM:SS
===>
Base Information
  Library . . . . . ACCT
  Name . . . . . CUST_BROWSE          Password DEPT1234
  Description . . . . . CUSTOMER BROWSE - EXECUTABLE
  Status . . . . . ACTIVE          Format . . . X          Size . . . . . 2,536
Audit Attributes
  Changed . . . . . N          YYYY/MM/DD HH:MM:SS          4          ACCT          N020
  CEF Check . . . . . N
  " Compose . . . . . N          YYYY/MM/DD HH:MM:SS          2          ACCT          N020
  " Decompose . . . . . N
  HPO Check . . . . . Y
  " Bind . . . . . Y          YYYY/MM/DD HH:MM:SS          4          ACCT          N004
  " Unbind . . . . . Y
  SQL Check . . . . . N
  " Bind . . . . . N
  " Unbind . . . . . N
  Cref . . . . . N          YYYY/MM/DD HH:MM:SS          4          ACCT          N020
  Print . . . . . Y
  Transfer Out . . . . . Y
  Transfer In . . . . . Y
F10: OK TO UPDATE
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F6=EXECUTE F9=RETRIEVE F12=CANCEL ...
    
```

Enter a command that is valid for the UPDATE Program Profile panel on the command line (===>) or press a PF key assigned to the command. To view a list of the valid commands for the UPDATE Program Profile panel, issue PROMPT.

The UPDATE Program Profile panel lets you alter a program's password, description, and status. In addition, if you want addendum processing, you can set the selection (Sel) fields to Y (yes) for individual actions.

For the detailed descriptions of panel fields, see "Field descriptions" on page 427.

To execute an action on a program, the program status must be ACTIVE. A status other than the value ACTIVE will cause the action to bypass the program and it will not be executed. However, if you prefer to bypass actions on certain programs, use the UPDATE Program Profile panel to alter the status of the programs to a value other than ACTIVE. Two actions are exceptions to this rule: Profile and Purge. Profile lets you alter the Status field at any time and Purge lets you remove a program from your directory regardless of its current status.

To update a program's description, type over the text displayed in the Description field with the new text. When you add a new description, or alter an existing one, do not use double quotes (") anywhere in the text of the description, as quotes are reserved for another use in the Program Design Facility.

If you are using the BIND or BIND OFF commands in the Full-Screen Editor to bind or unbind a program, the date and time stamps for the HPO Bind action (shown on the UPDATE Program Profile panel) are updated when the program is saved or replaced.

Although the PRINT, TRANSFERIN, and TRANSFEROUT actions are not currently supported under the Program Design Facility, the date and time (as shown on the UPDATE Program Profile panel) will be updated under the following conditions:

- ◆ If you issue PRINT from the Full-Screen Editor. Refer to the detailed description of the PRINT command in ["Using the Full-Screen Editor"](#) on page 165.
- ◆ If you execute Transfer In or Transfer Out from the MANTIS Transfer Facility. For information on using the MANTIS Transfer Facility refer to [MANTIS Facilities, OS/390, VSE/ESA](#), P39-5001.

To start the Update Profile action, you can change the Description, Password, and Status fields, set the Sel fields to Y (yes) or N (no) for individual actions (if you want addendum processing) and press ENTER. The message F10: OK TO UPDATE is displayed. To update the profile information and return to the previous panel, issue EXECUTE.

When the message F10: OK TO UPDATE is displayed, you can issue UPDATE. Your updates are confirmed, however, the UPDATE Program Entry panel remains displayed with the message F00: UPDATE SUCCESSFUL. This lets you make another update directly from this panel by typing over the Name field with another program name and pressing ENTER.

To bypass the message F10: OK TO UPDATE, make your changes and issue EXECUTE or UPDATE directly.

Addendum processing

Addendum processing is a feature of the Program Design Facility that lets you issue an action only on programs that changed since the last time that same action was issued on them.

For example, if you have a hundred source programs and you compose five, the resulting five executable (composed) programs will be replaced in your library. The date and time of each replace is tracked and recognized by the system as a change. If you want to check all programs (100 in this example) and bind only those programs that were changed by an action (Compose in this example) since the last time they were bound, this is how Addendum Processing would be invoked:

1. Set the Sel field (on the UPDATE Program Profile panel) for the HPO Bind action to Y (yes) for each program you want to bind.
2. Set "Addendum?" to Y (yes) on the BIND Program Entry panel.
3. Issue the Bind action from the BIND Program Entry panel for the 100 programs. To save time entering each program name, enter a generic pattern, such as CUST*.

Addendum Processing compares the latest change dates of the 100 programs to the bind date (these dates are shown on the UPDATE Program Profile panel) because the Sel field for HPO Bind is set to Y (yes) on the same panel. Addendum Processing then determines which of the 100 programs changed since the last time they were bound, and streamlines the bind process by binding only the five executable programs that changed as a result of the Compose, thereby saving time and resources.

To set addendum processing, follow these steps:

1. Set the Sel fields one time to Y (yes) on the UPDATE Program Profile panel for the action(s) on which you want addendum processing to occur. You do not need to set these fields more than once.



If the “Addendum?” option defaults to N (no) on the parameter entry panels for your installation, you must do Step 1 above before doing Step 2 or the “Addendum?” option will be reset to N when you exit from the parameter entry panel.

2. Set the “Addendum?” Entry Option to Y (yes) on the parameter entry panel associated with the action you selected. For example, if you set the Sel field for Compose, then set the “Addendum?” Entry Option on the COMPOSE Program Entry panel.
3. Issue the action from the parameter entry panel on one or more designated programs. The action issued will occur only on the programs that changed since the last time you issued the same action on them.

Purge

The Purge action deletes a program from your directory. For the format and detailed description of the PURGE command, see “[Program Design Facility commands](#)” on page 85.

If you do not supply a program name when you issue the Purge action, the PURGE Program Entry panel is displayed to let you designate a single program name, a range of program names, or a generic pattern of names to be processed. In addition, you can also set the Entry Options that take place during processing of the Purge. The following screen illustration shows an example of the PURGE Program Entry panel:

```

PRGMENT01B      PURGE Program Entry                      YYYY/MM/DD HH:MM:SS
===>
From
  Library . . . . ACCT
  Name . . . . CUST_BROWSE@
  Description . CUSTOMER BROWSE - SOURCE

Thru
  Name . . . . CUST_TEST@

Entry Options          Function Options          Process Statistics
Immediate? . . . . Y          Processed . .
Confirmation? . . N          Skipped . . .
                                   Errors . . . .

000: READY
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F6=EXECUTE F7=CONFIRM ...

```

Enter a command that is valid for the PURGE Program Entry panel on the command line (===>) or press a PF key assigned to the command. To view a list of the valid commands for the PURGE Program Entry panel, issue PROMPT.

Issue CONFIRM or SKIP to confirm the purge or bypass it.

To start the Purge action, complete the From and Thru fields, set the Entry Options, and press ENTER. The message U00: OK TO EXECUTE is displayed. Issue EXECUTE. A message is displayed to indicate the programs that were purged.

If you set the Entry Option “Confirmation?” to Y (yes), and press ENTER, the message U01: CONFIRM OR SKIP is displayed on the panel. This gives you the chance to issue:

SKIP Bypasses the purge and keeps the panel displayed.

CONFIRM Issues the Purge and removes the program from the MANTIS cluster. A message shows the program(s) that were purged.

For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

Copy

The Copy action lets you copy the contents of one program (in your user library or another library) to another program (in your library only).

If you enter COPY with or without a program name, the COPY Program Entry panel is displayed as shown in the following screen illustration:

```

PRGMENT201      COPY Program Entry                      YYYY/MM/DD HH:MM:SS
===>
From
  Library . . . ACCT
  Name . . . . CUST_BROWSE@                          Password :      :
  Description . CUSTOMER BROWSE - SOURCE

To
  Library . . . ACCT
  Name . . . . CUST_TEST@                            Password :      :
  Description . CUSTOMER TEST - SOURCE

Entry Options          Function Options          Process Statistics
Immediate? . . . . Y      Replace if found? . . N  Processed . .
Confirmation? . . . N                                         Replaced . . .
                                                                Skipped . . .
                                                                Errors . . . .

000: READY
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F6=EXECUTE F7=CONFIRM ...

```

Enter a command that is valid for the COPY Program Entry panel on the command line (===>) or press a PF key assigned to the command. To view a list of the valid commands for the COPY Program Entry panel, issue PROMPT.

The single Function Option on the COPY Program Entry panel controls the way the Copy action is executed from this panel. You can change this Function Option setting for the duration of the Copy action, and when you exit from the panel, your changes will default to the original value.

The following field description applies to the Copy Function Option:

Replace if found?

Description *Optional.* Lets you choose whether to protect an existing program by the same name in your library or to replace it as a result of the Copy action.

For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

To copy a single program (from your library or another user’s library), type a single program name in the From Name field. Then type a target program name (your library only) in the To Name field. Press ENTER (or issue EXECUTE) to copy the program.

If you copy from another user’s library, supply the program password in the From Password field on this panel. You can also supply a new description and a password for the copied program.

To start the Copy action, supply the From Name and To Name, and set Entry and Function Options and press ENTER. The message U00: OK TO EXECUTE will be displayed. Issue EXECUTE. The copied program name(s) are displayed at the bottom of the panel. To bypass the U00 message after entering names and setting options, you can issue EXECUTE directly.

If you are copying a series of program names, you will have to confirm (or skip) each program in the series if the “Confirmation?” Entry Option on the COPY Program Entry panel is set to Y (yes).

You cannot copy from a program with an inactive status (status other than ACTIVE). You cannot copy to a program name that is inactive (status other ACTIVE), even if the Function Option “Replace if found?” is set to Y (yes).

You cannot use the wildcard characters (* and ?) to rename a series of program names from the COPY Program Entry panel. If you attempt to enter a generic pattern on this panel, MANTIS will disable the action by automatically setting the “Immediate?” and “Confirmation?” Entry Options to Y (yes) and protect the fields.

Rename

The Rename action allows you to change the name of a program in your own user library, and also lets you change the program's description and password.

If you enter RENAME with or without a program name, the RENAME Program Entry panel is displayed as shown in the following screen illustration:

```

PRGMENT301      RENAME Program Entry                      YYYY/MM/DD HH:MM:SS
===>
From
  Library . . . . ACCT
  Name . . . . CUST_BROWSE@
  Description . . . . CUSTOMER BROWSE - SOURCE

To
  Name . . . . CUST_TEST@                                Password :
  Description . . . . CUSTOMER TEST - SOURCE

Entry Options          Function Options          Process Statistics
Immediate? . . . . Y      Replace if found? . . . . N  Processed . .
Confirmation? . . . . N                                     Replaced . .
                                                         Skipped . .
                                                         Errors . . . .

000: READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F6=EXECUTE  F7=CONFIRM ...

```

Enter a command that is valid for the RENAME Program Entry panel on the command line (===>) or press a PF key assigned to the command. To view a list of the valid commands for the RENAME Program Entry panel, issue PROMPT.

The single Function Option on the RENAME Program Entry panel controls the way the RENAME action is executed from this panel. You can change this Function Option setting for the duration of the Rename action, and when you exit from the panel, your changes will default to the original value.

The following field description applies to the Rename Function Option:

Replace if found?

Description *Optional.* Determines whether the target program name you designate for the Rename action will overlay (replace) a program already in your library with the same name.

For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

To rename a single program (from your library), type a single program name in the From Name field. Then type a target program name (to your library only) in the To Name field. Press ENTER (or issue EXECUTE) to rename the program.

To start the Rename action, supply the From Name and To Name, and set Entry Options and Function Option and press ENTER. The message U00: OK TO EXECUTE will be displayed. Issue EXECUTE. The renamed program name(s) are displayed at the bottom of the panel. To bypass the U00 message after entering names and setting options, you can issue EXECUTE directly.

If you are renaming a series of programs, you will have to confirm (or skip) each program in the series if the “Confirmation?” Entry Option on the RENAME Program Entry panel is set to Y (yes).

You cannot rename from a program with an inactive status (status other than ACTIVE). You cannot rename to a program name that is inactive (status other than ACTIVE), even if the Function Option “Replace if found?” is set to Y (yes).

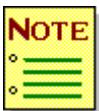
You cannot use the wildcard characters (* and ?) to rename a series of program names on the RENAME Program Entry panel. If you attempt to enter a generic pattern on this panel, MANTIS will automatically set the “Immediate?” and “Confirmation?” Entry Options to Y (yes) and protect the fields.

In order to confirm the RENAME action, you need to supply the To Name for each From Name. Because you will have to confirm the RENAME action each time by supplying a To Name, Rename Trigger Records using the wildcard characters should not be processed in batch.

5

Using the Full-Screen Editor

The Full-Screen Editor (FSE) provides facilities for creating and modifying MANTIS programs using the logical screen support of MANTIS (LTI—Logical Terminal Interface). This chapter explains how to create and maintain your MANTIS programs using the Full-Screen Editor.



It is not recommended that you use the Line Editor with the Program Design Facility. Because the Line Editor does not update the Extended Entity Profile Record (EEPR) of the program, which are needed in order for the Program Design Facility to function properly, when you use the SAVE, REPLACE, DELETE, and BIND commands with the Line Editor, program integrity can be affected. Each time you access the Line Editor, you will receive a message warning you of this possibility. If you opt to use the Line Editor, see ["Trigger file JCL"](#) on page 519 for access instructions and usage information.

Accessing the Full Screen Editor

To access the FSE, select the Design A Program option from the MANTIS Facility Selection Menu (see “[General overview of the Program Design Facility](#)” on page 24). MANTIS returns the Program Design Facility menu shown in the following screen illustration. Select the Edit option under the Program heading and press ENTER. For information on the various ways to select the Edit option from the Program Design Facility menu, see “[Creating a program](#)” on page 168.

```
PRGMMENU01      Program Design Facility (ACCT)                YYYY/MM/DD HH:MM:SS
===>

Please select one of the menu items below.

  Program      Component Engineering  Bind Options  Utilities

1. List        7. CEF Check                    12. HPO Check 18. Audit Trail
2. Edit        8. " Compose                      13. " Bind   19. Browse Audit Trail
3. Profile     9. " Decompose                    14. " Unbind 20. " Prgm Profile
4. Purge       10. CREF Programs                 15. SQL Check 21. Trigger List
5. Copy        11. Bill of Materials             16. " Bind   22. SQL Maint
6. Rename      17. " Unbind

000:  READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F9=RETRIEVE  F12=CANCEL ...
```

Once you enter the FSE you can create, modify and execute MANTIS programs. This chapter provides information on all of these topics and includes command descriptions for FSE commands.

The following table provides a brief description of and section references for the topics discussed in this chapter:

| Topic | Description | Section |
|--------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------|
| Creating a program | Provides information on creating a new program. | “Creating a program” on page 168 |
| Modifying a program | Explains how to select existing programs and modify them. | “Modifying a program” on page 176 |
| Using FSE commands | Provides a description of primary and line commands and explains how commands are entered and used. | “Using FSE commands” on page 184 |
| Full-Screen edit profile | Explains how to define PF keys and edit mode settings for the current edit session. | “Full-Screen Edit Profile” on page 195 |
| Exiting from FSE | Tells you how to exit from the edit session. | “Exiting from the FSE” on page 198 |
| FSE programming considerations | Provides advanced programming tips. | “FSE programming considerations” on page 199 |
| Editing commands | Provides detailed descriptions and syntax for all FSE commands. | “Editing commands” on page 203 |

Creating a program

When you select the Edit option from the Program Design Facility menu (see “[Accessing the Full Screen Editor](#)” on page 166), you invoke the FSE which allows you to create a new MANTIS program or modify an existing one. You can select the Edit option without or with a new program name. The following sections describe these two choices.

Selecting edit without a new program name

If you select the Edit option without a new program name, a parameter entry panel will be displayed to allow you to supply the name, as well as to set options that will be used during your edit session with the FSE. To select the Edit option from the Program Design Facility menu without a new program name, do one of the following:

- ◆ Enter the Edit option number on the command line (===>) or in the Selection field (_).
- ◆ Enter the EDIT command on the command line, for example, ===> EDIT.

In both cases, the EDIT Program Entry panel will be displayed, as shown in the following screen illustration, to let you designate a single, new program name and to set Entry and Function options that will be in effect for the duration of your session with the FSE:

```

PRGMENT101E      EDIT Program Entry                      YYYY/MM/DD HH:MM:SS
===>
From
  Library . . .   ACCT
  Name . . . .
  Description .

Thru
  Name . . . .

Entry Options      Function Options      Process Statistics
Immediate? . . . . Y      Uppercase? . . . . Y      Processed . .
Confirmation? . . N      Nulls on? . . . . Y      Skipped . . .
                          Indent on? . . . . Y      Errors . . . .
                          Scroll? (P H C). . . P

000: READY
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F6=EXECUTE F7=CONFIRM ...

```

Entry Options and Function Options on the EDIT Program Entry panel control the way the Edit action is executed from this panel. You can change the settings of these options, but when you exit from the EDIT Program Entry screen the changed settings default to their original values.

The Edit option, as shown on the EDIT Program Entry panel, allows you to edit programs in your user library or another user's library (if you know the program password). If the program is in another user's library, supply the program password in the Password field on this panel. Note that if any programs are edited in another user's library, you cannot replace them in that library—programs must be replaced in your own library. In addition, only one new program name can be designated in the From Name field of the EDIT Program Entry panel. Leave the Thru Name field blank.

To view a list of commands that are valid for the EDIT Program Entry panel, enter the command PROMPT on the command line (===>), or press a function key assigned to PROMPT. For information on using Prompt, see “Using the Program Design Facility” on page 31.

The following field descriptions apply to the EDIT Program Entry panel:

From Library

Description *Required.* Displays your sign-on library, but you can type over it with another user’s library to access a program for the Edit option.

From Name

Description *Required.* Names the single, new program you want to create, or an existing program that you want to edit.

From Password

Description *Required* to access another user library. *Optional* to access your own library. Allows you to specify the program password of the From Program (if different than the sign-on password).

From Description

Description *Optional.* Allows you to enter a Description for a new program.

Thru Name

Description *Conditional.* Names the ending program in a range of programs.

Consideration Leave blank for a new program.

Immediate?

| | |
|--------------------|-------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> Entry Option. Determines if the Edit will be executed immediately. |
| Default | Y |
| Options | Immediate=Y (Written to the Trigger file.) Immediate=N |

Confirmation?

| | |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> Entry Option. Forces a confirmation message if you are editing a single program or an existing range of program names. |
| Default | N (when processing a range, default if Y) |

Uppercase?

| | |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> Function Option. Indicates whether MANTIS will treat characters displayed in the Full-Screen Editor as uppercase or lowercase. |
| Default | Y (Yes) |

Considerations

- ◆ If you set Uppercase to Y (default), MANTIS will translate all entries to uppercase.
- ◆ If you set Uppercase to N (No), MANTIS interprets anything within double quotes as a literal string and will translate it as it is entered.
- ◆ Anything entered in single quotes is interpreted as a MANTIS statement or part of a statement and will be translated to uppercase.
- ◆ If Uppercase is set to N (No), special considerations apply when you are using the FIND, CHANGE, RCHANGE, and RFIND commands. See the individual command Descriptions in “[Editing commands](#)” on page 203 for detailed information.

Nulls on?

| | |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> Function Option. Lets you choose whether the fields on the Full-Screen Editor panel will have trailing nulls or trailing blanks. |
| Default | Y |

Indent on?

| | |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> Function Option. Determines whether MANTIS program lines are displayed on the Full-Screen Editor panel with an indented hierarchy. |
| Default | Y |

Scroll? (P H C)

| | |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> Function Option. Controls the vertical forward and backward scrolling amount for your Full-Screen Editor panel. |
| Default | P |
| Options | P Scrolls a full page at a time. H Scrolls a half page at a time. C Repositions the screen from the program line that contains the cursor. |

Processed

| | |
|--------------------|--------------------------------------------------------------------------------------|
| Description | <i>Display.</i> Indicates the number of programs successfully processed by the Edit. |
|--------------------|--------------------------------------------------------------------------------------|

Skipped

| | |
|--------------------|-----------------------------------------------------------------------|
| Description | <i>Display.</i> Shows the number of programs skipped during the Edit. |
|--------------------|-----------------------------------------------------------------------|

Errors

| | |
|--------------------|---------------------------------------------------------------------------------------|
| Description | <i>Display.</i> Indicates the number of error conditions encountered during the Edit. |
|--------------------|---------------------------------------------------------------------------------------|

In addition to the fields described, the EDIT Program Entry panel includes a message line (to display MANTIS messages) and a function key line (to display available function key settings). See “Using the Program Design Facility” on page 31 for more information on these areas.

After typing the program name, Entry Options, and Function Options, press ENTER. The message U00: OK TO EXECUTE will be displayed at the bottom of the panel. Press the EXECUTE key (or enter the EXECUTE command on the command line) to display an empty FSE work area. You can bypass pressing ENTER and press EXECUTE (or enter the EXECUTE command) directly after typing the program name and setting options. For more information about the Edit option and the EDIT Program Entry panel, see “Program design” on page 143.

Selecting Edit with a new program name

If you select the Edit option with a new program name, the FSE work area is displayed. The system default values for the Entry and Function Options will be used.

To select the Edit option from the Program Design Facility menu with a new program name, do one of the following:

- ◆ Enter the Edit option number on the command line (===>), followed by the new program name. For example, enter 2 NEW_PROGRAM.
- ◆ Enter the EDIT command on the command line, followed by the new program name. For example, enter EDIT NEW_PROGRAM.

SCROLL

Description Shows the vertical scrolling amount (full page, half page, or from the cursor). Full page (PAGE) scrolls a complete panel at a time; half page (HALF) scrolls one half page at a time; cursor (CUR) repositions the panel from the program line that contains the cursor.

Description Displays sequence numbers for program lines (initially single quotes for new programs) and provides space for entering line commands.

Consideration The program display area displays lines of a program up to a limit determined by the terminal type. Each line can be up to 254 characters in length.

To write a new program, enter your program statements next to the single quotes (located in the Line Number field). Do not enter line numbers. Use the arrow or tab keys to move the cursor from one line to the next. When you fill the panel, either press ENTER to display the next blank line or use the I (insert) line command to open more blank lines.

When you press ENTER, MANTIS assigns line numbers to the line(s) you entered and deletes the extra blank lines on the panel. You can also insert one line at a time from the command line by entering a new line number and text. When you press ENTER, MANTIS adds the line to your program.

For more information about FSE primary and line commands, see “[FSE programming considerations](#)” on page 199.

Modifying a program

The Edit option also invokes the FSE to allow you to modify an existing MANTIS program on your directory. You can select the Edit option without or with an existing program name. The following sections describe these two choices.

Selecting Edit without an existing program name

If you do not remember the name of the program you want to modify, you can view and scroll your program directory to select a program to edit. The List option on the Program Design Facility menu (see “[Accessing the Full Screen Editor](#)” on page 166) will display your directory in one of these ways:

- ◆ Enter the List option number on the command line (===>) or in the Selection field (_).
- ◆ Enter the LIST command on the command line, for example, ===> LIST.
- ◆ Select and position your program directory before you view it by entering the LIST command (or its option number), a space, and a text string on the command line of the Program Design Facility menu panel. This positions the directory at the named program. For example, ===> LIST CUST_BROWSE will display this program at the top of the directory list.

The following screen illustration shows a sample program directory on the Program Directory List:

```

PRGMLIST01          Program Directory List (ACCT)          YYYY/MM/DD HH:MM:SS
===>
Action   Name           Date           Time           Ver FMT Status
-----
CUST_BROWSE          YYYY/MM/DD HH:MM:SS    5  B  ACTIVE
CUST_BROWSE@        YYYY/MM/DD HH:MM:SS    3  C  ACTIVE
CUST_DELETE         YYYY/MM/DD HH:MM:SS    7           ACTIVE
CUST_DELETE@        YYYY/MM/DD HH:MM:SS    6           ACTIVE
CUST_INSERT         YYYY/MM/SS HH:MM:SS    4           ACTIVE
CUST_INSERT@        YYYY/MM/SS HH:MM:SS   10           ACTIVE
CUST_MAINT          YYYY/MM/DD HH:MM:SS    7  B  ACTIVE
CUST_MAINT@         YYYY/MM/DD HH:MM:SS    7           ACTIVE

```

F03: MORE RECORDS FOLLOW

F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F8=FWD F9=RETRIEVE ...

To scroll through the program directory, or to reposition it, do one of the following:

- ◆ Press the forward scroll key to view the next page of the directory.
- ◆ Enter the commands LEFT or RIGHT (or LEFT *n* or RIGHT *n*) to scroll and display the Description field that appears to the right beyond the width of most terminal screens.
- ◆ Reposition the list at a specific location by typing a “repoint” value (the name of the program you want to locate or the root of that name) over the current program name at the top of the list (e.g., CUST_BROWSE in the preceding screen illustration). Use the ERASE EOF key or space bar to clear any remaining characters from the current name and press ENTER. The list will redisplay beginning with the program that corresponds to your repoint value, or the next greater name if your value cannot be found.
- ◆ You can also use LOCATE (or L) on the command line, followed by a program name. For example, ==> L CUST_MAINT repositions the list at this program, or the next greater name if this name cannot be found. If you enter LOCATE without a program name, for example, ==> L, the list will be repositioned at the top.

To select a specific program from the Program Directory List:

- ◆ Enter the command EDIT or S (select) in the Action field corresponding to the program you want from the list. Press ENTER and the FSE work area will be displayed showing that program.

To select multiple programs from the Program Directory List at one time, do one of the following:

- ◆ Type the command EDIT on the command line and type a slash (/) character in the Action field of every program you want. Press ENTER. Each program selected with the (/) will be loaded in sequence into the FSE work area. After you exit from one program, the next program in the selected series will be displayed.
- ◆ Leave the command line blank, type the command EDIT in the Action field of the first program you want from the list, and type an equal sign (=) in the Action field of every additional program you want. The equal sign refers to the EDIT command and must be entered in Action fields following the EDIT command. Press ENTER. Each program marked with the EDIT command or the equal sign (=) will be loaded in sequence into the FSE work area. After exiting from one program, the next one will be displayed.
- ◆ Leave the command line blank and type S in the Action field of all programs you want from the list. Press ENTER. Each program selected with the S will be loaded in sequence into the FSE work area.
- ◆ Leave the command line blank, type S in the Action field of the first program you want from the list, and type an equal sign (=) in the Action field of every additional program you want, as described directly above. Press ENTER. Each program selected with the S or the equal sign (=) will be loaded in sequence into the FSE work area. After exiting from one program, the next one will be displayed.

The following field descriptions apply to the Program Directory List:

Screen ID

Description *Display.* Screen identifier. "PRGMLIST01" for the Program Directory List.

Title

Description *Display.* Screen Name. "Program Directory List (XXX)" where XXX is your sign-on library name.

Date/Time

Description *Display.* Indicates the current date and time in the upper right corner of the screen.

===>

Description *Optional.* command line. Provides a space in which to enter commands that pertain to the directory.

Action

Description *Optional.* Contains the space where MANTIS commands can be entered (nine spaces).

Name

Description *Optional.* Program name (up to 32 characters in length). Only the first name at the top of the list can be typed over to reposition the list.

Date

Description *Display.* Date when the program was last modified.

Time

Description *Display.* Time when the program was last modified.

Ver

Description *Display.* The Version field shows the number of times the program was changed. Each saved or replaced change to a program increments the version number by 1.

FMT

Description *Display.* Bound/Composed status. Tells if a program is composed (position 1), HPO-bound (position 2), or SQL-bound (position 3).

Options

Position 1: C If program was created via a Compose action
 b Not composed

Position 2: X HPO bound with old release of MANTIS
 I Program is illogical
 B Program is HPO bound with this release of MANTIS
 b None of the above

Position 3: S Program is static SQL
 E Program is extended dynamic SQL
 D Program is dynamic SQL
 b Program does not have SQL statements

Status

Description *Display.* Indicates the program status as ACTIVE (or any other value that represents inactive).

Description

Description *Display.* Displays the text Description of the program. If the Description field extends beyond the width of your terminal screen, enter the RIGHT command on the command line.

Selecting Edit with an existing program name

If you select the Edit option with an existing program name, the FSE work area will be displayed and the system default values for the Entry and Function Options will be used.

If you know the name of the program(s) you want to modify, you can select the Edit option in one of these ways:

- ◆ From the Program Design Facility Menu:
 - Enter the Edit option number on the command line of the Program Design Facility menu (see “[Accessing the Program Design Facility](#)” on page 25), a space, and the existing program name, for example `===> 2 OLD_PROGRAM`.
 - Enter the EDIT command on the command line of the Program Design Facility menu (see “[Accessing the Full Screen Editor](#)” on page 166), a space, and the existing program name, for example, `===>EDIT OLD_PROGRAM`.
- ◆ From the EDIT Program Entry Screen:
 - Enter a single, existing program name in the From Name field of the EDIT Program Entry panel (see “[Selecting edit without a new program name](#)” on page 168). Leave the Thru Name field blank.
 - Enter a beginning program name (in the From Name field) and an ending program name (in the Thru Name field) of the EDIT Program Entry panel (see “[Selecting edit without a new program name](#)” on page 168). This method lets you edit a range of program names, for example CUST_1 through CUST_12.
 - Enter a generic pattern for a program name (e.g., CUST* for all programs in your library that begin with the CUST prefix), and enter this pattern in the From Name field of the EDIT Program Entry screen (see “[Selecting edit without a new program name](#)” on page 168).

In the above cases, the FSE work area will be displayed to allow you to modify existing program lines.

If you are editing a range of programs or a generic pattern of programs in the Full-Screen Editor, issue the QUIT command at the command line of the FSE work area to break out of the range or pattern and return to the EDIT Program Entry panel.

A program range is a block of program names designated for processing from a parameter entry screen, like the EDIT Program Entry panel shown. To edit a range of program names from your directory, supply the starting name, such as CUST_BROWSE, in the From Name field. Supply the ending name, such as CUST_UPDATE in the Thru Name field. All programs from CUST_BROWSE through CUST_UPDATE will then be processed when ENTER is pressed.

A generic pattern is a partial program name that uses the wildcard characters of the asterisk (*) to represent an indefinite number of characters and the question mark (?) to represent a single character, for example CUST* and CUS?. The partial program name with wildcard characters is supplied in the From Name field shown below. When you press ENTER, the individual programs that match the selection criteria of the generic pattern are processed. For example, CUST_BROWSE and CUST_UPDATE will be processed if the generic pattern CUST* is designated.

To modify the program, use the I (insert) line command if you want to add more lines. You can also insert one line at a time from the command line by entering a new line number and text. When you press ENTER, MANTIS adds the line to your program.

After editing and replacing your program in the FSE work area, you can issue the LOAD command on the command line to call in another program to edit. If you supply a range of program names or a generic pattern on the EDIT Program Entry panel, the first program in that series is displayed for editing. When you exit from FSE, the next program in order is displayed, and so forth. Enter the command QUIT from the Full-Screen Editor to cancel editing the range or generic pattern and return to the EDIT Program Entry panel.

Using FSE commands

Once you have selected an existing program to be edited and the FSE work area is displayed, modify your program by entering FSE commands. FSE offers two types of commands:

- ◆ **Primary commands.** Include global editing commands (FIND, CHANGE, etc.). You can also enter MANTIS immediate-mode commands and functions (RUN, SHOW) on the command line.
- ◆ **Line commands.** Affect the lines on which they appear. Line commands include editing commands (move, copy, etc.) as well as destination commands (after, before, etc.).

Enter commands in either uppercase or lowercase letters. MANTIS automatically translates entered characters into uppercase format unless configured by Master User not to do so.

FSE commands are processed in the following order:

1. Line commands are executed first in this order: DELETE, SELECT, REPEAT, COPY, MOVE, INSERT.
2. Primary commands are executed after line commands.
3. Primary commands issued from PF keys (e.g., scrolling, END, REPLACE) are executed last.
4. The SELECT line command is a special line command which cannot be combined with a primary command.

Overviews of primary and line commands are presented in the following sections. The syntax of the editing commands (along with their abbreviations) is presented in “[FSE programming considerations](#)” on page 199. You can also assign some of these commands to PF keys using the Full-Screen Edit Profile (see “[Full-Screen Edit Profile](#)” on page 195 for details).

If you make a mistake while typing the text of a program line, move the cursor to the beginning of the line and press the ERASE EOF key. When you press ENTER, the original line will be returned.

Primary commands

Once inside the FSE, enter primary commands on the command line at the top of the FSE panel. You can enter MANTIS immediate-mode commands and functions as well as global editing commands.

Use the UP and DOWN commands to scroll the terminal window by a half or full page, or by any number of lines. You can use the SCROLL field to change the scrolling amount (to half a page, a full page, or to scroll the line where the cursor is positioned to the top of the screen) for a single editing session. Simply overtype the values that currently appear in this field. Use the RIGHT and LEFT commands to move your panel to display program lines that run beyond the width of terminal screens. (A MANTIS program line can have up to 254 characters.)

If you want to retrieve a new program from your directory, use the LOAD command. MANTIS fetches and lists the new program, starting with the first statement. You can also enter the LIST (or LOCATE or TOP) command without a specific line number to display your program from the beginning. Renumber the lines of the program you are editing with the SEQUENCE command.

Use the FIND (abbreviated F) command to find and display a line with a particular character string. FIND searches for the next occurrence of the character string starting at the top of the page (if the cursor is on the command line) or at the cursor position (if the cursor is within the data portion of the display). You can enter parameters to control the direction and scope of the search (previous occurrence, last occurrence, first occurrence, etc.). The RFIND command repeats the last FIND that you entered. You may want to enter RFIND as a PF key so you can avoid moving the cursor to the command line to enter the command, then repositioning the cursor to start the search. The following example illustrates the FIND command:

```

EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===> F MAP
***** ***** START OF PROGRAM *****
00010 ENTRY INDEX
00020 .FILE RECORD("INDEX", "SERENDIPITY")
00030 .SCREEN MAP("INDEX")          <== The cursor is positioned
00040 .WHILE RECORD<>"END"         on the first character
00050 ..CONVERSE MAP              of the text string MAP
00060 .END                        and the line is
00070 .STOP                       highlighted.
00080 EXIT
***** ***** END OF PROGRAM *****

```



If Uppercase is set to N (No) on the EDIT Program Entry panel, or on the Full-Screen Edit Profile panel, there are special consideration for using the FIND or RFIND commands. See the detailed command descriptions in [“Editing commands”](#) on page 203 for more information.

Use the CHANGE command (abbreviation C) to find and change one or more occurrences of a character string in the program that you are editing. You can enter parameters to control the direction and scope of the search (e.g., previous occurrence, all occurrences, and so forth). The RCHANGE command repeats the last CHANGE command that you entered. (You can use the RFIND command after a CHANGE command to find the next occurrence of a particular character string.) When you use the CHANGE and RCHANGE commands, MANTIS displays a message indicating the results of your action. The following example shows the program before and after you press ENTER:

```

EDIT - EXAMPLES:CUST_ENTRY
COMMAND ==> C MAP SCREEN1
***** START OF PROGRAM *****
00010 ENTRY INDEX
00020 .FILE RECORD("INDEX", "SERENDIPITY")
30030 .SCREEN MAP("INDEX")
00040 .WHILE RECORD<>"END"
00050 ..CONVERSE MAP
00060 .END
00070 EXIT
***** END OF PROGRAM *****

EDIT - 1 OCCURRENCE OF CHARS 'MAP' CHANGED
COMMAND ==>
***** START OF PROGRAM *****
00010 ENTRY INDEX
00020 .FILE RECORD("INDEX", "SERENDIPITY")
00030 .SCREEN SCREEN1("INDEX")           <== cursor and line
00040 .WHILE RECORD<>"END"               are highlighted
00050 ..CONVERSE MAP
00060 .END
00070 EXIT
***** END OF PROGRAM *****

```



If Uppercase is set to N (No) on the EDIT Program Entry panel, or to OFF on the Full-Screen Edit Profile panel, there are special consideration for using the CHANGE or RCHANGE commands. See the detailed command descriptions in “[Editing commands](#)” on page 203 for more information.

The COPY command allows you to copy one or more lines within a program or from another program into the program that you are editing. You can delete lines within a program using the ERASE command (or by typing the line number on the command line and pressing ENTER). You can also delete an entire program from your library using the PURGE command. Note that if you do not supply a program name with the PURGE command, the program that is currently in the work area is taken as the default program, and is deleted from your library (but not from the FSE work area until you exit or load a new program).

When you are finished modifying your program, the SAVE command copies a new program currently in your work area to your library. The REPLACE command replaces a program in your library with the program currently in your work area. You can also save modifications with the commands END, MENU, and LOGOFF.

You can stack programming mode commands on the command line if you separate them with colons. For example, you can enter LOAD "PROGRAM":RUN. MANTIS will fetch PROGRAM from the library and run it.

If MANTIS detects a syntax error when you press ENTER, it does one of the following:

| Error detected | MANTIS does this |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Syntax error in a primary, MANTIS, or line command | Displays a full error message in the Title/Message field. |
| Syntax error in a MANTIS statement | Highlights the line, displays the 3-character error code in the Line Number field, and displays a message in the Title/Message field. |
| Error from a program run | Highlights the line, displays ==> in the Line Number field of the first line in error, and displays a message in the Title/Message field. |

A combination of either the ERRCODE or the HELP command with the 3-character error code displays a help prompter. For explanations and corrective actions for error messages, refer to *MANTIS Messages and Codes, OS/390, VSE/ESA*, P39-5004.

An escape character (<) is also provided to distinguish between FSE primary commands and MANTIS immediate-mode commands, but only in cases where ambiguity exists. For example, the FSE command RESET cancels all pending primary and line commands. Precede the RESET command with the escape character (<RESET) to indicate the MANTIS RESET command (backs out a Logical Unit of Work—LUW).

The MANTIS intermediate command LET can be omitted for variable assignments executed on the command line when there is no ambiguity between the variable name and an FSE primary command. Certain variable names, such as LOCK, will cause ambiguity and in those cases LET must be entered, otherwise the value will not be assigned to the variable and errors may occur.

When issued, certain primary commands update external MANTIS files with current change control information—the date and time stamping that is used throughout the Program Design Facility to track and record program activity. These commands are: BIND, BIND OFF, END, PURGE, REPLACE, SAVE, MENU, and LOGOFF.

Line commands

Line commands are editing commands which you enter directly on the line you want to modify. Type directly over the sequence number. You can enter any type of editing command in uppercase or lowercase letters.

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** START OF PROGRAM *****
00040 .WHILE MAP<>"CANCEL"
d2    ..ERROR=FALSE
00060 ..DO VALIDATE_INFO
00070 ..IF ERROR=FALSE
00080 ...INSERT REC
00090 ...CLEAR MAP
00100 ..END
00110 ..CONVERSE MAP
00120 .END
00130 .CHAIN"MENU_PROGRAM"
00140 EXIT
***** END OF PROGRAM *****
```

Line commands include I (insert one or more lines); D (delete one or more lines); R (repeat one or more lines one or more times); C (copy one or more lines); M (move one or more lines); S (select *n*-level editing of a component from a source program currently being edited); and the destination line commands A, B, and O.

Some line commands identify a single line and have a single form. For example, the line command "a" indicates that you want to copy or move data after a specific line. Others can have up to three different forms:

- d Deletes a single line.
- d3 Deletes three consecutive lines starting at the line where the command was entered.
- dd Deletes a block of lines. Enter dd (on the first and last lines) to designate the first and last lines of the block.

The following rules apply when you enter line commands:

- ◆ Any trailing characters that are not changed are ignored. For example, if you enter the line command d2 over line 02000, MANTIS assumes that a single d was entered, ignoring the 2. To delete the two lines, simply add a blank between the 2 and the final two zeroes (e.g., d2 00).
- ◆ Leading numeric and blank characters are ignored. For example, if you enter d2 starting in the second position of line 02000, MANTIS ignores the leading zero (e.g., 0d200).

The following example shows several ways to enter the d2 command:

```

EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** START OF PROGRAM *****
00040 .WHILE MAP<>"CANCEL"
d2    ..ERROR=FALSE
00060 ..DO VALIDATE_INFO
d 2   ..IF ERROR=FALSE
00080 ...INSERT REC
00090 ...CLEAR MAP
d2100 ..END
00110 ..CONVERSE MAP
d2220 ..END
00130 .CHAIN"MENU_PROGRAM"
0d240 EXIT
***** END OF PROGRAM *****

```

You can enter any number of line commands at one time provided that they are unambiguous and do not overlap (that is, one command for one line):

```

EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** ***** START OF PROGRAM *****
00040 .WHILE MAP<>"CANCEL"
m 050 ..ERROR=FALSE           Move Line 50 after Line 70.
00060 ..DO VALIDATE_INFO
a 070 ..IF ERROR=FALSE
00080 ...INSERT REC
d2 90 ...CLEAR MAP           Delete Lines 90 and 100.
00100 ..END
r3 ...CONVERSE MAP         Repeat Line 110 3 times.
00120 .END
00130 .CHAIN"MENU_PROGRAM"
00140 EXIT
***** ***** END OF PROGRAM *****

```

All three operations are done at one time when you press ENTER.

The example below illustrates invalid entries:

```

EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** ***** START OF PROGRAM *****
00040 .WHILE MAP<>"CANCEL"
m 050 ..ERROR=FALSE
00060 ..DO VALIDATE_INFO
a 070 ..IF ERROR=FALSE           Two a line commands are ambiguous.
a0080 ...INSERT REC             Where should Line 50 be moved?
00090 ...CLEAR MAP
00100 ..END
dd 10 ...CONVERSE MAP
r3 .END                          r3 is on a line that is part of a
00130 .CHAIN"MENU_PROGRAM"      block of lines that will be deleted.
dd 40 .STOP
00150 EXIT
***** ***** END OF PROGRAM *****

```

To correct an error or to remove a line command that is still part of the display, simply erase the line number field. You can also use the RESET primary command to clear pending line commands.

The S (select) line command allows a component to be selected for editing during a top-level edit session with a source or executable program. The S (select) line command is valid only with the COMPONENT, REPLACE, and SOURCE statements.

The following example shows how the S line command is used. Note that the at sign (@) appended to the program name being edited indicates that the program is a Component-Engineered source program.

```

EDIT --- ACCT:CUST_BROWSE@
COMMAND ===>
***** START OF PROGRAM *****
00010 ENTRY CUST_BROWSE
00020 .S@SOURCE"ACCT:CUST_BROWSE@/PASSWORD/CUSTOMER BROWSE - SOURCE"
00030 .REPLACE"ACCT:CUST_BROWSE/PASSWORD/CUSTOMER BROWSE - EXECUTABLE"
00040 .TEXT PROGRAM_ID(49):PROGRAM_ID="ACCT:CUST_BROWSE"
00050 .DO INIT_PROC
00060 .FUNCTION_TYPE=FUNC_UPDATE
00070 .DO OPEN_FILES
00080 .DO MAIN_LOGIC
00090 .DO TERMINATE_PROC
00100 EXIT
s0110 COMPONENT"ACCT:CUS_INIT/PASSWORD"
00120 COMPONENT"ACCT:CUS_INIT_HEADER/PASSWORD"
00130 COMPONENT"ACCT:CUS_OPEN_PROC/PASSWORD"
***** END OF PROGRAM *****

```

From the list of components in the source program above, the COMPONENT statement on line 110 has been selected for *n*-level editing with the S line command. When ENTER is pressed, the FSE screen displays the selected component for editing.

If you have unsaved changes in your source program, the FSE stores these changes for you until you are finished editing the component and then return to continue editing the source program.

Changes made on n -level edit are saved using the primary commands SAVE, REPLACE, END, MENU, or LOGOFF. If you use the command CANCEL (and you have unsaved changes) the FSE will prompt you to confirm this cancel with the message PLEASE CONFIRM CANCEL COMMAND. If you confirm the cancel, any unsaved changes in the component will be lost. If you issue SAVE, REPLACE, END, MENU, or LOGOFF during a second level edit session, you will be returned to the top level program, and any changes you made at the second level will be saved.

Full-Screen Edit Profile

The Full-Screen Edit Profile contains temporary information which controls your editing session. This information includes the current PF key settings and the edit mode settings. You can display the current Full-Screen Edit Profile and alter the PF key settings and edit mode settings (UPPERCASE, NULLS, INDENT, and SCROLL) to last for the duration of your current edit session. Any changes you make to these settings are not saved and will be reset to the system default values when you exit from FSE.

To change the PF key or edit mode settings, enter the PROFILE command (or PROF) on the command line of the FSE work area. A sample of the Full-Screen Edit Profile will be displayed as shown in the following screen illustration:

```

                                FULL SCREEN EDIT PROFILE
-----
PF KEYS ( 1-12 )   PF KEYS ( 13-24 )
-----
 1 HELP              13 RUN
 2 REPLACE           14 REPLACE
 3 END               15 END
 4 SEQUENCE          16 SEQUENCE
 5 RFIND             17 RFIND
 6 RCHANGE           18 RCHANGE
 7 UP                19 UP
 8 DOWN              20 DOWN
 9 TOP               21 BOT
10 LEFT 10           22 LEFT 10
11 RIGHT 10          23 RIGHT 10
12 PROFILE           24 PROFILE

UPPERCASE: YES :      NULLS: ON :      INDENT: ON :      SCROLL: PAGE:
-----
PRESS <ENTER> TO UPDATE;  <CANCEL> KEY TO CANCEL CHANGE AND EXIT
-----

```

You can assign multiple commands to a function key (stack them) by separating them with a colon (:). An example is "SEQUENCE:REPLACE" which is a useful combination of two functions that can be performed in a single key stroke.

You can supply the values for the 24 PF keys displayed, as well as values for each of the following fields.

UPPERCASE

| | |
|--------------------|-------------------------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> Indicates if data displayed in the Full-Screen Editor will be treated as uppercase or lowercase. |
| Default | YES |
| Options | YES Data will be displayed as uppercase only. NO Data will be displayed as lowercase. |

Considerations

- ◆ If you set UPPERCASE to YES (default), MANTIS will translate all entries to uppercase.
- ◆ If you set UPPERCASE to NO, MANTIS interprets anything within double quotes or behind a comment bar as a literal string and will translate it as it is entered.
- ◆ Entity names will always be translated to uppercase, for example, ACCESS REC("customer", "PASSWORD") will access the external file description CUSTOMER. Password and Descriptions are not automatically translated.
- ◆ Anything entered on the primary command line that is not in a quoted string will be translated to uppercase.
- ◆ Anything entered in single quotes is interpreted as a MANTIS statement or part of a statement and will be translated to uppercase.
- ◆ If UPPERCASE is set to NO, special considerations apply when you are using the FIND, CHANGE, RCHANGE, and RFIND commands. See the individual command descriptions in ["Editing commands"](#) on page 203 for detailed information.
- ◆ IF UPPERCASE is set to OFF, and you are using the Component Engineering commands, SOURCE, REPLACE, COMPONENT, CSIOPTNS, or CEND, the commands must be entered in uppercase mode in order to be recognized.
- ◆ If UPPERCASE is set to OFF on the Full-Screen Edit Profile, it will have no effect if ATTRIBUTE(TERMINAL) is set to UPP (which forces task level translation), or if the datastream has been translated to uppercase before it reaches MANTIS, for example, by CICS, and so on. For information on the ATTRIBUTE statement, refer to [MANTIS Language, OS/390, VSE/ESA, P39-5002](#).

NULLS

| | |
|--------------------|-----------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> Trailing nulls are provided (ON) or trailing blanks (OFF) for fields on the panel. |
| Default | ON. |

INDENT

| | |
|--------------------|------------------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> MANTIS does (ON) or does not (OFF) indent program lines which are displayed on the panel. |
| Default | ON. |

SCROLL

| | |
|--------------------|-----------------------------------------------------------|
| Description | <i>Optional.</i> Specifies the vertical scrolling amount. |
| Default | PAGE. |
| Options | PAGE Scroll by a full page. |

HALF Scroll by half page.

CUR Scroll the line forward to where cursor is currently positioned to the top of the screen, or scroll the line backward to where the cursor is positioned at the bottom of the screen.

Consideration The scroll amount is displayed in the upper right corner of the FSE work area where you can change it. You can also change the scroll amount on the Profile panel. In both cases, the changes are in effect only for the duration of your edit session.

Type over the values displayed with your own values. Press ENTER to save your changes and return to the program you were editing.

Exiting from the FSE

To exit from the FSE, enter the CANCEL, QUIT, or END command (or press a function key assigned to one of these commands). If you use CANCEL (and unsaved changes exist), MANTIS will ask you to confirm your termination with the message PLEASE CONFIRM CANCEL COMMAND displayed at the top of the work area. If you continue to use CANCEL, the changes will be lost. You can edit more program lines or enter QUIT or END, or other FSE commands.

The QUIT command allows you to directly exit from programming mode. You will lose your modifications unless you save or replace the program before exiting with QUIT. Use the END command (or a corresponding PF key) to save or replace your program and to exit from programming mode. The END command also appears as a default PF key in your Edit Profile.

To exit from the FSE, and return to the MANTIS Facility Selection menu, enter the MENU command on the command line (===>) or press a function key assigned to MENU. To exit from MANTIS directly, bypassing the MANTIS Facility Selection menu, enter the command LOGOFF on the command line (===>) or press a function key assigned to this command. The MENU and LOGOFF exit commands save any changes you made to a program.

FSE programming considerations

The following sections provide programming tips for using the FSE, including information for handling programs with a large number of lines, priority considerations for FSE commands, entering stacked commands and using multiple line commands.

Large programs

Since program line numbers cannot exceed 30000, you should avoid sequencing your program so that the highest line number is close to 30000. If, however, your program is so large that you must use large line numbers, you should note the following:

- ◆ If you try to insert lines into the program sample shown below:

```

EDIT --- TEST
COMMAND
*****
29990
29991
29992
29993
i2994    <=== insert 2 lines here
29995
29996
29997
29998
29999
30000
*****

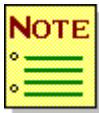
```

...MANTIS returns "LINE NUMBERS EXCEED 30000: SEQUENCE PROGRAM" and ignores the insert command. You should resequence your program and continue your editing.

- ◆ In some cases, it is possible to display line numbers greater than 30000. If, in the example above, you copy lines 29990 through 29993 after 29995, the last four lines copied will be numbered 30001, 30002, 30003, and 30004. IT IS IMPOSSIBLE TO MODIFY THESE LINES.

If you try to modify these lines, MANTIS displays “UNABLE TO UPDATE: SEQUENCE PROGRAM”, highlights lines 30001 through 30004 and adds ILN (ILLEGAL LINE NUMBER) on each line. You must sequence the program to continue.

- ◆ If your program line numbers are approaching 30000 and you are using the insert command, you may run into one of two cases:
 - If you perform a single insert (e.g., insert “*n*” lines), and the highest line number after the insert exceeds 30000, MANTIS displays “LINE NUMBERS EXCEED 30000: SEQUENCE PROGRAM”. You should sequence the program to continue.
 - If you perform multiple inserts (e.g., insert “*n*” lines in several places) that, added together, cause the line numbers to exceed 30000, MANTIS allows you to perform the inserts. When you press ENTER, MANTIS displays “UNABLE TO UPDATE: SEQUENCE PROGRAM”, highlights and adds the ILN (ILLEGAL LINE NUMBER) to those line numbers greater than 30000. IN THIS CASE YOU WILL LOSE THE LINES GREATER THAN 30000. You should sequence the program and terminate the editing session.



You should avoid sequencing your program lines by one. You may receive the “CONFLICTING LINE NUMBERS: SEQUENCE PROGRAM” message from MANTIS. This means that MANTIS has encountered a conflict between the line numbers in storage and the line numbers on the MANTIS cluster. You will lose the lines you inserted.

Priority of commands

There are two basic types of commands in the Full-Screen Editor: line commands and primary commands. When you press ENTER, MANTIS executes line commands first, then executes primary commands.

The S (SELECT) command is a special line command that cannot be used in combination with a primary command (including one issued by a PF key).

You can enter primary commands directly on the command line or you can assign certain primary commands to PF keys. If you enter a primary command on the command line and press a PF key that is a primary command, MANTIS executes the PF key and ignores the primary command on the command line. For example:

| Primary command | MANTIS executes this |
|-----------------------------------------|--------------------------------------------------------------------|
| Primary command on command line + ENTER | Primary command is executed |
| Primary command + PF key | Primary command is executed |
| Line command + Primary command + PF key | Line command is executed first, then Primary command, then PF key. |

Stacked commands

If you stack library commands (e.g., LOAD, SAVE, etc.) on the command line, you should always enclose *[user:]program-name* in double quotes (“ ”). For example:

| Command | MANTIS action |
|------------------------|-----------------------------------------------------------|
| LOAD MYPROG:SEQUENCE | MANTIS displays UNK (USER UNKNOWN) message. |
| LOAD “MYPROG”:SEQUENCE | MANTIS loads the program named “myprog” and sequences it. |

If MYPROG and SEQUENCE in the first example are valid user and program names, quotes are not needed. MANTIS interprets the colon (:) as the separator between the user and program name.

Multiple line commands

When using line commands in one I/O, it may be necessary for MANTIS to do a sequence internally as part of the processing. For this reason, using multiple line commands at once might affect program lines other than those for which the commands were intended, and unexpected results could occur.

Editing commands

This section describes the commands used with the Full-Screen Editor and the Line Editor.



Due to program profile integrity considerations, it is not recommended that you use the Line Editor with the Program Design Facility. If you opt to use the Line Editor, see [“Trigger file JCL”](#) on page 519 for instructions.

The editing commands are presented in alphabetical order and in the following format:

- Description** Provides a general description of the command.
- Format** Shows the required format of the command followed by a description of each of the parameters. Syntax notation is described in the Notation Conventions section in the front of this manual. Accepted abbreviations appear with each command.
- Considerations** Explains special limitations, considerations, or guidelines for command usage.
- Example** Provides an example usage of the command.

The editing commands are processed in the following order:

1. Line commands are executed first in this order: DELETE, SELECT, REPEAT, COPY, MOVE, INSERT.
2. Primary commands are executed after line commands.
3. Primary commands issued from PF keys (e.g., scrolling, END, REPLACE) are executed last.
4. The SELECT line command is a special command which cannot be combined with a primary command.

The following table lists the commands described in this section. The Type column indicates whether the command is a FSE Primary (P) or Line (L) command or a Line Editor (LE) command.

| Command | Type | Description |
|------------|---------------|------------------------------------------------------------------------------------------------------------|
| A (after) | FSE (L) | Used with COPY or MOVE command to indicate destination— <i>after</i> this line. |
| ALTER | LE | Modifies line(s) of code. |
| B (before) | FSE (L) | Used with COPY or MOVE command to indicate destination— <i>before</i> this line. |
| BIND | FSE (P) LE | Converts a program from unbound to bound format (BIND) or from bound to unbound format (BIND OFF). |
| BOTTOM | FSE (P) | Scrolls terminal window to the end of your program. |
| C (copy) | FSE (L) | Specifies the line(s) you want to copy. |
| CANCEL | FSE (P) | Terminates FSE without saving the program. |
| CHANGE | FSE (P) | Finds and changes the next occurrence of a string in a program. |
| COPY | FSE (P) LE | Specifies that MANTIS should copy all or part of a MANTIS program into the program currently being edited. |
| D (delete) | FSE (L) | Specifies the line(s) you want to delete. |
| DOWN | FSE (P) | Scrolls editor screen down. |
| END | FSE (P) | Saves program and terminates programming mode. |
| ERASE | FSE (P) LE | Deletes one or more program lines. |
| ERRCODE | FSE (P) | Displays text for 3-character syntax error code. |
| FIND | FSE (P) | Finds and displays the next occurrence of a string in a program. |
| HELP | FSE (P) LE | Displays a help prompt for an error code, a command, a reserved word, or online help for FSE. |
| I (insert) | FSE (L) | Inserts one or more blank lines after this line. |

| Command | Type | Description |
|---------------|---------------|----------------------------------------------------------------------------------------|
| KILL | FSE(P) LE | Terminates a program in a loop. Can be changed or disabled by the Master User. |
| LEFT <i>n</i> | FSE (P) | Scrolls editor screen to the left “ <i>n</i> ” columns. |
| LIST | FSE (P) LE | Lists all or part of the program currently in work area. |
| LOAD | FSE (P) LE | Retrieves a program from a library. |
| LOCATE | FSE (P) | Locates a specific line in the current program. |
| LOGOFF | FSE (P) | Saves FSE changes and exits from MANTIS. |
| M (move) | FSE (L) | Specifies the line(s) you want to move. |
| MENU | FSE (P) | Saves FSE changes and displays the MANTIS Facility Selection menu. |
| NEW | FSE (P) LE | Clears current work area. |
| O (overlay) | FSE (L) | Used with the COPY or the MOVE command to indicate destination— <i>over</i> this line. |
| PRINT | FSE(P) | Routes current session to printer designated in your User Profile. |
| PROFILE | FSE (P) | Displays Edit Profile. |
| PURGE | FSE (P) LE | Erases program from library. |
| QUIT | FSE(P) LE | Terminates the editing session without saving the program. |
| R (repeat) | FSE (L) | Specifies the line(s) you want to repeat one or more times. |
| RCHANGE | FSE (P) | Repeats last CHANGE command that was entered. |
| REPLACE | FSE (P) LE | Replaces program in your library with the program currently being edited. |

| Command | Type | Description |
|----------------|---------------|------------------------------------------------------------------------------------------|
| RESET | FSE (P) | Resets any pending primary commands, line commands, and commands issued from PF keys. |
| RFIND | FSE (P) | Repeats the last FIND command entered. |
| RIGHT <i>n</i> | FSE (P) | Scrolls editor screen to the right " <i>n</i> " columns. |
| RUN | FSE (P) LE | Executes program currently in work area. |
| S (select) | FSE (L) | Selects <i>n</i> -level editing for Component-Engineered source programs and components. |
| SAVE | FSE (P) LE | Copies the edited program into the library. |
| SCROLL | FSE (P) LE | Determines scrolling mode. |
| SEQUENCE | FSE (P) LE | Renumbers program lines currently in your work area. |
| TOP | FSE (P) | Scrolls terminal window to the top of your program. |
| UP | FSE (P) | Scrolls editor screen up. |
| USAGE | LE | Displays lines that contain a specified user variable. |

A (after)

Use the A command, an FSE command, with the COPY or MOVE commands to indicate that you want the copied or moved line(s) to appear after the line marked with an "A".

A

Description *Required.* Indicates that copied or moved lines will appear after the line you marked.

Format Lowercase "a" typed at the start of the line.

Considerations

- ◆ To move or copy lines within a program that you are editing, use the M or C line commands to identify what you want to move or copy. Use the A, B, or O (or OO) line commands to specify the destination.
- ◆ To copy lines from a separate MANTIS program, use the COPY primary command to identify the lines you want to copy. Specify the destination using the COPY primary command or the A or B commands.

Example

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00010 ENTRY INDEX
00020 .FILE RECORD("INDEX","SERENDIPITY")
00030 .SCREEN MAP("INDEX")
a0040 .WHILE RECORD<>"END"
00050 .END
m0060 .CONVERSE MAP
00070 .STOP
00080 EXIT
' ' '
***** *****END OF PROGRAM*****
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00010 ENTRY INDEX
00020 .FILE RECORD("INDEX","SERENDIPITY")
00030 .SCREEN MAP("INDEX")
00040 .WHILE RECORD<>"END"
00050 ..CONVERSE MAP
00060 .END
00070 .STOP
00080 EXIT
***** *****END OF PROGRAM*****
```

ALTER

Use the ALTER command, a Line Editor command, to modify lines of code (from *n1* to *n2*, inclusive) without rekeying them. MANTIS copies the specified lines, one at a time, on the bottom line of the screen for you to alter. MANTIS deletes any nested periods before displaying a line.

ALTER *n1*[,*n2*]

n1 and *n2*

Description *n1* is required, *n2* is optional. *n1* indicates the first line and *n2* the last line you want to alter.

Format *n1* and *n2* must be arithmetic expressions that evaluate to a value in the range 1–30000.

Considerations

- ◆ If you supply only *n1*, MANTIS alters only that line.
- ◆ *n1* and *n2* must be valid line numbers in your program. MANTIS uses only the integer portion of *n1*.

General considerations

- ◆ You can also alter a line by reentering it entirely. To delete a line, simply enter the line number with no data. Erasing the line number stops the ALTER command.
- ◆ When you alter more than one line, you can terminate the ALTER mode by entering any statement/command without a line number.
- ◆ You can copy a line by altering only the line number.
- ◆ In FSE, you can alter a statement by reentering it on the command line. To delete a line, you can simply enter the line number on the command line and press ENTER. Line numbers should be entered with no preceding zeroes. You can also use various line commands to modify a statement.

Example

```
LIST
10 ENTRY INDEX
20 .FILE RECORD("INDEX", "SERENDIPITY")
30 .SCREEN MAP("INDEX")
40 .WHILE RECORD<>"END"
50 ..CONVERSE MAP
60 .END
70 .STOP
80 EXIT
ALTER 40
40 WHILE RECORD<>"END"
```

B (before)

Use the B command, an FSE line command, with the COPY or MOVE commands to indicate that you want the copied or moved line(s) to appear before the line marked with "B".

B

Description *Optional.* Indicates that a moved or copied line should appear before the marked line.

Format Lowercase "b" typed on the line you want the text to appear before.

Considerations

- ◆ To move or copy lines within a program that you are editing, use the M or C line commands to identify what you want to move or copy. Use the A, B, or O (or OO) line commands to specify the destination.
- ◆ To copy lines from a separate MANTIS program, use the COPY primary command to identify the lines you want to copy. Specify the destination using the COPY primary command or the A or B line commands.

Example

```

EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00040 ENTRY INDEX
00050 .FILE RECORD("INDEX", "SERENDIPITY")
00060 .SCREEN MAP("INDEX")
00070 .GET RECORD FIRST
00080 .WHILE RECORD<>"END" AND MAP<>"CANCEL"
00090 ..CONVERSE MAP
00100 ..WHEN MAP="PF1"
b0110 ..WHEN MAP="PF2"
m 120 ...INSERT RECORD
00130 ..UPDATE RECORD
00140 ..END
00150 ..GET RECORD
00160 .END
00170 .STOP
00180 EXIT
      .
      .
      .
***** *****END OF PROGRAM*****
EDIT - EXAMPLES:CUST _ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00040 ENTRY INDEX
00050 .FILE RECORD("INDEX", "SERENDIPITY")
00060 .SCREEN MAP("INDEX")
00070 .GET RECORD FIRST
00080 .WHILE RECORD<>"END" AND MAP<>"CANCEL"
00090 ..CONVERSE MAP
00100 ..WHEN MAP="PF1"
00110 ...INSERT RECORD
00120 ..WHEN MAP="PF2"
      .
      .
      .
***** *****END OF PROGRAM*****

```

BIND

The BIND command, an FSE primary command, converts a program from unbound to bound (or bound to unbound) format.

BIND $\left[\begin{array}{c} \text{ON} \\ \text{OFF} \end{array} \right] [n]$

ON

Description *Optional.* Indicates that you want to turn the BIND option on. This is the default value.

OFF

Description *Optional.* Indicates that you want to unbind a bound program.

n

Description *Optional.* Specifies the message level you receive after issuing the BIND ON command.

Options

- 0 MANTIS “silently” binds (returns no message)
- 1 MANTIS indicates the last line that is bound
- 2 MANTIS specifies every entity that is bound

Consideration If you specify either the BIND command by itself or BIND ON, the default message level is one.

Example

```

10 FILE EMPLOYEE( "PERSONNEL:EMPLOYEES" , "PERSONNEL" )
20 FILE DEPT( "PERSONNEL:DEPARTMENTS" , "PERSONNEL" , PREFIX )
30 FILE SKILLS( "PERSONNEL:SKILLS" , "PERSONNEL" , PREFIX )
40 TEXT COMMAND( 4 , 5 )
50 COMMAND( 1 ) = "PRINT" , "NEXT" , "PREV" , "QUIT"
60 IF USER = "PERSONNEL"
70 .SCREEN EMPL( "PERSONNEL:EMPLOYEES" )
80 ELSE
90 .SCREEN EMPL( "PERSONNEL:EMPLOYEES_VIEW" )
00 END
BIND 2

```

General considerations

- ◆ The binding process is a preliminary run of a MANTIS program. This preliminary run stops at the first statement that depends on information not available until execution time (e.g., results from I/O statements, built-in functions such as USER, PASSWORD, etc.). MANTIS saves the resulting data areas and execution status with the program. When you run a bound program, MANTIS begins execution from the point where binding stopped. Therefore, locate all bindable statements before the first unbindable statement in your program. (A list of MANTIS statements and functions and their binding categories appears in “[Bind Options](#)” on page 365.) Note that you can put bindable statements in an internal subroutine since the binding process does not stop on an internal DO.
- ◆ Use the BIND command to test the bindability of your program.
- ◆ If a bind is successful, MANTIS displays “(HPO BOUND)” in the heading line on your screen.
- ◆ Depending upon the message level selected, MANTIS displays the following:
 - 0 Scrolls the BIND 0 command up the screen when finished. “(HPO BOUND)” appears after the program name.
 - 1 Displays FMT message (binding stopped at this line)
 - 2 Displays the following message:

```

BINDING
entity-type entity-name (one per bound entity)

```

- ◆ MANTIS automatically unbinds a bound program when you load the program *and* make modifications to it. You can also use the BIND OFF command to unbind a bound program. (The unbound program exists only in the work area unless you replace it in your library.) HPO Unbind allows you to unbind a program without entering programming mode.
- ◆ MANTIS does not check the consistency of bound entities (except for RDM logical views and TOTAL views) at program execution time. You must monitor consistency using the HPO Check or SQL Check options.
- ◆ If you issue a RUN command after a BIND or a LOAD of a bound program, MANTIS resumes execution where binding left off. (The program is unbound in the work area.)
- ◆ Issue the BIND command at DOLEVEL 0 only.
- ◆ The program directory indicates whether a particular program is bound ('B') or is not bound (no indication). 'B' appears in the FMT field on the Directory List. A 'B' also appears in the second position of the FMT column on the EEPR list for bound programs.

BOTTOM

Use the BOTTOM command, an FSE command, to move your terminal window to the bottom of your program.

```
{  
BOTTOM  
BOT  
}
```

Description Moves your terminal window to the bottom of your program.

Consideration The BOTTOM command is identical to LOCATE or LIST 30000.

Example

```
EDIT - EXAMPLES:CUST_ENTRY  
COMMAND ===>BOT  
00180 EXIT  
***** END OF PROGRAM*****
```

C (copy)

Use the C (copy) command, an FSE line command, when you want to copy one line or multiple lines within your program.

```
{ C
  Cn
  CC }
```

C

| | |
|--------------------|-------------------------------------------------|
| Description | Identifies a single line that you want to copy. |
|--------------------|-------------------------------------------------|

Cn

| | |
|--------------------|----------------------------------------------------------------------------------------------------------|
| Description | Specifies the total number of lines you want to copy, starting with the line where this command appears. |
|--------------------|----------------------------------------------------------------------------------------------------------|

| | |
|----------------|---|
| Default | 1 |
|----------------|---|

CC

| | |
|--------------------|----------------------------------------------|
| Description | Indicates a block of lines you want to copy. |
|--------------------|----------------------------------------------|

Consideration Mark the first and last lines of the block with the CC command.

General considerations

- ◆ To copy lines within a program that you are editing, use the C line command to identify what you want to copy. Use the A, B, or O (or OO) line commands to specify the destination.
 - A Tells MANTIS to place copied lines *after* the marked line.
 - B Tells MANTIS to place copied lines *before* the marked line.
 - O Tells MANTIS to place copied lines *over* the marked line (lines with 00).
- ◆ To copy lines from a separate MANTIS program, use the COPY primary command to identify the lines you want to copy. Specify the destination using the COPY primary command or the A or B line commands.
- ◆ If you use Cn, and n is the same number as the number you are typing over (part of the sequence number), then you must include a space after Cn, for example, "C2 ".

Examples

```
EDIT - EXAMPLES:SAVINGS
COMMAND ===>
***** *****START OF PROGRAM*****
00001 ENTRY COMPOUND_INTEREST
cc 02 .SHOW "WHAT IS THE CAPITAL AMOUNT?"
cc 03 .OBTAIN SAVINGS
a 004 .IF SAVINGS<=0
00005 .END
00006 EXIT
      .
      .
***** *****END OF PROGRAM*****
EDIT - EXAMPLES:SIMPLE_INTEREST
COMMAND ===>
***** *****START OF PROGRAM*****
00001 ENTRY COMPOUND_INTEREST
00002 .SHOW "WHAT IS THE CAPITAL AMOUNT?"
00003 .OBTAIN SAVINGS
00004 .IF SAVINGS<=0
00005 ..SHOW "WHAT IS THE CAPITAL AMOUNT?"
00006 ..OBTAIN SAVINGS
00007 .END
00008 EXIT
***** *****END OF PROGRAM*****
```

CANCEL

Use the CANCEL command, an FSE primary command, to terminate editing mode without saving the program you are editing. MANTIS returns you to the Program Design Facility menu, the EDIT parameter entry screen, or the EEPR program directory list, depending on which you used to enter FSE.

```
{ CANCEL }
{ PA2   }
```

General considerations

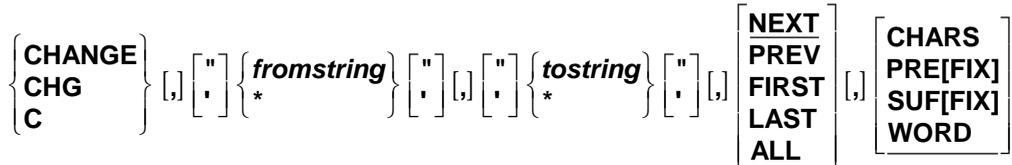
- ◆ If you have made modifications to the program, MANTIS asks you to confirm your CANCEL command.
- ◆ When you execute the CANCEL command, MANTIS ignores any pending modifications or error messages.
- ◆ Issue the SAVE or REPLACE commands before using the CANCEL command to terminate the editing session.
- ◆ If issued during a second level edit session, CANCEL will request confirmation (if changes have been made) and will return you to your top-level session.

Example

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND==> CANCEL
***** *****START OF PROGRAM*****
| | | |
***** *****END OF PROGRAM*****
```

CHANGE

Use the CHANGE command, an FSE primary command, to alter a text string or text strings in a program. (To repeat a CHANGE command, use RCHANGE.)



fromstring

*

Description *Required.* Specifies the string you are changing. "*" tells MANTIS to change to the same string that appeared in the last CHANGE command.

tostring

*

Description *Required.* Specifies the new string. "*" tells MANTIS to change the next use of the same string that appeared in the last CHANGE command.

NEXT

Description *Optional.* Tells MANTIS to change the next occurrence of a string.

Default NEXT

PREV

Description *Optional.* Tells MANTIS to change the previous occurrence of the string.

Consideration MANTIS searches from the cursor position if the cursor is in the data area. Otherwise, MANTIS starts its search at the end of the line that comes before the first line in the current display.

FIRST

Description *Optional.* Tells MANTIS to change the first occurrence of a string beginning at the top of the program.

LAST

Description *Optional.* Tells MANTIS to change the last occurrence of a string, beginning at the end of the program.

ALL

Description *Optional.* Tells MANTIS to change all occurrences of a string.

CHARS

Description *Optional.* Tells MANTIS to change any occurrence of a string.

Default CHARS

PREFIX

Description *Optional.* Tells MANTIS to change an occurrence of a string at the beginning of a word. (See General Considerations for discussion of separation characters.)

SUFFIX

Description *Optional.* Tells MANTIS to change an occurrence of a string at the end of a word. (See General Considerations for discussion of separation characters.)

WORD

Description *Optional.* Tells MANTIS to change an occurrence of an entire word. (See General Considerations for discussion of separation characters.)

General considerations

- ◆ You can enter the parameters for this command in any order.
- ◆ Use the RCHANGE command (or corresponding PF key) to find and change the next occurrence of the text string.
- ◆ Use a comma or a blank to separate all parameters from the rest of the command.
- ◆ When you issue the CHANGE command, MANTIS highlights the modified line and places the cursor on the first character in the modified text string. A message appears in the Title/Message Field telling you how many occurrences of the text string have changed.
- ◆ If you attempt to change a valid MANTIS statement into an invalid statement, the CHANGE command will terminate. MANTIS displays a message indicating the number of modified occurrences (before the error) in the Title/Message Field and highlights the statement in error.
- ◆ If you want to find a string that you cannot enter in a simple format (e.g., a string containing blanks), enclose the string in double quotes (“ ”) or single quotes (‘ ’). If you are not sure about the format, use the quotes since they are always valid.
- ◆ There are special cases when you *must* use quoted strings:
 - If the string contains blanks, commas, apostrophes, colons, or quotes.
 - If MANTIS could interpret the string as a CHANGE keyword (e.g., “NEXT” or an asterisk (*)).
 - Where lowercase is important (see additional considerations).

- ◆ If the Uppercase field is set to N (No) at the EDIT Program Entry panel or OFF at the Full-Screen Edit Profile panel, MANTIS interprets anything enclosed in double quotes (" ") as a literal string and will take it as it is entered. For example, if you enter, c "Index" LIST, as shown below:

```

EDIT - EXAMPLES:CUST_ENTRY
COMMAND ==> c "Index" LIST
***** *****START OF PROGRAM*****
00001 ENTRY INDEX
00002 .FILE RECORD("Index", "Serendipity")
00003 .SCREEN MAP("Index")
00004 .WHILE RECORD<>"END"
00005 ..CONVERSE MAP
00006 .END
00007 .STOP
00008 EXIT
***** *****END OF PROGRAM*****

```

MANTIS finds the first occurrence of Index (with initial caps) and replaces it:

```

EDIT - 1 OCCURRENCE OF CHARS 'Index' CHANGED
COMMAND ==>
***** *****START OF PROGRAM*****
00001 ENTRY INDEX
00002 .FILE RECORD("LIST", "Serendipity")           <== CURSOR
00003 .SCREEN SCREEN1("Index")
00004 .WHILE RECORD<>"END"
00005 ..CONVERSE MAP
00006 .END
00007 .STOP
00008 EXIT
***** *****END OF PROGRAM*****

```

- ◆ When the Uppercase field is set to N, MANTIS interprets a string enclosed in single quotes (' ') as a MANTIS statement or part of a statement and automatically translates it to uppercase before doing the CHANGE. For example, if you enter, c 'Index' LIST, as shown below:

```

EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===> c 'Index' LIST
***** *****START OF PROGRAM*****
00001 ENTRY INDEX
00002 .FILE RECORD("Index", "Serendipity")
00003 .SCREEN MAP("Index")
00004 .WHILE RECORD<>"END"
00005 ..CONVERSE MAP
00006 .END
00007 .STOP
00008 EXIT
***** *****END OF PROGRAM*****
    
```

MANTIS translates the string to uppercase and find the first occurrence of INDEX (all caps) and replaces it:

```

EDIT - 1 OCCURRENCE OF CHARS 'INDEX' CHANGED
COMMAND ===>
***** *****START OF PROGRAM*****
00001 ENTRY LIST                                     <== cursor
00002 .FILE RECORD("Index", "Serendipity")
00003 .SCREEN SCREEN1("Index")
00004 .WHILE RECORD<>"END"
00005 ..CONVERSE MAP
00006 .END
00007 .STOP
00008 EXIT
***** *****END OF PROGRAM*****
    
```

- ◆ MANTIS interprets anything behind a comment bar as a text string and does not translate it.



When Uppercase is set to N (or OFF), and embedded quotes are included in the source string, it is possible to miss occurrences of the string you want to change.

- ◆ Nonalphanumeric characters are considered separation characters. The underline character () is treated as an alphanumeric character when it trails a prefix or precedes a suffix. The following table provides more examples of the results that you can expect with the CHANGE command:

| Original string: | Command issued: | Result: |
|------------------|--------------------|-----------|
| TIME(8) | C TIME DATE ALL | DATE(8) |
| TIMEA(8) | | DATEA(8) |
| TIME_(8) | | DATE_(8) |
| ATIME(8) | | ADATE(8) |
| A_TIME(8) | | A_DATE(8) |
| A_TIME_C | | A_DATE_C |
| TIME(8) | C TIME XX ALL WORD | XX(8) |
| TIMEA(8) | | TIMEA(8) |
| TIME_(8) | | XX_A(8) |
| ATIME(8) | | ATIME(8) |
| A_TIME(8) | | A_XX(8) |
| A_TIME_C | | A_XX_C |
| TIME(8) | C TIME XX ALL PRE | TIME(8) |
| TIMEA(8) | | XXA(8) |
| TIME_(8) | | XX(8) |
| ATIME(8) | | ATIME(8) |
| A_TIME(8) | | A_TIME(8) |
| A_TIME_C | | A_XX_C |
| TIME(8) | C TIME XX ALL SUF | TIME(8) |
| TIMEA(8) | | TIMEA(8) |
| TIME_(8) | | TIME_A(8) |
| ATIME(8) | | AXX(8) |
| A_TIME(8) | | A_XX(8) |
| A_TIME_C | | A_XX_C |

COPY

Use the COPY command, both an FSE primary command and a Line Editor command, to copy portions of another program into the program in the work area. You can copy lines from the program currently in the work area or in a library.

```
COPY [[user - name:] program - name[/password],]  $\left[ \begin{array}{c} \text{FIRST} \\ n1 \\ \text{LAST} \end{array} \right] \left[ \begin{array}{c} n2 \\ , \text{LAST} \end{array} \right] b \left[ \begin{array}{c} \text{FIRST} \\ \text{AFTER } n3 \\ \text{LAST} \end{array} \right]$ 
```

user-name

Description *Optional.* Specifies the name of the user from whose library you are copying.

Default Current user name.

Format Character literal identifying the user.

Considerations

- ◆ Specify *user-name* only when the program is in another user's library.
- ◆ Enclose *user-name* in double quotes (" ") if it begins with a numeral.

program-name

Description *Optional.* Specifies the name of the program from which you are copying.

Format Character literal identifying the program name.

Consideration If you don't specify a program name, MANTIS assumes the current program.

password

Description *Optional.* Specifies the password of the program from which you are copying.

Format A text literal that evaluates to a valid password for the program or statements you want to copy.

Default Current user password.

FIRST, *n1*, LAST

Description *Optional.* Specifies the line where MANTIS begins copying.

Default FIRST

Considerations

- ◆ When you specify the *n1* parameter, the line number must actually exist in the program from which you are copying.
- ◆ If you specify LAST, MANTIS copies only the last line in the program.

***n2*, LAST**

Description *Optional.* Specifies the last line in the block of code you are copying.

Default LAST

Considerations

- ◆ When you specify this parameter you must also specify the begin parameter.
- ◆ When you specify the *n2* parameter, the line number must actually exist in the program from which you are copying.
- ◆ If you don't specify this parameter, MANTIS copies only the line specified by *n1*.

FIRST, AFTER *n3*, LAST

Description *Optional for FSE. Required for Line Editor.* Specifies where to insert the copied lines in the existing program.

Default FIRST

Considerations

- ◆ If you are copying to an empty program in FSE this parameter is ignored.
- ◆ When you accept the default FIRST, MANTIS inserts the lines at the beginning of the program.
- ◆ When you specify the AFTER *n3* parameter, MANTIS inserts the lines after the line indicated by *n3*. This line number does not actually have to exist in the current program.

- ◆ When you specify LAST, MANTIS inserts the lines at the end of the program.
- ◆ For FSE, you can use the A (after) or B (before) line commands to indicate the destination.

General considerations

- ◆ During the copy operation, MANTIS assigns line numbers to the copied lines and increments subsequent lines by 1.
- ◆ If the assigned line numbers overflow into the existing program lines, MANTIS internally issues the SEQUENCE command to resequence as many lines as necessary to complete the copy. If you relied on the original line numbers, you can lose your place in the current program. To reorient yourself, issue the LIST command and scan to the line you need.
- ◆ To acquire and modify a subroutine, clear your workspace by entering the NEW command and type in COPY *program-name*. The entire subroutine will be copied to your workspace.

Example

```
LIST
10 ENTRY COMPOUND_INTEREST
20 .SHOW "WHAT IS THE CAPITAL AMOUNT?"
30 .OBTAIN SAVINGS
40 EXIT
COPY SIMPLE_INTEREST,70,80 AFTER 34
LIST
10 ENTRY COMPOUND_INTEREST
20 .SHOW "WHAT IS THE CAPITAL AMOUNT?"
30 .OBTAIN SAVINGS
35 .SHOW "WHAT IS THE INTEREST?"
36 .OBTAIN INTEREST
40 EXIT
```

D (delete)

Use the D command, an FSE line command, to specify one line or more lines for deletion.

D
Dn
DD

D

Description Identifies a single line you want to delete.

Dn

Description Specifies the total number of lines you want to delete, starting with the line where this command appears. The default number is one.

DD

Description Indicates a block of lines you want to delete. Mark the first and last lines of the block with the DD command.

General considerations

- ◆ DD deletes a block of lines including the lines you mark with DD.
- ◆ Overtyping program line numbers carefully. If you change the line number 02000 to d2000, MANTIS assumes that you entered only the letter “d”. To delete 2 lines, enter a space after the d (02000 becomes d2 00).
- ◆ You can also delete a line either by entering the line number (with no preceding zeroes) on the command line and pressing ENTER or by using the ERASE primary command.

Examples

```
EDIT - EXAMPLES:MAINTENANCE
COMMAND ===>
***** *****START OF PROGRAM*****
00001 ENTRY MAINTENANCE
00002 .ACCESS RECORD("INDEX","SERENDIPITY")
00003 .SCREEN MAP("INDEX")
00004 .CONVERSE MAP
d3 05 .COUNTER=1
00006 .WHILE MAP<>"CANCEL" AND COUNTER<17
00007 ..WHEN INDICATOR(COUNTER)="G"
00008 ...DO SUBRX
' ' ' '
***** *****END OF PROGRAM*****
```

```
EDIT - EXAMPLES:MAINTENANCE
COMMAND ===>
***** *****START OF PROGRAM*****
00001 ENTRY MAINTENANCE
00002 .ACCESS RECORD("INDEX","SERENDIPITY")
00003 .SCREEN MAP("INDEX")
00004 .CONVERSE MAP
00005 .DO SUBRX
***** *****END OF PROGRAM*****
```

DOWN

Use the DOWN command, an FSE primary command, to scroll toward the end of a program listing.

DOWN [*n*]

n

Description *Optional.* Specifies the number of rows you want to scroll. If you omit *n*, MANTIS uses the value that appears in the scroll field at the upper right of the screen.

Format DOWN [*n*], where *n* is a number in the range of 1 to the length of your program.

General considerations

- ◆ If you specify a number that is larger than the program length, MANTIS scrolls to the last line of your program.
- ◆ The default PF key settings for the DOWN command are PF8/20. See “[Full-Screen Edit Profile](#)” on page 195 or the PROFILE command to change these (or the SCROLL variable) assignments.

Examples

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===> DOWN 15
***** *****START OF PROGRAM*****
00010 ENTRY CUST_REPORT
00020 .SCREEN MAP("BURRYS_SCREEN1")
00030 .FILE REC("BURRYS_FILE1",PASSWORD,15)
00040 .WHILE MAP<>"CANCEL" AND REC<>"END"
00050 ..CLEAR MAP
00060 ...LET BUFFER=1
00070 ..GET REC LEVEL=BUFFER
00080 ...WHILE REC<>"END" AND BUFFER<15
00090 ...BUFFER=BUFFER+1
00100 ...GET REC LEVEL=BUFFER
00110 ..END
00120 ..CONVERSE MAP
00130 ..WHEN MAP="CANCEL" OR REC="END"
00140 ...CHAIN "MENU_PROGRAM"
00150 ..END
00160 .END
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
00160 .END
00170 .STOP
00180 EXIT
***** *****END OF PROGRAM*****
```

END

Use the END command, an FSE primary command, to save or replace your program and exit from programming mode, or to save or replace your changes and return to the previous edit level for *n*-level editing.

END

General considerations

- ◆ The default PF key setting for the END command is PF3. See the PROFILE command for details on changing this assignment.
- ◆ The END command saves or replaces the program. If you issue END at *n*-level edit, the top-level edit is returned. If you issue END at top-level edit, the previous screen is displayed.
- ◆ When issued, the END command updates change control information for the entity (if changes were made to the entity). This change control information can be viewed on the program profile.
- ◆ MANTIS allows you to SAVE or REPLACE an illogical program (one that contains an unresolved condition). When you issue SAVE/REPLACE/END/MENU/LOGOFF either explicitly or by a PF key, a warning message appears: 'PRESS ENTER TO CONFIRM ILLOGICAL SAVE/REPLACE'. The command that was issued will appear on the command line so that if/when ENTER is pressed the command will be executed. When you press ENTER, the screen will scroll up and highlight the unresolved statement.

Example

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ==> END
***** START OF PROGRAM*****
00001 ENTRY INDEX
00002 .FILE RECORD("INDEX", "SERENDIPITY")
00003 .SCREEN MAP("INDEX")
00004 .WHILE RECORD<>"END"
00005 ..CONVERSE MAP
00006 .END
00007 .STOP
00008 EXIT
***** END OF PROGRAM*****
```

ERASE

Use the ERASE command, both an FSE primary command and a Line Editor command, to delete one or more program lines.

ERASE n_1 $\left[\begin{array}{l} ,n_2 \\ ;n_3 \end{array} \right]$

n1

Description *Required.* Specifies the first (or only) line you want to delete.

Format An arithmetic expression which evaluates to a value in the range 1–30000.

Considerations

- ◆ MANTIS uses only the integer portion of *n1*.
 - ◆ Must be valid line number in the current program.
-

n2

Description *Optional.* Specifies the last line you want to delete.

Format An arithmetic expression which evaluates to a value in the range 1–30000.

Considerations

- ◆ Separate *n2* from *n1* with a comma.
 - ◆ MANTIS uses only the integer portion of *n2*.
 - ◆ Must be valid line number in the current program.
-

n3

Description *Optional.* Specifies the number of lines you want to erase starting with *n1*. Separate *n3* from *n1* with a semicolon.

Default 1

Format An arithmetic expression which evaluates to a value in the range 1–30000.

General considerations

- ◆ To erase a single line, key in the line number and press ENTER.
- ◆ MANTIS does not resequence line numbers automatically. You can resequence by using the SEQUENCE command.

Example

```

LIST
10 ENTRY MAINTENANCE
20 .ACCESS RECORD("INDEX", "SERENDIPITY", 16)
20 .SCREEN MAP("INDEX")
40 .CONVERSE MAP
50 .COUNTER=1
60 .WHILE MAP<>"CANCEL" AND COUNTER<17
70 ..WHEN INDICATOR(COUNTER)="G"

ERASE 50,70
LIST
-----
10 ENTRY MAINTENANCE
20 .ACCESS RECORD("INDEX", "SERENDIPITY", 16)
20 .SCREEN MAP("INDEX")
40 .CONVERSE MAP

```

<== *Also:*
ERASE 50;3

ERRCODE

Use the `ERRCODE` command, an FSE primary command, to display text for the 3-character syntax error messages you receive in FSE.

```
{ERRCODE}
{EC}      xxx
```

xxx

Description *Required.* Indicates a 3-letter error code.

General considerations

- ◆ When MANTIS detects a syntax error, it highlights that line and displays the 3-character error code in the Line Number field. You must correct the error before continuing your editing session.
- ◆ If you run or save (replace) a program that contains an error, FSE displays the 3-character error code plus the message text in the Title/Message Field.
- ◆ When MANTIS indicates a syntax error message, you need to either correct the statement or issue the `CANCEL` command.

Example

```
EDIT - SYNTAX ERROR(S) IN HI-LITED STATEMENTS
COMMAND ===> ERRCODE NCQ
***** *****START OF PROGRAM*****
00001 ENTRY MAINTENANCE
00002 .ACCESS RECORD("INDEX", "SERENDIPITY")
NCQ03 .SCREEN MAP("INDEX")
00004 .CONVERSE MAP
' ' ' '
***** *****END OF PROGRAM*****
EDIT -- NCQ: NO CLOSING APOSTROPHE FOLLOWING THE TEXT LITERAL
COMMAND ===>
***** *****START OF PROGRAM*****
00001 ENTRY MAINTENANCE
00002 .ACCESS RECORD("INDEX", "SERENDIPITY")
NCQ03 .SCREEN MAP("INDEX")
' ' ' '
***** *****END OF PROGRAM*****
```

FIND

The FIND command, an FSE primary command, locates and displays an occurrence of a text string in a program.

| | | | | | | | |
|-------------------------------------------------------------------------|-----|------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------|
| $\left\{ \begin{array}{l} \text{FIND} \\ \text{F} \end{array} \right\}$ | [,] | $\left[\begin{array}{l} " \\ ' \end{array} \right]$ | $\left\{ \begin{array}{l} \textit{string} \\ * \end{array} \right\}$ | $\left[\begin{array}{l} " \\ ' \end{array} \right]$ | $\left[\begin{array}{l} \text{NEXT} \\ \text{PREV} \\ \text{FIRST} \\ \text{LAST} \\ \text{ALL} \end{array} \right]$ | [,] | $\left[\begin{array}{l} \text{CHARS} \\ \text{PRE[FIX]} \\ \text{SUF[FIX]} \\ \text{WORD} \end{array} \right]$ |
|-------------------------------------------------------------------------|-----|------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------|

string

*

Description *Required.* Specifies the string you want to find. "*" tells MANTIS to find the next use of the same string that appeared in the last FIND command.

NEXT

Description *Optional.* Tells MANTIS to find the next occurrence of a string.

Default NEXT.

PREV

Description *Optional.* Tells MANTIS to find the previous occurrence of the string.

Consideration MANTIS searches from the cursor position if the cursor is in the data area. Otherwise, MANTIS starts its search at the end of the line that comes before the first line in the current display.

FIRST

Description *Optional.* Tells MANTIS to find the first occurrence of a string beginning at the top of the program.

LAST

Description *Optional.* Tells MANTIS to find the last occurrence of a string, beginning at the end of the program.

ALL

Description *Optional.* Tells MANTIS to find all occurrences of a string.

CHARS

Description *Optional.* Tells MANTIS to find any occurrence of a string.

Default CHARS

PREFIX

Description *Optional.* Tells MANTIS to find an occurrence of a string at the beginning of a word. (See General Considerations for discussion of separation characters.)

SUFFIX

Description *Optional.* Tells MANTIS to find an occurrence of a string at the end of a word. (See General Considerations for discussion of separation characters.)

WORD

Description *Optional.* Tells MANTIS to find an occurrence of a string that is an entire word. (See General Considerations for discussion of separation characters.)

General considerations

- ◆ MANTIS highlights the line and places the cursor in the first position of the text string. A confirmation message appears in the Title/Message Field.
- ◆ If you want to find a string that you cannot enter in a simple format (e.g., a string containing blanks), enclose the string in double quotes (“ ”) or single quotes (‘ ’). If you are not sure about the format, use the quotes since they are always valid.
- ◆ The special cases where you *must* use quoted strings are:
 - If the string contains blanks, commas, apostrophes, colons, or quotes
 - If MANTIS could interpret the string as a FIND keyword (e.g., “NEXT” or an asterisk (*))
 - Where lowercase is important
- ◆ Use a comma or a blank to separate the last two parameters from the rest of the command.
- ◆ You can enter the parameters for this command in any order. All of the following are valid:


```
FIND JOHN,ALL  FIND ALL JOHN
FIND ALL,PRE,MAP  FIND MAP ALL,PRE
```
- ◆ Use the RFIND command (or corresponding PF key) to find the next occurrence of the text string indicated in the FIND command.
- ◆ Nonalphanumeric characters are considered separation characters. The underline character (_) is treated as an alphanumeric character when it trails a prefix or precedes a suffix.
- ◆ When you use double or single quotes to search for a string, MANTIS interprets the quotes as the delimiters of the string. The following table shows how MANTIS translates strings enclosed in quotes:

| String entered | MANTIS finds |
|----------------|--------------|
| 'INDEX' | LIST |
| "INDEX" | LIST |
| “INDEX” | “INDEX” |
| “INDEX” | ‘INDEX’ |

Examples

```
EDIT - EXAMPLES:CUST_TALK
COMMAND ===> F "FIRST" WORD
***** *****START OF PROGRAM*****
00001 ENTRY NAMES
00002 .SCREEN MAP("CUST_ENTRY", "ALIBABA")
00003 .WHILE KEY<>"CANCEL"
00004 ..CONVERSE MAP
00005 ..SHOW "ENTER YOUR SURNAME"
00006 ..OBTAIN "FIRST_NAME"
00007 ..IF (FIRST_NAME<"ZZZZZZZZZ")
00008 ...SHOW "THAT'S NOT YOUR FIRST NAME!"
***** *****END OF PROGRAM*****
EDIT - EXAMPLES:CUST_TALK
COMMAND ===>
```

```
***** *****START OF PROGRAM*****
00001 ENTRY NAMES
00002 .SCREEN MAP("CUST_ENTRY", "ALIBABA")
00003 .WHILE KEY<>"CANCEL"
00004 ..CONVERSE MAP
00005 ..SHOW "ENTER YOUR SURNAME"
00006 ..OBTAIN "FIRST_NAME" <==
00007 ..IF (FIRST_NAME<"ZZZZZZZZZ")
00008 ...SHOW "THAT'S NOT YOUR FIRST NAME!"
***** *****END OF PROGRAM*****
```

*WORD or
PRE would have
the same
result.*

```
EDIT - EXAMPLES:CUST_TALK
COMMAND ===> F NAME PRE
***** *****START OF PROGRAM*****
00001 ENTRY NAMES
00002 .SCREEN MAP("CUST_ENTRY", "ALIBABA")
00003 .WHILE KEY<>"CANCEL"
00004 ..CONVERSE MAP
00005 ..SHOW "ENTER YOUR SURNAME"
00006 ..OBTAIN "NAME1"
***** *****END OF PROGRAM*****
EDIT - PREFIX 'NAME' FOUND
COMMAND ===>
```

```

***** *****START OF PROGRAM*****
00001 ENTRY NAMES
00002 .SCREEN MAP("CUST_ENTRY", "ALIBABA")
00003 .WHILE KEY<>"CANCEL"
00004 ..CONVERSE MAP
00005 ..SHOW "ENTER YOUR SURNAME"
00006 ..OBTAIN "NAME1"
***** *****END OF PROGRAM*****

```

*Here you will
<== get a match
with PRE, but
not with WORD
since there is no
valid separator.*

- ◆ If Uppercase is set to No, MANTIS interprets anything enclosed in double quotes (“ ”) as a literal string. For example, see below for an example featuring f “First” word:

```

EDIT - EXAMPLES:CUST_TALK
COMMAND ==> f "First" word
***** *****START OF PROGRAM*****
00001 ENTRY NAMES
00002 .SCREEN MAP("CUST_ENTRY", "ALIBABA")
00003 .WHILE KEY<>"CANCEL"
00004 ..CONVERSE MAP
00005 ..SHOW "Enter Your Surname"
00006 ..OBTAIN "FIRST_NAME"
00007 ..IF (FIRST_NAME<"ZZZZZZZZ")
00008 ...SHOW "That's Not Your First Name!"
***** *****END OF PROGRAM*****
EDIT - WORD 'First' FOUND
COMMAND ==>

```

```

***** *****START OF PROGRAM*****
00001 ENTRY NAMES
00002 .SCREEN MAP("CUST_ENTRY", "ALIBABA")
00003 .WHILE KEY<>"CANCEL"
00004 ..CONVERSE MAP
00005 ..SHOW "Enter Your Surname"
00006 ..OBTAIN "FIRST_NAME"
00007 ..IF (FIRST_NAME<"ZZZZZZZZ")
00008 ...SHOW "That's Not Your First Name!"
***** *****END OF PROGRAM*****

```

<=== cursor

- ◆ When the Uppercase field is set to N (or OFF), MANTIS interprets a string enclosed in single quotes (' ') as a MANTIS statement or part of a statement and automatically translates it to uppercase before doing the FIND. For example, if you enter, f 'First' word, as shown below:

```

EDIT - EXAMPLES:CUST_TALK
COMMAND ==> f 'First' word
***** *****START OF PROGRAM*****

00001 ENTRY NAMES
00002 .SCREEN MAP("CUST_ENTRY", "ALIBABA")
00003 .WHILE KEY<>"CANCEL"
00004 ..CONVERSE MAP
00005 ..SHOW "Enter Your Surname"
00006 ..OBTAIN "FIRST_NAME"
00007 ..IF (FIRST_NAME<"ZZZZZZZZ")
00008 ...SHOW "That's Not Your First Name!"
***** *****END OF PROGRAM*****

```

- ◆ MANTIS translates the string to uppercase and finds the first occurrence of FIRST (all caps):

```

EDIT - WORD 'FIRST' FOUND
COMMAND ==>
***** *****START OF PROGRAM*****

00001 ENTRY NAMES
00002 .SCREEN MAP("CUST_ENTRY", "ALIBABA")
00003 .WHILE KEY<>"CANCEL"
00004 ..CONVERSE MAP
00005 ..SHOW "Enter Your Surname"
00006 ..OBTAIN "FIRST_NAME" <==CURSOR
00007 ..IF (FIRST_NAME<"ZZZZZZZZ")
00008 ...SHOW "That's Not Your First Name!"
***** *****END OF PROGRAM*****

```

- ◆ MANTIS interprets anything behind a comment bar as a text string and does not translate it.



When Uppercase is set to N, and embedded quotes are included in the source string, it is possible to miss occurrences of the string you want to find.

HELP

The HELP command, both an FSE primary command and a Line Editor command, provides further explanation of an error message, a command, or a list of reserved words. For statements used with END (e.g., WHILE-END, IF-END), do not specify "END" in conjunction with the HELP command (use HELP WHILE or HELP IF).

```

RESERVED
command - name
CODE_ xxx
FSE
HELP

```

RESERVED

Description *Optional.* Tells MANTIS to display a list of all reserved words.

Format Must be coded exactly as shown.

command-name

Description *Optional.* Specifies the name of a command or statement for which you want further information.

Format A valid MANTIS command or statement.

CODE_ xxx

Description *Optional.* Specifies a 3-character code for error messages as listed in *MANTIS Messages and Codes, OS/390, VSE/ESA, P39-5004*.

FSE

Description *Optional.* Tells MANTIS to display online help for FSE.

HELP

Description *Optional.* Tells MANTIS to display a list of commands for which help is available.

General considerations

- ◆ Use HELP with no parameter or HELP after an error message to display a prompter describing the last error message.
- ◆ You can use HELP with a command name to display a prompter providing a more detailed explanation of the command or statement. A prompter is available for most commands and statements.
- ◆ Use HELP RESERVED to display all MANTIS reserved words, as listed in “[Program Design group headings](#)” on page 26.
- ◆ Use HELP CODE_XXX, where XXX is a 3-character error ID, to display an explanation of the error you designate.
- ◆ If you are using FSE, the default PF key setting for the HELP command is PF1. See “[Full-Screen Edit Profile](#)” on page 195 or the PROFILE command for details on changing this assignment.

Examples

```
HELP
HELP CONVERSE
HELP RESERVED
HELP HELP
HELP IF
HELP CODE_IFD
```

I (insert)

Use the I command, an FSE line command, to indicate that you want to insert blank lines in a program.

I [*n*]

Description *Optional.* Indicates that you want to insert blank lines in a program.

Format I [*n*] where *n* is a number in the range of 1 to your program length.

n

Description *Optional.* Specifies the number of lines you want to insert. If you omit *n*, MANTIS inserts one line.

General considerations

- ◆ MANTIS identifies inserted lines by displaying single quotes (""") in the Line Number field. The cursor appears on the first "insert" line which is highlighted.
- ◆ When you press ENTER after entering data on a line, MANTIS assigns line numbers and inserts another new line beneath the current line. If you press ENTER again without providing data, MANTIS removes the unused line(s).
- ◆ MANTIS inserts the lines immediately following the line number where the I command appears. For example:

| Enter | Results |
|---------|---------|
| 00001 A | 00001 A |
| r0002 B | 00002 B |
| i0003 C | 00003 B |
| | """ |
| | 00004 C |

You may not want to combine the I (insert) command with the R (repeat), C (copy), and M (move) line commands to ensure that internal sequencing does not affect your program.

- ◆ You can have a total of 30,000 lines in your program.
- ◆ If you use `In`, and `n` is the same number as the number you are typing over (part of the sequence number), then you must include a space after `In`, for example, "I2 ".

Example

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00001 ENTRY INDEX
00002 .FILE RECORD("INDEX", "SERENDIPITY")
00003 .SCREEN MAP("INDEX")
i5 04 .GET RECORD FIRST
00005 .IF KEY<>"CANCEL"
***** *****END OF PROGRAM*****
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00001 ENTRY INDEX
00002 .FILE RECORD("INDEX", "SERENDIPITY")
00003 .SCREEN MAP("INDEX")
00004 .GET RECORD FIRST
| | | |
| | | |
| | | |
| | | |
| | | |
00005 .IF KEY<>"CANCEL"
***** *****END OF PROGRAM*****
```

KILL

The KILL command terminates a program listing, a program currently paused (waiting for data), or a program in a loop. Whenever a program executes a WAIT, OBTAIN, or CONVERSE statement, or has just issued the message "POTENTIAL PROGRAM LOOP ENCOUNTERED", you can stop program execution by entering KILL.

KILL

General considerations

- ◆ Use the tab key to place the cursor in the correct position on the bottom line (as shown in the examples).
 - Unformatted screen: bottom left, (unsolicited input field) or key simulation field
 - Formatted screen: (converse) key simulation field
- ◆ You can re-execute your program by issuing the RUN statement if you are in programming mode.
- ◆ The keyword KILL can be changed or disabled by the Master User.
- ◆ KILL cannot be used if the 4 panel has a "Protect Bottom Line" attribute.

LEFT

Use the LEFT command, an FSE primary command, to scroll your terminal toward column one in a program listing.

LEFT *n*

n

Description *Required.* Specifies the number of columns you want to scroll.

Format Must be a positive integer less than 254.

Considerations

- ◆ MANTIS scrolls back as far as the first column of your program.
- ◆ The default PF key settings for the LEFT command (default value is LEFT 10) are PF10/22. See the PROFILE command to change these assignments.

Example

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===> LEFT 15
***** *****START OF PROGRAM*****
00001 CE
00002 "INDEX", "SERENDIPITY", 16)
00003 DEX")
00004
00005
00006 NCEL" AND COUNTER<17
00007 R(COUNTER)="G"
00008 VALID NUMBER. REMEMBER TO ENTER ALL FIELDS.

EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00001 ENTRY MAINTENANCE
00002 .ACCESS RECORD("INDEX", "SERENDIPITY", 16)
00003 .SCREEN MAP("INDEX")
00004 .CONVERSE MAP
00005 .COUNTER=1
00006 .WHILE MAP<>"CANCEL" AND COUNTER<17
00007 ..WHEN INDICATOR(COUNTER)="G"
00008 ...SHOW "THIS IS A VALID NUMBER. REMEMBER TO ENTER AL
```

LIST

Use the LIST command, both an FSE primary command and a Line Editor command, to list all or part of the program currently in the work area. MANTIS removes insignificant blanks and indents nested conditions (with periods) according to hierarchy.

LIST [*n1* [, *n2*]]

n1

Description *Optional.* *n1* specifies the number of the first statement you want listed. If you don't specify *n1*, MANTIS begins with the first statement number in the program.

Format Must be a valid arithmetic expression.

Consideration MANTIS uses only the integer portion of *n*.

n2

Description *Line Editor only. Optional.* Indicates how many statements to list. If you don't specify *n2*, MANTIS lists as many lines as your terminal length allows.

Format Must be a valid arithmetic expression.

Consideration MANTIS uses only the integer portion of *n*.

General considerations

- ◆ In FSE, the LIST command is identical to the LOCATE command.
- ◆ In FSE, if your program line extends beyond the width of your terminal, enter the RIGHT command to move your terminal window to the right. (MANTIS does not place a plus sign (+) at the end of the line in FSE.)
- ◆ In the Line Editor, if a line in your program extends beyond the physical terminal limit, MANTIS places a plus (+) after the line number. Use the ALTER command and the line number to view the line. You may want to divide your statement into two separate lines.
- ◆ In the Line Editor, LIST 1,30000 lists the entire program. Each time you press ENTER, a new screen display of program statements appears.

- ◆ In the Line Editor, you can terminate a program listing at any time by entering the KILL command in the lower left corner of the screen. Use the tab key to position the cursor in the correct location.
- ◆ You can print a program while in the Line Editor by entering the following:

OUTPUT PRINTER

LIST 1,30000

- ◆ In FSE, you can also use the PRINT primary command to print your program.

Example

```

EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>LIST
***** *****START OF PROGRAM*****
00001 ENTRY INDEX
00002 .FILE RECORD("INDEX", "SERENDIPITY")
00003 .SCREEN MAP("INDEX")
00004 .GET RECORD FIRST
00005 .WHILE RECORD<>"END" AND MAP<>"CANCEL"
00006 ..CONVERSE MAP
00007 ..WHEN MAP="PF1"
00008 ...INSERT RECORD
00009 ..WHEN MAP="PF2"
00010 ...UPDATE RECORD
00011 ..END
00012 ..GET RECORD
00013 .END
00014 .STOP
00015 EXIT
***** *****END OF PROGRAM*****

```

LOAD

Use the LOAD command, both an FSE primary command and a Line Editor command, to retrieve an existing program from a library and place it in your current work area.

LOAD ["] [*user-name*:] [*program-name*] [/*password*] ["]

user-name

- Description** *Optional.* Specifies the name of the user from whose library the program will be loaded.
- Default** User sign-on name.
- Format** Must be a standard symbolic name
- Consideration** Specify only if the program is from another user's library.

program-name

- Description** *Optional.* Specifies the name of an existing program you want to load.
- Format** A standard symbolic name, 1–32 characters in length.
- Consideration** If *program-name* is omitted, the current program is loaded.

password

- Description** *Optional.* Specifies the password under which the program was previously saved.
- Default** User sign-on password or the last password specified.
- Format** A standard symbolic name.
- Considerations**
- ◆ Specify only if the password is different from the current password.
 - ◆ If the password does not match that specified when the program was saved, MANTIS displays an error message instead of loading the program.

General considerations

- ◆ LOAD automatically clears the work area if it finds the specified program. (If it doesn't find the program, the work area is not cleared.) Therefore, if you load a second program before saving or replacing the first program, any changes you made after the last SAVE/REPLACE will be lost.
- ◆ If issued at *n*-level edit, the LOAD command prompts you with the message PLEASE CONFIRM LOAD COMMAND. The command line is not cleared and the cursor is placed on the first position of the command line. To confirm the LOAD command, press ENTER. If you decide not to confirm, the command must be overtyped or the ERASE EOF key pressed to clear the command line and continue with the edit session. If you confirm, a new edit session will begin with the loaded program, and the previous edit session will be terminated.
- ◆ Confirmation of the LOAD command is also required when you make changes to the program at top-level edit, select a component to edit, then return to top-level edit and issue the LOAD command (without first saving the changes made previously to the top-level program).
- ◆ The LOAD command issued at *n*-level edit requests a confirmation. If confirmed, the loaded program will always be at the top-level edit, and the FSE session (which was in progress) will be terminated.
- ◆ When you load a program in FSE, MANTIS fetches it from the library and lists it automatically.
- ◆ You can stack other commands with the LOAD command as long as you add quotes around the program name. For example, LOAD "PROGRAM":RUN. If you do not add the quotes, MANTIS adds the additional commands as part of the program name.
- ◆ When you load a bound program, MANTIS displays the message "(HPO BOUND)" in the heading line. If you modify the program, MANTIS automatically unbinds it.
- ◆ If you save a quoted string with lowercase support turned on, the user name and password will be saved as entered (lowercase) and the program name will be translated to uppercase.

Examples

```
LOAD EXAMPLE_PROGRAM
LOAD your_name:YOUR_PROGRAM/your-password
```

LOCATE

Use the LOCATE command, an FSE primary command, to find a specific line in the current program.

$\left. \begin{array}{l} \text{LOCATE} \\ \text{LOC} \\ \text{L} \end{array} \right\} n$

n

Description *Required.* Tells MANTIS which line number you want to locate. Line *n* will appear on the first line of your display. (If *n* does not exist, the display will begin at the first line number that is greater than *n*.)

General considerations

- ◆ Use LOC 30000 to scroll to the bottom of a program.
- ◆ Use the BOTTOM command to scroll to the bottom of the program and the TOP command to scroll to the top.

Examples

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===> LOC 170
***** *****START OF PROGRAM*****
00010 ENTRY CUST_REPORT
00020 .SCREEN MAP("BURRYS_SCREEN1")
00030 .FILE REC("BURRYS_FILE1",PASSWORD,15)
00040 .WHILE MAP<>"CANCEL" AND REC<>"END"
00050 ..CLEAR MAP
00060 ..LET BUFFER=1
00070 ..GET REC LEVEL=BUFFER
00080 ..WHILE REC<>"END" AND BUFFER<15
00090 ...BUFFER=BUFFER+1
00100 ...GET REC LEVEL=BUFFER
00110 ..END
00120 ..CONVERSE MAP
00130 ..WHEN MAP="CANCEL" OR REC="END"
00140 ...CHAIN "MENU_PROGRAM"
00150 ..END
00160 .END
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
00170 .STOP
00180 EXIT
***** *****END OF PROGRAM*****
```

LOGOFF

Use the LOGOFF command, an FSE primary command, to save or replace a program or component (if changes have been made) and exit from MANTIS.

LOGOFF

General considerations

- ◆ When issued, the LOGOFF command updates change control information for the entity if changes were made. This change control information can be viewed on the program profile.
- ◆ When issued from top-level edit, the LOGOFF command exits from MANTIS. When issued from *n*-level edit, the previous edit level is returned.
- ◆ MANTIS allows you to SAVE or REPLACE an illogical program (one that contains an unresolved condition). When you issue SAVE/REPLACE/END/MENU/LOGOFF either explicitly or by a PF key, a warning message appears: 'PRESS ENTER TO CONFIRM ILLOGICAL SAVE/REPLACE'. The command that was issued will appear on the command line so that if/when ENTER is pressed the command will be executed. When you press ENTER, the screen will scroll up and highlight the unresolved statement.

Example

```
EDIT --- ACCOUNT:CUST_BROWSE
COMMAND ===> LOGOFF
***** START OF PROGRAM*****
00010 ENTRY CUST_BROWSE
00020 .TEXT PROGRAM_ID(49):PROGRAM_ID="ACCT:CUST_BROWSE"
00030 .DO INIT_PROC
00040 .FUNCTION_TYPE=FUNCTION_UPDATE
00050 .DO OPEN_FILES
00060 .DO MAIN_LOGIC
00070 .DO TERMINATE_PROC
00080 EXIT
***** END OF PROGRAM*****
```

M (move)

The M (move) command, an FSE line command, moves a line or lines within a program.

M
Mn
MM

M

Description Identifies a single line you want to move.

Mn

Description Specifies the total number of lines you want to move, starting with the line where this command appears.

Default 1.

MM

Description Indicates a block of lines you want to move.

Consideration Mark the first and last lines of the block with the MM command.

General considerations

- ◆ Use the A, B, or O (or OO) line commands with the M command to specify the destination of the lines you are moving.
 - A—Tells MANTIS to place moved lines after the marked line.
 - B—Tells MANTIS to place moved lines before the marked line.
 - O—Tells MANTIS to place moved lines over the marked line (lines with OO).
- ◆ If you use Mn, and n is the same number as the number you are typing over (part of the sequence number), then you must include a space after Mn, for example, “M2 ”.

Examples

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00010 ENTRY INDEX
00020 .FILE RECORD("INDEX", "SERENDIPITY")
00030 .SCREEN MAP("INDEX")
a 040 .WHILE RECORD<>"END"
00050 .END
m 060 .CONVERSE MAP
00070 .STOP
00080 EXIT
' ' ' '
***** *****END OF PROGRAM*****
```

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00010 ENTRY INDEX
00020 .FILE RECORD("INDEX", "SERENDIPITY")
00030 .SCREEN MAP("INDEX")
00040 .WHILE RECORD<>"END"
00050 ..CONVERSE MAP
00060 .END
00070 .STOP
00080 EXIT
***** *****END OF PROGRAM*****
```

MENU

Use the MENU command, an FSE primary command, to save or replace a program or component (if changes have been made) and to display the MANTIS Facility Selection menu.

MENU

General considerations

- ◆ When issued the MENU command updates change control information for the entity if changes were made. This change control information can be viewed on the program profile.
- ◆ When issued from top-level edit, the MENU command displays the MANTIS Facility Selection menu. When issued from *n*-level edit, the previous edit level is returned.
- ◆ MANTIS allows you to SAVE or REPLACE an illogical program (one that contains an unresolved condition). When you issue SAVE/REPLACE/END/MENU/LOGOFF either explicitly or by a PF key, a warning message appears: 'PRESS ENTER TO CONFIRM ILLOGICAL SAVE/REPLACE'. The command that was issued will appear on the command line so that if/when ENTER is pressed the command will be executed. When you press ENTER, the screen will scroll up and highlight the unresolved statement.

Example

```
EDIT --- ACCOUNT:CUST_BROWSE@
COMMAND ===> MENU
***** START OF PROGRAM*****
00010 ENTRY CUST_BROWSE
00020 .TEXT PROGRAM_ID(49):PROGRAM_ID="ACCT:CUST_BROWSE"
00030 .DO INIT_PROC
00040 .FUNCTION_TYPE=FUNCTION_UPDATE
00050 .DO OPEN_FILES
00060 .DO MAIN_LOGIC
00070 .DO TERMINATE_PROC
00080 EXIT
***** END OF PROGRAM*****
```

Note that in the above example, the at sign (@) appended to the program name indicates a Component-Engineered source program.

NEW

Use the NEW command, both an FSE primary command and a Line Editor command, to clear the current work area.

NEW

Description *Optional.* Clears the current work area.

Considerations

- ◆ The QUIT and LOAD commands also clear the current work area.
- ◆ If you issue the NEW command without saving or replacing the program currently in your work area, you will lose all the modifications you have made.

General considerations

- ◆ If issued at *n*-level edit, the NEW command prompts you with the message PLEASE CONFIRM NEW COMMAND. The command line is not cleared and the cursor is placed on the first position of the command line. To confirm the NEW command, press ENTER. If you decide not to confirm, the command must be overtyped or the ERASE EOF key pressed to clear the command line and continue with the edit session. If you confirm, a new edit session will begin with the loaded program, and the previous edit session will be terminated.
- ◆ Confirmation of the NEW command is also required when you make changes to the program at top-level edit, select a component to edit, then return to top-level edit and issue the NEW command (without first saving the changes made previously to the top-level program).
- ◆ The NEW command issued at *n*-level edit requests a confirmation. If confirmed, the loaded program will always be at the top-level edit, and the FSE session (which was in progress) will be terminated.

O (overlay)

Use the OVERLAY command, an FSE line command, with the COPY or MOVE line commands to specify the destination of the program lines. The destination line(s) are erased and replaced by the copied or moved line(s).

$\left. \begin{array}{l} O \\ On \\ OO \end{array} \right\}$

O

Description Specifies that the moved or copied line should overlay this line.

On

Description Indicates that the moved or copied lines should overlay this line and “*n*” lines following this line.

OO

Description Indicates that the moved or copied lines should overlay this block of lines. Mark the first and last lines of the block with OO.

General considerations

- ◆ If you specify *On* and the number of lines you copy or move is less than *n*, MANTIS deletes the extra lines automatically.
- ◆ To move or copy lines within a program that you are editing, use the M or C line commands to identify what you want to move or copy. Use the A, B, or O (or OO) line commands to specify the destination.
- ◆ To copy lines from a separate MANTIS program, use the COPY primary command to identify the lines you want to copy. Specify the destination using the COPY primary command or the A or B commands.
- ◆ If you use *On*, and *n* is the same number as the number you are typing over (part of the sequence number), then you must include a space after *On*, for example, “O2 ”.

Examples

```
EDIT - EXAMPLES:CUST_BROWSE
COMMAND ===>
***** *****START OF PROGRAM*****
00010 ENTRY BROWSE
00020 .FILE RECORD ("CUST", "SERENDIPITY")
00030 .SCREEN MAP("CUST")
cc040 .WHILE RECORD<>"END"
00050 ..DO SUBR(A)
cc060 .END
.
.
.
o0170 .DO SUBR(A)
00080 EXIT
***** *****END OF PROGRAM*****
```

```
EDIT - EXAMPLES:CUST_BROWSE
COMMAND ===>
***** *****START OF PROGRAM*****
00010 ENTRY BROWSE
00020 .FILE RECORD("CUST", "SERENDIPITY")
00030 .SCREEN MAP("CUST")
00040 .WHILE RECORD<>"END"
00050 ..DO SUBR(A)
00060 .END
.
.
.
00170 .WHILE RECORD<>"END"
00180 ..DO SUBR(A)
00190 .END
00200 EXIT
***** *****END OF PROGRAM*****
```

PRINT

Use the PRINT command, an FSE primary command to route the program in your program work area to the printer designated in your User Profile.

PRINT

General considerations

- ◆ The PRINT command is the equivalent of the following MANTIS commands:

```
OUTPUT PRINTER
LIST 1,30000
```
- ◆ The default PF key settings for the PRINT command are PF9/21. See the PROFILE command for details on changing these assignments.
- ◆ Your Master User establishes your User Profile (and designates your printer).
- ◆ When issued, the PRINT command updates change control information for the entity if changes were made. This change control information can be viewed on the program profile.

Example

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===> PRINT
***** START OF PROGRAM*****
00010 ENTRY INDEX
00020 .FILE RECORD("INDEX","SERENDIPITY")
00030 .SCREEN MAP("INDEX")
00040 .WHILE RECORD<>"END"
00050 ..CONVERSE MAP
00060 .END
00070 .STOP
00080 EXIT
' ' ' '
***** END OF PROGRAM*****
```

PROFILE

Use the PROFILE command, an FSE primary command, to display and temporarily change the edit profile for the duration of the current session.

```
{ PROFILE }  
{ PROF }
```

General considerations

- ◆ The PROFILE command, issued from FSE, allows you to temporarily change the edit profile. (PF key settings and edit mode settings) for the duration of the current edit session only. These settings will be reset to the default values when you exit from the edit session. Any permanent changes to PF key settings can be made by your Master User.
- ◆ You can supply values (1–29 alphanumeric characters) for up to 24 PF keys. Default values include those commands listed in the sample of the EDIT PROFILE screen shown below. You can stack multiple primary commands on a PF key by separating them with a colon (:). An example is SEQUENCE:REPLACE.
- ◆ UPPERCASE=YES translates everything in FSE to uppercase. UPPERCASE=NO leaves text strings (those within double quotes) and everything behind comment bars as entered.
- ◆ NULLS provides trailing nulls (ON) or trailing blanks (OFF) for fields on the screen.
- ◆ INDENT indents program lines on a screen (ON) or specifies no indentation (OFF).
- ◆ SCROLL indicates the vertical scrolling amount:
 - PAGE scrolls a full page.
 - HALF scrolls half of a page.
 - CUR scrolls the line with the cursor to the top of the screen.
- ◆ The default PF key settings for the PROFILE command are PF12/24.

Example

```
                                FULL SCREEN EDIT PROFILE
-----
PF KEYS ( 1-12 )   PF KEYS ( 13-24 )
-----
  1  HELP                      13  RUN
  2  REPLACE                  14  REPLACE
  3  END                       15  END
  4  SEQUENCE                  16  SEQUENCE
  5  RFIND                     17  RFIND
  6  RCHANGE                   18  RCHANGE
  7  UP                        19  UP
  8  DOWN                      20  DOWN
  9  TOP                       21  BOT
 10  LEFT 10                   22  LEFT 10
 11  RIGHT 10                  23  RIGHT 10
 12  PROFILE                    24  PROFILE

UPPERCASE: YES :      NULLS: ON  :          INDENT: ON  :          SCROLL: PAGE:
-----
PRESS <ENTER> TO UPDATE;  <CANCEL> KEY TO CANCEL CHANGE AND EXIT
-----
```

To update the Profile for your FSE session, type over the displayed commands and press ENTER. You can use the EOF key or the space bar to clear a command assignment. To cancel your changes, press CANCEL.

PURGE

Use the PURGE command, both an FSE primary command and a Line Editor command, to erase a program from a library (but not from the current work area).

PURGE ["] [*program-name*] [*/password*] ["]

program-name

- Description** *Optional.* Specifies the name of the program you want to erase. If omitted, the current program is purged.
- Format** Must be a 1–32 character name.

password

- Description** *Optional.* Specifies the password under which the program was previously saved.
- Default** Your sign-on password.
- Format** Must be a 1–16 character name.

Considerations

- ◆ Supply only if the current program's password differs from the last password used.
- ◆ If the password does not match the password specified when you saved the program, MANTIS displays an error message instead of purging the program.

General considerations

- ◆ You can stack other commands with the PURGE command as long as you add quotes around the program name. For example, PURGE "PROGRAM":LOAD "NEW.PROGRAM". If you do not add the quotes, MANTIS adds the other commands as part of the program name.
- ◆ You can also delete a program from your EEPR directory list by entering the PURGE command in the action field next to the program name.
- ◆ If issued from *n*-level edit, the PURGE command displays the message PLEASE CONFIRM PURGE COMMAND. The command line is not cleared and the cursor is placed on the first position of the command line. To confirm the PURGE command, press ENTER. When confirmed, the program is purged from your library with the message user:progname PURGED FROM LIBRARY, but the program remains in the FSE work area. You can then SAVE or REPLACE the program under another name, return to the previous edit level with the CANCEL or END commands, or enter the MENU or LOGOFF commands.

If you decide not to confirm the PURGE command, you must type over PURGE (or press the erase EOF key) to clear the command line and continue with the session.

The PURGE confirmation is required when you make changes to the program at top-level, select a component to edit, then return to top-level edit and issue the PURGE command.

- ◆ When issued, the PURGE command deletes all change control information on the program profile for the purged program. In addition, PURGE deletes the entity cross-references built by the CREF command.
- ◆ If you save a quoted string with lowercase support turned on, the password will be saved as entered (lowercase) and the program name will be translated to uppercase.

Example

```
PURGE EXAMPLE_PROGRAM  
PURGE your_library:YOUR_PROGRAM/your-password
```

QUIT

The QUIT command terminates programming mode and returns you to the previous screen from the Line Editor or the Program design screen from the FSE (Full Screen Editor). In the Line Editor, you can exit programming mode only with the QUIT command.

QUIT

General considerations

- ◆ If you issue a QUIT command before saving or replacing your program both in the Line and Full-Screen Editors, it will be lost.
- ◆ In the Full-Screen Editor, the QUIT command (unlike the CANCEL/PA2 command) exits without asking for confirmation.
- ◆ If FSE is entered via the Program Directory List, and you have selected multiple programs for editing, they will not be edited. MANTIS will return to the Program Directory List immediately.

Example

```

EDIT - EXAMPLES:CUST_ENTRY
COMMAND ==> QUIT
***** *****TOP OF PROGRAM*****
00010 ENTRY INDEX
00020 .FILE RECORD("INDEX", "SERENDIPITY")
00030 .SCREEN MAP("INDEX")
00040 .WHILE RECORD<>"END"
00050 ..CONVERSE MAP
00060 .END
00070 .STOP
00080 EXIT
      ' ' ' '
***** *****END OF PROGRAM*****

```

R (repeat)

Use the REPEAT command, an FSE line command, to copy a line or lines in a program immediately following the line(s) you mark.

R
Rn
RR
RRn

R

Description Indicates that you want to repeat a single line.

Rn

Description Specifies the total number of lines you want to repeat, starting with the line where this command appears. (The default number is one.)

RR

Description Indicates a block of lines you want to repeat. Mark the first and last lines of the block with the RR command.

RRn

Description Indicates a block of lines you want to repeat “*n*” times. You must enter *n* on the first and last occurrences of RR.

General considerations

- ◆ Both R and RR repeat lines *immediately* after the line you mark.
- ◆ RR repeats a block of lines including the first and last lines you mark.
- ◆ Multiple REPEAT commands (multiple R commands or sets of RR commands) could yield unexpected results when the program line numbers are sequenced by 1 from one REPEAT command to the next. This situation will not occur when program lines are sequenced by any number greater than 1.
- ◆ If you use R*n* (or RR*n*), and *n* is the same number as the number you are typing over (part of the sequence number), then you must include a space after R*n* or RR*n*, for example, “R2 ”.

Examples

```

EDIT - EXAMPLES:CUST_EDIT
COMMAND ===>
***** *****START OF PROGRAM*****
00001 ENTRY CUST_EDIT
00002 .SCREEN MAP("CUST_SCREEN2")
rr003 .CONVERSE MAP
00004 .WHILE MAP<>"CANCEL"
00005 ..DO CUST_UPDATE
00006 .END
00007 .CHAIN "MENU_PROGRAM"
00008 .STOP
rr009 EXIT
' ' ' '
***** *****END OF PROGRAM*****

EDIT - EXAMPLES:CUST_EDIT
COMMAND ===>
***** *****START OF PROGRAM*****
00001 ENTRY CUST_EDIT
00002 .SCREEN MAP("CUST_SCREEN2")
00003 .CONVERSE MAP
00004 .WHILE MAP<>"CANCEL"
00005 ..DO CUST_UPDATE
00006 .END
00007 .CHAIN "MENU_PROGRAM"
00008 .STOP
00009 EXIT          <==      You can now
00010 .CONVERSE MAP          modify the
00011 WHILE MAP<>"CANCEL"    repeated
00012 .DO CUST_UPDATE        lines.
00013 END
00014 CHAIN "MENU_PROGRAM"
00015 STOP
00016 EXIT
***** *****END OF PROGRAM*****

```

RCHANGE

Use the RCHANGE command, an FSE primary command, to repeat the last CHANGE command you issued.

```
{ RCHANGE }  
{ RCHG   }  
{ RC     }
```

General considerations

- ◆ MANTIS changes the next occurrence of the text string, highlighting the line and moving the cursor to the first character of the text string which was changed.
- ◆ You will normally issue RCHANGE by pressing a PF key. The default PF key settings for the RCHANGE command are PF6/18. See “**PROFILE**” on page 265 for details on changing these assignments for the duration of one edit session.
- ◆ If Uppercase is set to N on the EDIT Program Entry panel, or NO on the Full-Screen Edit Profile panel, there are special considerations when using the RCHANGE command. See the CHANGE command for details.

Examples

(CHANGE command previously issued was: C MAP SCREEN1)

```

EDIT - 1 OCCURRENCE OF WORD 'MAP' CHANGED
COMMAND ===> RC
***** START OF PROGRAM*****
00001 ENTRY INDEX
00002 .FILE RECORD("INDEX", "SERENDIPITY")
00003 .SCREEN SCREEN1("INDEX") <==CURSOR
00004 .WHILE RECORD<>"END"
00005 ..CONVERSE MAP
00006 .END
00007 .STOP
00008 EXIT
***** END OF PROGRAM*****
EDIT - 1 OCCURRENCE OF WORD 'MAP' CHANGED
COMMAND ===>
***** START OF PROGRAM*****
00001 ENTRY INDEX
00002 .FILE RECORD ("INDEX", "SERENDIPITY")
00003 .SCREEN SCREEN1("INDEX")
00004 .WHILE RECORD<>"END"
00005 ..CONVERSE SCREEN1 <==CURSOR
00006 .END
00007 .STOP
00008 EXIT
***** END OF PROGRAM*****

```

REPLACE

The REPLACE command, both an FSE primary command and a Line Editor command, replaces a program in your library with the program currently in your work area.

REPLACE ["*program-name*] [*password*]/*description* ["

program-name

- Description** *Optional.* Specifies the name of the program to be replaced.
- Default** Current program name.
- Format** A standard symbolic name, 1–32 characters in length.
- Consideration** Specify only if the name under which you want to save the program differs from the name of the program currently in your work area.

/password

- Description** *Optional.* Specifies the password under which the program was previously saved.
- Default** Last password used.
- Format** A standard symbolic name, 1–16 characters in length.

Considerations

- ◆ Specify only if the password is different from the last password used.
- ◆ If the password does not match the password specified when you saved the program, MANTIS returns an error message instead of replacing the program.
- ◆ You cannot change passwords using the REPLACE command. See “Profile” on page 152 for information regarding changing the program password.

description

- Description** *Optional.* Specifies or changes the description of a program as it appears in the Program Directory List and on the Program Profile.
- Default** None, the existing description for the program will be blank if one was never entered.
- Format** Must be 1–46 alphanumeric character(s). The first character must be alphabetic.

Considerations

- ◆ Specify only if you want to add or change a program description.
- ◆ If you include a description, you must either include the password parameter or you must include a double slash between the program name and description (e.g., “REPLACE PROGRAMA//THIS IS AN EXAMPLE”).

General considerations

- ◆ You can save a program only once—thereafter you must replace it.
- ◆ If the password does not match the password specified when you saved the program, MANTIS returns an error message instead of replacing the program.
- ◆ You cannot change passwords using the REPLACE command. See “[Profile](#)” on page 152 for information regarding changing the program password.
- ◆ If you are replacing the program you loaded with the one now in your work area, you need not specify a program name, password or description.
- ◆ If you RUN a program containing a CHAIN statement, be sure that the proper program is in the work area before you REPLACE it or you will lose any modifications you have made.
- ◆ You can stack other commands with the REPLACE command as long as you add quotes around the program name. For example, REPLACE “PROGRAM”:LOAD “NEW_PROGRAM”. If you do not add the quotes, MANTIS adds the other commands as part of the program name.
- ◆ If you issue REPLACE when the “(HPO BOUND)” message appears next to the program name, MANTIS replaces your program in bound format.

- ◆ If you are using FSE, the default PF key settings for the REPLACE command are PF2/14. See “[Full-Screen Edit Profile](#)” on page 195 or the PROFILE command for details on changing these assignments for the duration of a single edit session.
- ◆ When issued the REPLACE command updates change control information for the entity if changes were made. This change control information can be viewed on the program profile.
- ◆ If a REPLACE results in the PPE (Error While Writing Program to Library) message, it is possible that CICS will not back out the updates correctly. This will result in a corrupt Setpray file. This can occur even with DTB and LOG=YES specified in CICS. One situation which causes this error is when Setpray needs to extend into another extent, and insufficient space is left on the disk. The corruption takes the form of missing records on Setpray, where the program (or other MANTIS entity) spans several records on Setpray. The solution is either to restore Setpray from a backup or to delete those records using a VSAM utility. If you are using batch to update Setpray, the same considerations apply because there is no VSAM recovery in batch.
- ◆ MANTIS allows you to REPLACE an illogical program (one that contains an unresolved condition). When you issue SAVE/REPLACE/END/MENU/LOGOFF either explicitly or by a PF key, a warning message appears: ‘PRESS ENTER TO CONFIRM ILLOGICAL SAVE/REPLACE’. The command that was issued will appear on the command line so that if/when ENTER is pressed the command will be executed. When you press ENTER, the screen will scroll up and highlight the unresolved statement.
- ◆ If you save a quoted string with lowercase support turned on, the password and description will be saved as entered (lowercase) and the program name will be translated to uppercase.

Example

```
REPLACE DATAENTRY
```

RESET

Use the RESET command, an FSE primary command, to reset any pending, ambiguous, or invalid primary commands, line commands, and commands issued from PF keys.

RES[ET]

General consideration

This command resets pending line commands. Do not confuse it with the MANTIS immediate-mode RESET command which backs out a Logical Unit of Work. You can execute the MANTIS immediate-mode command from FSE by prefixing it with the escape character (<). For example: (<RESET).

Examples

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===> RESET
***** *****START OF PROGRAM*****
00040 .WHILE MAP<>"CANCEL"
m 050 ..ERROR=FALSE
00060 ..DO VALIDATE_INFO
a 070 ..IF ERROR=FALSE
00080 ...INSERT REC
d2 90 ...CLEAR MAP
00100 ..END
r3 ...CONVERSE MAP
00120 .END
00130 .CHAIN"MENU_PROGRAM"
00140 .STOP
00150 EXIT
***** *****END OF PROGRAM*****
```

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00040 .WHILE MAP<>"CANCEL"
00050 ..ERROR=FALSE
00060 ..DO VALIDATE_INFO
00070 ..IF ERROR=FALSE
00080 ...INSERT REC
00090 ...CLEAR MAP
00100 ..END
00110 ...CONVERSE MAP
00120 .END
00130 .CHAIN"MENU_PROGRAM"
00140 .STOP
00150 EXIT
***** *****END OF PROGRAM*****
```

RFIND

Use the RFIND command, an FSE primary command, to repeat the last FIND command you issued. Since RFIND searches from the current cursor position, the default PF keys, PF5 and PF17, for RFIND are provided.

| | | |
|---|--------------|---|
| { | RFIND | } |
| { | RF | } |

General considerations

- ◆ MANTIS highlights the next occurrence of the text string and places the cursor on the first character of the text string.
- ◆ You will normally issue RFIND by pressing a PF key. The default PF settings for RFIND are PF5/17. See “[Full-Screen Edit Profile](#)” on page 195 or the PROFILE command to change these assignments for the duration of a single edit session.
- ◆ If Uppercase is set to N on the EDIT Program Entry panel, or NO on the Full-Screen Edit Profile panel, there are special considerations when using the RFIND command. See the FIND command for details.

Examples

```

EDIT - EXAMPLES:CUST_TALK
COMMAND ==>RF
***** *****START OF PROGRAM*****
00001 ENTRY NAMES
00002 .SCREEN MAP ("CUST_ENTRY", "ALIBABA")
00003 .WHILE KEY<>"CANCEL"
00004 ..CONVERSE MAP
00005 ..SHOW "ENTER YOUR SURNAME"
00006 ..OBTAIN "FIRST_NAME"                <== FIND command
      used
00007 ..IF (FIRST_NAME<"ZZZZZZZZZ")      to locate "FIRST"
00008 ...SHOW "THAT'S NOT YOUR FIRST NAME!"
***** *****END OF PROGRAM*****

EDIT - EXAMPLES:CUST_TALK
COMMAND ==>
***** *****START OF PROGRAM*****
00001 ENTRY NAMES
00002 .SCREEN MAP ("CUST_ENTRY", "ALIBABA")
00003 .WHILE KEY<>"CANCEL"
00004 ..CONVERSE MAP
00005 ..SHOW "ENTER YOUR SURNAME"
00006 ..OBTAIN "FIRST_NAME"
00007 IF (FIRST_NAME<"ZZZZZZZZZ")        <== RF repeats
      command,
00008 ..SHOW "THAT'S NOT YOUR FIRST NAME!"  finding next
      occurrence
***** *****END OF PROGRAM*****

```

RIGHT

Use the RIGHT command, an FSE primary command, to scroll your display toward the highest column on your terminal in a program listing.

RIGHT *n*

n

Description *Required.* Specifies the number of columns you want to scroll.

Format Must be a positive integer that is less than 254.

General consideration

The default PF key settings for the RIGHT command (default value is RIGHT 10) are PF11/23. See “[Full-Screen Edit Profile](#)” on page 195 or the PROFILE command for details on changing these assignments for the duration of a single edit session.

Examples

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===> RIGHT 15
***** *****START OF PROGRAM*****
00001 ENTRY MAINTENANCE
00002 .ACCESS RECORD("INDEX","SERENDIPITY",16)
00003 .SCREEN MAP("INDEX")
00004 .CONVERSE MAP
00005 .COUNTER=1
00006 .WHILE MAP<>"CANCEL" AND COUNTER<17
00007 ..WHEN INDICATOR(COUNTER)="G"
00008 ...SHOW "THIS IS A VALID NUMBER.  REMEMBER TO ENTER AL
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00001 CE
00002 "INDEX","SERENDIPITY",16)
00003 EX" )
00004
00005
00006 NCEL" AND COUNTER<17
00007 R(COUNTER)="G"
00008 ALID NUMBER.  REMEMBER TO ENTER ALL FIELDS.
```

RUN

The RUN command, both an FSE primary command and a Line Editor command, executes the program currently in the work area. In the Line Editor, the "PROGRAM ==> *program-name*" heading disappears from the screen while the program is running and reappears when the program is complete. A program will run until it encounters an invalid program statement, encounters a STOP statement, runs out of program statements, encounters a CHAIN statement, or until you issue a KILL command.

RUN [*n*]

n

Description *Optional.* Specifies the statement number where you want the run to begin.

Default The first line in your program.

Format A text expression which evaluates to a value *n-1*, where *n* is the maximum line number in your program.

Consideration MANTIS uses only the integer portion of *n*.

General considerations

- ◆ RUN with no parameter:

MANTIS erases all variables and arrays in the current program's work area and executes the program from the lowest numbered statement.

If you are running an external program, MANTIS starts at the first statement in the external program. Variables passed are retained at the point where execution stopped.

- ◆ If MANTIS detects syntax errors while running the program, it terminates execution and highlights the statement in error. MANTIS also displays an error message in the Title/Message field.

- ◆ **RUN *n***

MANTIS retains all variables and arrays from prior RUN executions and executes the current program from the specified statement number. Use this form of the RUN command to continue a program after it has been halted by an error condition or by a STOP statement. You will find this useful for interactive testing and debugging.
- ◆ The default PF key setting for the RUN command is PF13. See “[Full-Screen Edit Profile](#)” on page 195 or the PROFILE command for details on changing this assignment for a single edit session.
- ◆ If your program contains SHOW statements, you will need to add a WAIT statement after the last SHOW when you are running from FSE. If you do not add the WAIT statement, the last SHOW will not be visible before the editor replaces your program listing.

Example

```
COMMAND ==> RUN
***** *****START OF PROGRAM*****
00001 ENTRY CAPITAL
00002 .SHOW "WHAT IS THE CAPITAL AMOUNT?"
00003 .WAIT
00004 EXIT
***** *****END OF PROGRAM*****
```

S (select)

Use the S (select) command, an FSE line command, to select a program or component named in the COMPONENT, REPLACE, or SOURCE statements for editing in FSE.

S

General considerations

- ◆ The S line command selects a component named in the COMPONENT statement of a source program, a program named in the REPLACE statement of a source program, or a program named in the SOURCE statement of an executable program.
- ◆ When you issue the S line command, the source program that is currently being edited (top-level edit) is saved in a temporary name (if you made changes to it) and the selected component (*n*-level edit) is loaded into the FSE work area where it can be edited as any program during an FSE session. If the program (COMPONENT, SOURCE, REPLACE) you select does not exist, an empty FSE work area is displayed to allow you to insert new program lines. (This is the same screen displayed when you issue the primary command NEW.) When you return from editing this program (*n*-level), the original source program (top-level) will be displayed along with any unsaved changes made to the source program.
- ◆ Changes made in an *n*-level edit session can be saved using the primary commands SAVE, REPLACE, END, MENU, or LOGOFF. If you press PA2 (CANCEL), and you have unsaved changes, FSE will prompt you to confirm this cancel.
- ◆ The S line command is only valid when the terminal is positioned at column one. If an 'S' is issued after a RIGHT command, the message " 'S' LINE COMMAND NOT VALID FOR THIS LINE" displays.
- ◆ The S line command allows a program named in a COMPONENT, SOURCE, or REPLACE statement to be selected for editing during a edit session with a top-level program. This command is only valid on the statements COMPONENT, REPLACE, and SOURCE. If you issue S for statements other than these, the message " 'S' LINE COMMAND NOT VALID FOR THIS LINE" will display.

- ◆ If the COMPONENT, REPLACE, or SOURCE statements do not contain valid parameters, or have more than two sets of double quotes (""") around the parameters, or have a syntax error, the message THIS LINE NOT VALID FOR SELECTION will be displayed for the COMPONENT, REPLACE, or SOURCE statement in error.
- ◆ The RUN command can be issued on a component that is lower (*n*-level) than the top-level edit. This means that a program which is currently being edited at *n*-level can be executed by using the RUN command. Generally, the RUN command will produce the same results at *n*-level that it produces at top-level. However, some exceptions apply:
 - If an *n*-level edit program contains an external DO and the program being done contains an error (or you issue the KILL command), the program being done will replace the original (*n*-level) program being edited, and the edit level will be unchanged.
 - If an *n*-level edit program contains a CHAIN, the chained-to program will replace the *n*-level edit program.
 - If you issue the LOAD or NEW commands from an *n*-level edit program, the *n*-level edit session will end and any changes made in the program stack will be lost. The edit level of the new program (resulting from LOAD or NEW) will be top-level.
 - If you issue the END, MENU, or LOGOFF command from an *n*-level edit program, any changes will be saved and the top-level edit program will be displayed.
- ◆ The S line command functions as any other line command. You can enter it over a line number field of the source program currently being edited. Only one S command at a time can be entered on the line number field. If more than one is entered, the message ""S' LINE COMMAND NOT VALID FOR MORE THAN ONE LINE"" will be displayed.
- ◆ The S line command is only valid for single level below the top-level edit program. If S is issued from an edit level deeper than a single level edit, the message ""S' LINE COMMAND LIMITED TO 1 LEVEL"" will be displayed. To correct the condition, erase the S line command and press ENTER.

- ◆ When changes are made to an existing component at n -level, (and these are saved in your library with an END or a REPLACE command), when you exit from n -level edit, the characters REP (for REPLACE) will be displayed (as a confirmation message) in the line number next to the program that was edited.
- ◆ When a COMPONENT (or SOURCE or REPLACE) statement (for a currently nonexistent entity) is selected with the S line command from top-level edit, lines can be added and the component can be saved with the SAVE or END command. When you exit from the n -level edit session, the characters SAV (for SAVE) will be displayed in the line number next to the component that was edited.

Examples

```

EDIT --- ACCOUNT:CUST_BROWSE@
COMMAND ==>
***** *****START OF PROGRAM*****
00010 ENTRY CUST_BROWSE
00020 .f@SOURCE"ACCT:CUST_BROWSE@/PASSWORD/CUSTOMER BROWSE -
SOURCE"
00030 .REPLACE"ACCT:CUST_BROWSE/PASSWORD/CUSTOMER BROWSE -
EXECUTABLE"
00040 .TEXT PROGRAM_ID(49):PROGRAM_ID="ACCT:CUST_BROWSE"
00050 .DO INIT_PROC
00060 .FUNCTION_TYPE=FUNCTION_UPDATE
00070 .DO OPEN_FILES
00080 .DO MAIN_LOGIC
00090 .DO TERMINATE_PROC
00100 EXIT
s0110 COMPONENT"ACCOUNT:CUST_INIT/PASSWORD"
00120 COMPONENT"ACCOUNT:CUST_INIT_HEADER/PASSWORD"
00130 COMPONENT"ACCOUNT:CUST_OPEN_PROC/PASSWORD"
***** *****END OF PROGRAM*****

```

Note in this example, the at sign (@) appended to the program name indicates a Component-Engineered source program.

From the COMPONENT statements in the source program above, the statement on line 110 has been selected for *n*-level editing with the S line command. When you press ENTER, the following FSE screen displays the selected component for editing:

```
EDIT --- ACCOUNT:CUST_INIT
COMMAND ===>
***** *****START OF PROGRAM*****
00010 ENTRY INIT_PROC
00020 .TEXT PROGRAM_ID(20):FUNCTION_TYPE(8)
00030 .TEXT MESSAGE(80),ERROR MESSAGE(80)
00040 .SMALL
      REQUEST_VALID,DATA_VALID,ERROR_COUNT,VALID_DATA_COUNT
00050 EXIT
***** *****END OF PROGRAM*****
```

SAVE

Use the SAVE command, both an FSE primary command and a Line Editor command, to copy the program currently in the work area into a library.

SAVE ["] [program-name] [/password][/description] ["]

program-name

- Description** *Optional.* Specifies a name under which you want to save a program. If not specified, MANTIS assumes the current program. If there is no current program, MANTIS will use your library as the program name.
- Format** A standard symbolic name, 1–32 characters in length.

password

- Description** *Optional.* Specifies the password under which you want to save the program.
- Default** Sign-on password.
- Format** A standard symbolic name, 1–16 characters in length.
- Consideration** Specify only if the password will differ from the current password.

description

- Description** *Optional.* Specifies a description of the program as you want it to appear in the directory listings.
- Format** 1–46 alphanumeric character(s).
- Consideration** If you include a description, you must either supply the password parameter or you must include a double slash between the program name and the description (e.g., SAVE PROGRAMA// THIS IS AN EXAMPLE).

General considerations

- ◆ It is recommended that you do not use blanks in program names.
- ◆ You can stack other commands with the SAVE command as long as you add quotes around the program name (e.g., SAVE "PROGRAM":LOAD "NEW_PROGRAM"). If you do not add the quotes, MANTIS adds the other commands as part of the program name.
- ◆ If you issue SAVE when the "(HPO BOUND)" message appears next to the program name, MANTIS saves your program in bound format.
- ◆ If a SAVE results in the PPE (Error While Writing Program to Library) message, it is possible that CICS will not back out the updates correctly. This will result in a corrupt Setpray file. This can occur even with DTB and LOG=YES specified in CICS. One situation which causes this error is when Setpray needs to extend into another extent, and insufficient space is left on the disk. The corruption takes the form of missing records on Setpray, where the program (or other MANTIS entity) spans several records on Setpray. The solution is either to restore Setpray from a backup or to delete those records using a VSAM utility. If you are using batch to update Setpray, the same considerations apply because there is no VSAM recovery in batch.
- ◆ MANTIS allows you to SAVE an illogical program (one that contains an unresolved condition). When you issue SAVE/REPLACE/END/MENU/LOGOFF either explicitly or by a PF key, a warning message appears: 'PRESS ENTER TO CONFIRM ILLOGICAL SAVE/REPLACE'. The command that was issued will appear on the command line so that if/when ENTER is pressed the command will be executed. When you press ENTER, the screen will scroll up and highlight the unresolved statement.
- ◆ If you save a quoted string with lowercase support turned on, the password and description will be saved as entered (lowercase) and the program name will be translated to uppercase.

Example

```
SAVE DATAENTRY
```

SCROLL

Use the SCROLL command, both an FSE primary command and a Line Editor command, to determine the scrolling mode of the terminal, or scrolling increments for window mode.

```
SCROLL [ OFF
        ON
        [row]1 [,col]1 ]
```

OFF

Description *Optional.* Specifies that data displayed with a SHOW statement will scroll from top to bottom on the screen.

Format Must be coded exactly as shown.

ON

Description *Optional.* Specifies that all data displayed with a SHOW statement appear at the bottom of the screen. ON is the default.

Format Must be coded exactly as shown.

Consideration All previous lines are “bumped” up by one line and the top line is lost.

row₁ col₁

Description *Optional.* Specifies scrolling increments for window mode PF keys.

Default The physical size of the current terminal.

General considerations

- ◆ Data displayed with SCROLL OFF overwrites the oldest line on the screen. The display starts at the top of the screen and the last line of output is highlighted.
- ◆ In FSE, the SCROLL command will not affect the editor display. It will, however, affect the SHOW statement as documented previously.
- ◆ See the DOWN, LEFT, RIGHT, and UP FSE commands for scrolling the editor screen on the program work area.
- ◆ Before specifying SCROLL OFF for remote-site processing, see your Master User.

Example

```
30 SHOW "PLEASE ENTER MINIMUM AND MAXIMUM RANGE "  
40 SHOW "OF NUMBERS TO BE SELECTED. "  
50 SHOW "INPUT IN THE FORMAT OF MIN,MAX (EX. 999,9999)"  
60 OBTAIN MIN, MAX  
70 CLEAR  
80 SCROLL OFF  
90 GET RECL
```

SEQUENCE

Use the SEQUENCE command, both an FSE primary command and a Line Editor command, to renumber the program lines currently in the work area. MANTIS assigns $n1$ to the first statement and increments by $n2$ for each succeeding statement.

SEQUENCE [$n1$ [, $n2$]]

$n1$ and $n2$

| | |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> $n1$ specifies the number you want the first statement to have, and $n2$ specifies the number by which you want your statements to increase. |
| Default | 10 |
| Format | Must be an arithmetic expression which evaluates to a value in the range 1–30000. |

Consideration MANTIS uses only the integer portion of n .

General considerations

- ◆ The default PF key settings for the SEQUENCE command are PF4/16. See “[Full-Screen Edit Profile](#)” on page 195 or the PROFILE command for details on changing these assignments for the duration of a single edit session.
- ◆ When you use FSE, you may want to resequence your program by 10 to avoid confusion with line commands.

Examples

```
SEQUENCE
SEQUENCE 100
SEQUENCE 100,5
SEQUENCE 1,1
```

TOP

Use the TOP command, an FSE Primary command, to move your terminal window to the top of your current program.

TOP

General consideration

The TOP command is identical to the LIST and LOCATE commands when used without parameters.

Example

```
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===> TOP
***** *****START OF PROGRAM*****

00160 .END
00170 .STOP
00180 EXIT
***** *****END OF PROGRAM*****
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00010 ENTRY CUST_REPORT
00020 .SCREEN MAP("BURRYS_SCREEN1")
00030 .FILE REC("BURRYS_FILE1",PASSWORD,15)
00040 .WHILE MAP<>"CANCEL" AND REC<>"END"
00050 ..CLEAR MAP
00060 ..LET BUFFER=1
00070 ..GET REC LEVEL=BUFFER
00080 ..WHILE REC<>"END" AND BUFFER<15
00090 ...BUFFER=BUFFER+1
00100 ...GET REC LEVEL=BUFFER
00110 ..END
00120 ..CONVERSE MAP
00130 ..WHEN MAP="CANCEL" OR REC="END"
00140 ...CHAIN "MENU_PROGRAM"
00150 ..END
00160 .END
```

UP

Use the UP command, an FSE primary command, to scroll your display toward line one in a program listing.

UP [*n*]

n

Description *Optional.* Specifies the number of columns you want to scroll. If you omit *n*, MANTIS uses the value that appears in the scroll field at the upper right of the screen.

Consideration The default PF key settings for the UP command are PF7/19. See the PROFILE command for details on changing these assignments.

Examples

```

EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===> UP 16
00170 .STOP
00180 EXIT
***** *****END OF PROGRAM*****
EDIT - EXAMPLES:CUST_ENTRY
COMMAND ===>
***** *****START OF PROGRAM*****
00010 ENTRY CUST_REPORT
00020 .SCREEN MAP("BURRYS_SCREEN1")
00030 .FILE REC("BURRYS_FILE1",PASSWORD,15)
00040 .WHILE MAP<>"CANCEL" AND REC<>"END"
00050 ..CLEAR MAP
00060 ..LET BUFFER=1
00070 ..GET REC LEVEL=BUFFER
00080 ..WHILE REC<>"END" AND BUFFER<15
00090 ...BUFFER=BUFFER+1
00100 ...GET REC LEVEL=BUFFER
00110 ..END
00120 ..CONVERSE MAP
00130 ..WHEN MAP="CANCEL" OR REC="END"
00140 ...CHAIN "MENU_PROGRAM"
00150 ..END
00160 .END

```

USAGE

Use the USAGE command, a Line Editor command, to determine where a symbolic name appears in a program. MANTIS searches each statement within a given range for the symbolic name you specify.

USAGE *field-name* [, *n1* [, *n2*]]

field-name

| | |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>Required.</i> Specifies the symbolic name for which you want to search. This can be a variable name, screen, file, or interface name. |
| Format | A standard symbolic name. |

n1 and *n2*

| | |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> <i>n1</i> specifies the first statement number of the search; <i>n2</i> specifies how many occurrences of the symbolic name you want to display. |
| Default | <i>n1</i> first line in the program. <i>n2</i> number of lines available on your terminal. |

Considerations

- ◆ Both *n1* and *n2* must be arithmetic expressions which evaluate to a value in the range of 1–30000.
- ◆ MANTIS uses only the integer portion of *n*.

General consideration

You can terminate a USAGE listing at any time by entering KILL.

Example

```
USAGE RECL
10 FILE RECL("INDEX", "SERENDIPITY")
30 GET RECL
40 WHILE RECL<>"END"
50 GET RECL
```

6

Component Engineering Facility (CEF)

This chapter is organized as outlined in the following table:

| Topic | Description | Section |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| Designing and Modifying Components | Discusses general criteria for designing and modifying components. Also discusses naming and storage considerations. | “Designing and modifying components” on page 303 |
| Source Programs | Defines source programs and explains how to code the COMPONENT, SOURCE and REPLACE statements. | “Source programs” on page 307 |
| Compose | Discusses how the Compose action assembles a source program into an executable program. | “Compose” on page 315 |
| Decompose | Explains how to modify components, source programs and composed programs using the Decompose action. | “Decompose” on page 326 |
| CEF Check | Discusses how to use CEF Check to determine whether a source program needs to be recomposed. Also describes how to create trigger records. | “CEF Check” on page 341 |
| Cross Reference (CREF) | Discusses how CREF cross references components and programs in your library to build the Bill of Materials List. | “Cross Reference (CREF)” on page 352 |
| Bill of Materials | Discusses how to display the Bill of Materials List and the Component Where Used List. | “Bill of Materials” on page 357 |

To become familiar with CEF terms and definitions, see the Glossary at the back of this manual. For the detailed descriptions of each field on CEF panels, see “Field descriptions” on page 427.

Overview of the Component Engineering Facility

The MANTIS Component Engineering Facility (CEF) incorporates the software methodology of Component Engineering. CEF allows you to create MANTIS programs that include reusable subroutines, called components. Programs created using CEF are known as component-engineered programs. You can create new component-engineered programs, or you can modify existing programs to contain component-engineered code.

Components usually have value in more than one application design, but are often difficult to locate and use in complex applications. To facilitate component management, CEF provides the CEF Check, Cross-Reference and Bill of Materials options. These options report on the status of components and their relationships to other components, as well as their relationships to the programs that use them.

Accessing the Component Engineering Facility

To access CEF, select Design a Program from the MANTIS Facility Selection menu (see “[General overview of the Program Design Facility](#)” on page 24). MANTIS returns the Program Design Facility menu shown in the following screen illustration. The CEF options are located under the Component Engineering group heading.

```

PRGMMENU01      Program Design Facility (ACCT)                YYYY/MM/DD HH:MM:SS
===>

Please select one of the menu items below.

      Program      Component Engineering  Bind Options      Utilities
-----
  1. List          7. CEF Check          12. HPO Check     18. Audit Trail
  2. Edit          8.  " Compose          13.  " Bind       19. Browse Audit Trail
  3. Profile       9.  " Decompose       14.  " Unbind     20.  " Prgm Profile
  4. Purge        10. CREF Programs     15. SQL Check    21. Trigger List
  5. Copy         11. Bill of Materials 16.  " Bind       22. SQL Maint
  6. Rename

000:  READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F9=RETRIEVE  F12=CANCEL ...

```

Component Engineering Facility elements

A component is any subroutine that performs a specific function common to more than one program. Components are the “building blocks” of your application because they can be used and reused as necessary at various locations. Once you decide which subroutines will become components in your application, you code COMPONENT statements in a source program. The COMPONENT statement indicates that the component code will be pulled into the executable program generated when you issue the Compose action on the source program.

A source program is a program that contains MANTIS source code and at least one COMPONENT statement. Source programs are not executable. CEF provides a special option, Compose, that assembles (composes) a source program containing commented COMPONENT statements (*COMPONENT) and related component code into a composed program that you can edit and run.

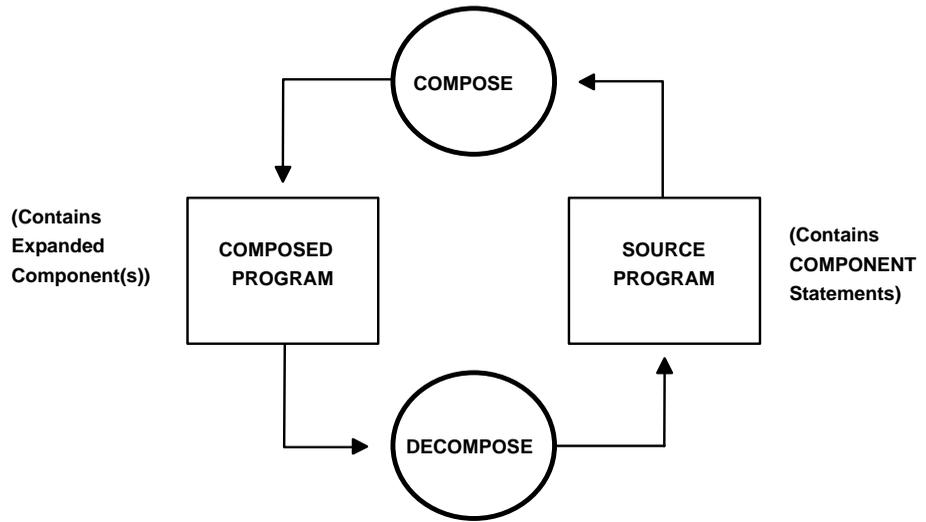


All composed programs are executable programs, but not all executable programs are composed programs. In this manual, the term “executable program” refers to any program which can be run in MANTIS. The term “composed program” refers to an executable program that is the result of issuing the Compose action on a source program.

When you want to change component code, you can make the change directly in the composed program and issue the CEF Decompose action. Decompose reverses the Compose process and disassembles the composed program into source code and component code and automatically updates your library with any changes you have made. In other words, when you change component code you only have to make the change in one component. The Bill of Materials and CEF CHECK process indicates what other programs are affected by your change.

Relationship between source programs

The following figure provides an overview of the relationship between source programs, the Compose action, composed programs, and the Decompose action:



How CEF works

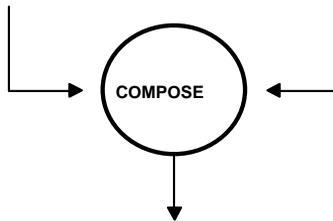
The following figure provides a detailed picture of how CEF works. The figure shows four components that originate in a library; CONVERSE_MAP, EDIT_DATA, INIT_PROC, and OPEN_FILES. The components are coded into a MANTIS source program using four COMPONENT statements. The Compose action is issued on the source program, resulting in a composed program that you can edit and run.

Components in Library

```
CONVERSE_MAP
EDIT_DATA
INIT_PROC
OPEN_FILES
```

MANTIS Source Program (with COMPONENT Statements)

```
ENTRY_CUST_INSERT
.COMPONENT "ACCT:OPEN_FILES"
.DO INIT_PROC
.DO CONVERSE_MAP
.WHILE MAP<>"CANCEL"
..DO EDIT_DATA
..DO CONVERSE_MAP
.END
EXIT
COMPONENT "ACCT:INIT_PROC"
COMPONENT "ACCT:CONVERSE_MAP"
COMPONENT "ACCT:EDIT_DATA"
```



Composed (Executable) MANTIS Program

```
ENTRY CUST_INSERT
|*COMPONENT "ACCT:OPEN_FILES"
.FILE RECORD("ACCT:CUST_MAINT"/DEPT1234
.SCREEN MAP("CUST_MAINT")
|*CEND
.DO INIT_PROC
.DO CONVERSE_MAP
.WHILE MAP<>"CANCEL"
..DO EDIT_DATA
..DO CONVERSE_MAP
.END
EXIT
|*COMPONENT "ACCT:INIT_PROC"
ENTRY INIT_PROC
.
.
EXIT
|*CEND
|*COMPONENT "ACCT:CONVERSE_MAP"
.
.
|*CEND
COMPONENT "ACCT:EDIT_DATA"
.
.
|*CEND
EXIT
```

If you wanted to change one of the components in the example above, you would make the change directly in the composed program and then issue the Decompose action. The Decompose action reverses the Compose process and splits the composed program into source code and component code and automatically updates your library with the changes.

Designing and modifying components

Designing and modifying reusable components simplifies your coding effort by allowing the optimal use, reuse, and management of programs. You can modify your components individually or directly in a composed program. This section discusses the criteria for designing and modifying components.

Designing components

The first step in designing and coding components is determining which subroutines required for your application are good candidates to become components. A component is a subroutine that can be used and reused as necessary at various locations throughout the application. The components you select may already exist as subroutines in your application, or you may want to code new ones. This section discusses how to select subroutines to become components.

A well-designed component is one that will be used throughout your application in more than one program. A good example of a component is the standard subroutine used for check-digit computation of account numbers in the banking industry. This subroutine is a typical component because it appears in more than one program of a banking application. A date conversion routine and an initialization routine are two more examples of components.

You can use existing subroutines as components or you can code new ones. Like any other MANTIS program, a component is stored in your library. You can store components in a common library, or in separate libraries. If you store components in a common library, it is important to establish naming standards to distinguish between programs and components. This manual identifies components with the prefix "CUS", for example, CUS_INIT_HEADER.

Once components have been created and reside in a program library, you use them simply by coding a COMPONENT statement in a source program for each component you want to use. Code the COMPONENT statements in the order in which the components are to be brought into the program. (For information on coding the COMPONENT statement in a source program, see “Source programs” on page 307.) When you issue the Compose action on the source program, the MANTIS source code and the component code are assembled into a separate, composed program that you can edit and run. For information on the Compose action see “Compose” on page 315.

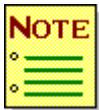
General considerations

- ◆ Components can reside in any library as long as the COMPONENT statement contains the correct password. You can select a COMPONENT statement from another user library—using the S (select) line command—but you cannot replace it in that library. See “S (Select) line command in source programs” on page 313 for information on using the S (select) line command.
- ◆ COMPONENT statements in the source program must have a corresponding component in the library before you issue the Compose action on the source program, or an error message will be displayed.
- ◆ A COMPONENT statement cannot refer to a program which contains a COMPONENT statement. This means components are single-level only (one level between the components and the source program). If a component contains a COMPONENT statement, that statement will be ignored when you issue the Compose action. If you then attempt to execute the composed program, the ignored COMPONENT statement would cause the program to fail.

Modifying components

CEF provides two ways to modify component code: by editing the individual component code in the Full-Screen Editor, replacing it, and issuing the Compose action on the source program; or by editing the component code directly in a composed program using the Full-Screen Editor, replacing it, and issuing the Decompose action. These two methods are discussed in detail below:

- ◆ To modify individual component code, follow these steps:
 1. Select the component from your library and use the Full-Screen Editor to make changes. When you change individual components in the source program, the composed program no longer reflects the updated component code.



Alternatively, you can load the source program into the Full Screen Editor (FSE) and use the 'S' (select) line command to select the component for editing. See ["S \(Select\) line command in source programs"](#) on page 313 for information on using the 'S' (select) line command.

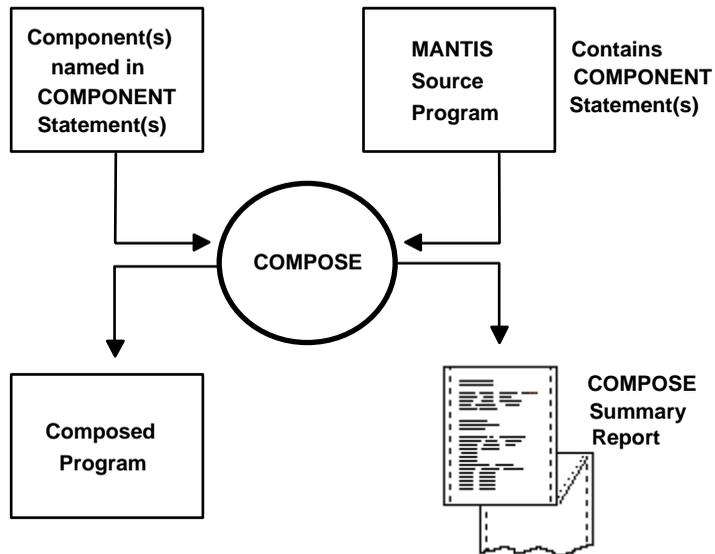
2. Issue the Compose action on the source program to apply the component changes to the composed program. (See ["Compose"](#) on page 315 for information on the Compose action.) At any point in this process, you can check the status of the components by issuing the CEF Check action on the source program to determine which components changed since the last Compose on the source program. (See ["CEF Check"](#) on page 341 for information on using CEF Check.

- ◆ To change the expanded component code in a composed program, follow these steps:
 1. Select the composed program from your library and use the Full-Screen Editor to make changes directly to the expanded component code.
 2. Nominate the components to be decomposed by coding the at sign (@) character in place of the asterisk (*) in the commented COMPONENT statement of the program. The vertical bar (|) must remain as the first character and the at sign (@) character must be the second character in the commented COMPONENT statement.
 3. If you made changes to MANTIS source code and components (or source code only), you must supply a SOURCE statement nominated with the at sign (@) in the composed program before you decompose it. MANTIS will then create/replace the source program as well as any nominated components. See “SOURCE statement in executable programs” on page 330 for information on the SOURCE statement.
 4. Issue the Decompose action on the composed program. (Decompose is discussed in “Component Where Used List” on page 362). Decompose recognizes the “|@” as the component nominated to be decomposed, and the |*CEND statement as the end of the nominated component. No other components will be affected unless you mark them this way.
 5. You can set the Function Option “Decompose all?” to Y (yes) on the DECOMPOSE Program Entry panel to have all components in the program decomposed, even if no changes were made to them. To save resources, use this option with discretion.

Source programs

A source program is a program that contains MANTIS source code and at least one COMPONENT statement. Source programs are not executable. You can create a new source program using the Full-Screen Editor (FSE). You can also modify an existing executable program to contain blocks of code bounded by `|@COMPONENT/|*CEND` statements and then issue the Decompose action to split the program into source code and component code. (This method is discussed along with the Decompose action in “Decompose” on page 326.) The advantage of the first method is that its top-down design (that starts with creating the source program) provides an overall structure of which the components become a part.

A source program is used as input to the Compose action (described in “Compose” on page 315). The following figure shows the starting position of the source program in the Compose action:



This section explains how to create a new source program, discusses CEF naming conventions, and explains when and how to code the CEF statements, COMPONENT, REPLACE AND CSIOPTNS in a source program.

Naming conventions for source programs

CEF uses the at sign (@) character as the system default value to identify source programs in your library. The at sign (@) is appended to the end of a source program name. If you elect to use this naming convention, you will not need to include a REPLACE statement in the source program.

When you issue the Compose action (discussed in “Compose” on page 315) to assemble the source program and components into a composed program, CEF will recognize the at sign (@) and automatically assign the composed program with the same name as the source program—minus the at sign (@). For example, if you have a source program named CUST_BROWSE@, the composed program will be named CUST_BROWSE unless you override it by specifying some other name in a REPLACE statement. See “REPLACE statement in source programs” on page 311 for more information on using the REPLACE statement.

The following screen illustration shows the Program Directory List displaying source programs and composed programs:

```

PRGMLIST01          Program Directory List (ACCT)          YYYY/MM/DD HH:MM:SS
===>
Action  Name                Date      Time      Ver  FMT  Status
-----
CUST_BROWSE    <----composed    90/08/23  10:16:37  5  CB  ACTIVE
CUST_BROWSE@  <----source      90/08/23   9:36:27  3             ACTIVE
CUST_DELETE   <----composed    90/08/23   1:16:40  5  C   ACTIVE
CUST_DELETE@  <----source      90/08/23  11:36:59  3             ACTIVE
CUST_INSERT   <----composed    90/08/23  12:05:42  5  C   ACTIVE
CUST_INSERT@  <----source      90/08/23   2:10:59  3             ACTIVE
CUST_LIST     <----composed    90/08/23   4:06:45  5  C   ACTIVE
CUST_LIST@    <----source      90/08/23  13:37:21  3             ACTIVE
CUST_MAINT    <----composed    90/08/23   3:51:11  5  CB  ACTIVE
CUST_MAINT@   <----source      90/08/23  11:33:20  3             ACTIVE
.
.
.
.

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...
    
```

If you do not use the at sign (@) for source program names, use the terms “source”, “composed”, or “executable” in the description text for the program to distinguish between them.

Coding a new source program

You can code a new source program using the Full-Screen Editor. Your source program will contain MANTIS source code and at least one COMPONENT statement. A source program can also include the REPLACE statement and/or the CSIOPTNS statement.

The COMPONENT statement is required and identifies each component you want to use in the application. The REPLACE statement is used when you want to replace a composed program with a modified version and is only required if you do not use the at sign (@) to identify your source programs. The CSIOPTIONS statement is used to set options and is not required. The following table lists each statement and summarizes how it is used and when it is required:

| Statement | Usage | Required? |
|-----------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| COMPONENT | Identifies each component used. | Yes. At least one statement. |
| REPLACE | Indicates that a modified program will replace an existing one. Only one statement is recommended. | Yes, only if the at sign (@) is NOT appended to the source program name. |
| CSIOPTNS | Used to set options such as automatic Compose, sequence of line numbers, and comments. Only one statement recommended. | No, but needed to alter the SEQUENCE of composed program line numbers. |

The following sections provide detailed information on the COMPONENT, REPLACE, and CSIOPTNS statements as coded in source programs:

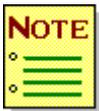
COMPONENT statement in source programs

The COMPONENT statement identifies each component you want to use in a MANTIS source program. The COMPONENT statement for source programs is coded as follows:

**COMPONENT"[*library:*] *component-name* [*/password*]
[*/description*]"**

COMPONENT statements can be coded in most places in your MANTIS program, but they cannot be coded as the first statement if the source program contains ENTRY/EXIT statements. This is because during the Compose action, the COMPONENT statement is commented (in the composed program) with the vertical bar (|). As the first statement of a program, a commented line would make the MANTIS program nonexecutable, if it precedes an ENTRY statement. Commented COMPONENT statement can be excluded from the composed program, but only if a CSIOPTNS statement specifying COMMENTS=NO has been coded in the source program (see “[CSIOPTNS statement in source programs](#)” on page 312 for information on coding the CSIOPTNS statement).

For consistency, COMPONENT statements can be coded following the last EXIT statement at the end of your MANTIS source program* (as shown in the examples in this manual). if the components consist of subroutines executed from the mainline code.**



* Component code will be placed in the composed program in the same order that the COMPONENT statements appear in the source program.



** If the components consist of subroutines bounded by ENTRY/EXIT statements, never specify the COMPONENT statement within the ENTRY/EXIT statements of the mainline routine. The Compose action would produce a nested ENTRY/EXIT pair which is not allowed in MANTIS.

Note that double quotes (“ ”) are required around the parameters of the COMPONENT statement, as shown in the examples. Also note that COMPONENT statements cannot be continued on subsequent lines. (See “How CEF works” on page 301 for an example of a source program containing components.)

If you set UPPERCASE to OFF in the Full-Screen Editor (FSE), the COMPONENT statement must be entered in uppercase mode in order to be recognized.

For more information about the COMPONENT statement including syntax, detailed parameter descriptions, and examples, see *MANTIS Language, OS/390, VSE/ESA*, P39-5002.

REPLACE statement in source programs

Code the REPLACE statement in a source program to identify the program that will be created (or replaced) by the Compose action in the form of a composed program. If you elect to append your source program names with the system default value of the at sign (@), then you do not need a REPLACE statement. However, if there is no REPLACE statement and you do not use the at sign (@), an error message will be displayed when you issue the Compose action. The REPLACE statement is coded as follows:

REPLACE"[*library:*] *program-name* [*/password*] [*/description*]"

Double quotes (“ ”) are required around the REPLACE statement, as shown in the examples in this manual.

If you set UPPERCASE to OFF in the Full-Screen Editor (FSE), the REPLACE statement must be entered in uppercase mode in order to be recognized.

For more information about the REPLACE statement that includes syntax, detailed parameter descriptions, and an example, see *MANTIS Language, OS/390, VSE/ESA*, P39-5002.

CSIOPTNS statement in source programs

Code the CSIOPTNS statement in a source program to specify one or all of three options; COMMENTS, FORCE, SEQUENCE. COMMENTS, FORCE, AND SEQUENCE are keyword parameters that you code in the CSIOPTNS statement (in any order) to specify specific actions when Compose is executed. The CSIOPTNS statement is coded as follows:

CSIOPTNS"[COMMENTS=yes] [:FORCE=yes] [:SEQUENCE n,n]"

The following table lists the CSIOPTNS options and results:

| Option | Result |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| COMMENTS | Indicates whether COMPONENT statements (and CEND statements) will appear as comments in the composed program. |
| FORCE | Indicates whether a source program will be composed (without a warning) if changes were made directly to the composed program since the last time you issued the Compose action. The warning, if requested, will appear as the Compose Confirmation panel when you attempt to compose the source program. |
| SEQUENCE | Specifies how the composed program lines will be sequenced. |

Any misspelled keyword parameters will be ignored and the defaults will be used. The COMPOSE Program Entry panel (described in this chapter) contains options for determining comments and for forcing a source program to be composed. You can set the options on the COMPOSE Program Entry panel to instruct Compose to use the parameters as they are coded in the CSIOPTNS statement (COMMENTS and FORCE only) or to override them. The CSIOPTNS statement is the only location in CEF where you can determine the sequence numbers of your composed program.

Double quotes (“ ”) are required around the CSIOPTNS statement, as shown in the examples in this manual.

If you set UPPERCASE to OFF in the Full-Screen Editor (FSE), the CSIOPTNS statement must be entered in uppercase mode in order to be recognized.

For more information about the CSIOPTNS statement that includes syntax, detailed parameter descriptions, and an example, see *MANTIS Language, OS/390, VSE/ESA, P39-5002*.

S (Select) line command in source programs

The S (select) line command is a Full-Screen editor line command that works with CEF to allow you to select the object of a COMPONENT or REPLACE statement from a source program to be edited in the Full-Screen Editor, or to select the object of a SOURCE statement from a composed program to be edited. The S line command is coded as follows over the line number in your MANTIS source program:

S

To use the S (select) line command, follow these steps:

1. Display your source program in the Full-Screen Editor (to select COMPONENT or REPLACE statements), or display the composed program in the Full-Screen Editor (to select the SOURCE statement). Enter the S line command over a line number. Only one S at a time can be entered on the line number field, and only for the statements COMPONENT, REPLACE, and SOURCE. Entering an S line command on multiple lines, or on any other type of statement, generates an error message.
2. Your top-level program is saved (in a temporary program name) if you changed it, and the S command loads your selected component into the Full-Screen Editor.
3. If the object you select does not exist, an empty Full-Screen Editor work area is displayed to allow you to insert new program lines to create and save this new object.
4. Create new code or modify existing code. Exit from the Full-Screen Editor. The top-level program will be displayed in the Full-Screen Editor with REP (replace) appearing over the line number of the statement which you selected. If the program is new and you save it with the SAVE command in the Full-Screen Editor, the line number of the selected statement in the top-level program will be SAV (save).
5. If you are modifying/creating components and all have been selected, edited, and replaced, the source program is ready to be composed.

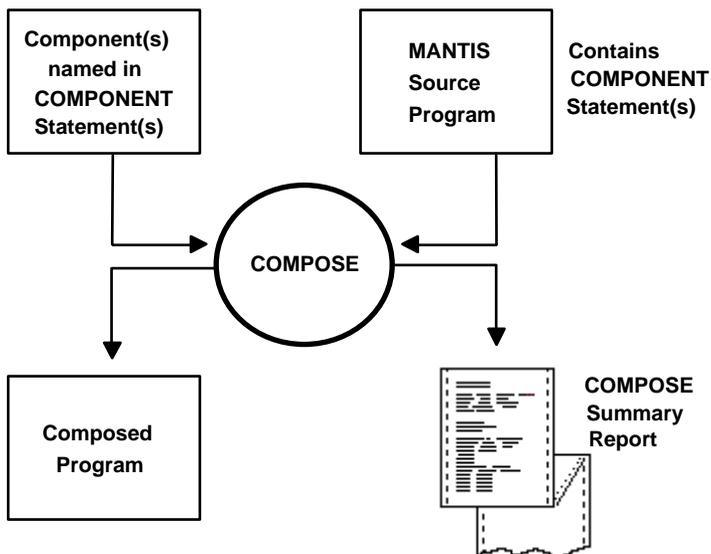
The following screen illustration demonstrates a source program in which line 0130 (bold in this example) was selected with the S line command, edited in the Full-Screen Editor, and replaced. REP appears on the replaced COMPONENT statement when returning to the source program.

```
EDIT --- ACCT:CUST_BROWSE@                                COLUMNS 1 73
COMMAND ==>>                                           SCROLL ==>> PAGE
***** ***** START OF PROGRAM *****
00010  ENTRY CUST_BROWSE@
      .
      .
00110  EXIT
00120  COMPONENT"ACCT:CUS_INIT"
REP30  COMPONENT"ACCT:CUS_INIT_HEADER"
00140  COMPONENT"ACCT:CUS_OPEN_PROC"
00150  COMPONENT"ACCT:CUS_CONVERSE_MAP"
***** ***** END OF PROGRAM *****
```

For a detailed description of the S (select) line command, see [“Using the Full-Screen Editor”](#) on page 165.

Compose

The Compose action assembles, or composes, a source program and component code into a composed MANTIS program that you can edit and run. The following figure illustrates the Compose action:



The Compose action is issued on a source program (containing COMPONENT statements) only. The components for each COMPONENT statement must exist in your library at the time you issue the Compose action, or you will receive an error message. The steps for creating a new source program and components and for issuing the Compose action are as follows:

1. Code a new source program using the Full-Screen Editor (FSE) and include COMPONENT statements (at least one) to identify each component you want to use.
2. Enter the S (select) line command on COMPONENT statements to select components to be created (or modified if they already exist). Save your changes.



You can also edit components directly without using the S (select) line command.

3. Code a REPLACE statement in your source program (if you do not append the source program name with “@”) to identify the composed program name that will result when you issue the Compose action.
4. Code the options you prefer in the COMMENTS, FORCE, and SEQUENCE parameters of the CSIOPTNS statement.
5. Save your changes in the Full-Screen Editor and exit from the editing session.
6. Issue COMPOSE on the source program.

Once the composed program is created, you can continue to make changes to the source program and issue the Compose action to replace a current composed program as necessary. You can repeat this cycle as often as needed when you alter MANTIS source programs or components.

There are several ways to start the Compose action:

- ◆ Select the Compose option from Program Design Facility menu with or without supplying a program name.
- ◆ Issue the Compose command and a program name at the Program Design Facility menu or issue the Compose command at the Program Directory List.

The COMPOSE command is coded on the command line of a panel as follows:

COMPOSE [program-name]

For more information about the COMPOSE command that includes syntax and detailed parameter descriptions, see *MANTIS Language, OS/390, VSE/ESA*, P39-5002.

The following table lists and briefly describes the panels used for the Compose action:

| Panel title | Description |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| COMPOSE Program Entry Panel | Lets you designate program names and set Function and Entry Options before issuing the Compose action. |
| COMPOSE Summary Report | The report displayed at the end of the Compose action, if you choose to display it. |
| Compose Confirmation Panel | Warns that you changed an executable program since the last time the source program was composed. If you issue the Compose action, the changes to that executable program will be overlaid. This panel gives you the chance to force or bypass the Compose action. |

Each panel is discussed in detail in the sections that follow.

COMPOSE Program Entry panel

The COMPOSE Program Entry panel is displayed when you select the Compose action without a program name, or when the “Confirmation?” Entry option on the COMPOSE Program Entry panel is set to Y (yes).

The panel allows you to supply the source program name, range of source program names, or generic pattern of source program names to be composed. You can also set the Entry and Function Options that will be applied to the designated programs during the Compose action, or you can let the system default values be used. When you press ENTER from this panel, the Compose action is started. A sample of the COMPOSE Program Entry panel is shown in the following screen illustration:

```

PRGMENT01A          COMPOSE Program Entry          YYYY/MM/DD HH:MM:SS
===>
From
  Library . . .    ACCT
  Name . . . .
  Description .

Thru
  Name . . . .

Entry Options          Function Options          Process Statistics
Immediate? . . . . Y    Component stmt? . . D    Processed . .
Confirmation? . . N    Force compose? . . D    Skipped . . .
Addendum? . . . . N    Display summary? . . Y    Errors . . . .

000: READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F6=EXECUTE  F7=CONFIRM ...

```

After you supply program names and set options, press ENTER. The message “U00: OK TO EXECUTE” is displayed. To start the Compose action, issue EXECUTE. You can bypass this message and issue EXECUTE directly.

If you supplied a range of program names or a generic pattern on the COMPOSE Program Entry panel, and set the “Confirmation?” Entry Option to Y (yes), you will be prompted to issue CONFIRM or SKIP for the individual programs in the range or pattern. If you do not alter the “Confirmation?” option, it will automatically set itself to Y (yes) when you attempt to process a range or generic pattern.

The following field description apply to the Function Options on the COMPOSE Program Entry panel. The Function Options control the way the Compose action is executed. You can change the Function Option settings for the duration of the Compose action, and when you exit from the panel, the values you entered will default to the original system values.

Component stmt?

Description *Optional.* Determines whether COMPONENT statements will be commented (!*COMPONENT) in a composed program, along with corresponding end statements (!*CEND) to mark the end of expanded component code or excluded from the program altogether.

Force compose?

Description *Optional.* Lets you choose whether a COMPOSE Confirmation panel will be displayed when an executable program is changed and the Compose action is issued on its source version.

Display summary?

Description *Optional.* Determines whether a summary report is displayed or bypassed at the end of the Compose.

For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

COMPOSE Summary Report

The COMPOSE Summary Report is displayed at the end of the Compose action to highlight the results of the Compose. Information on this report includes source and composed program information, and the settings (specified and default) for the COMMENTS, FORCE, and SEQUENCE parameters. In addition, summary statistics show the number of statements (REPLACE, CSIOPTNS, and COMPONENT) in the source program, as well as the status of the program in your library. The following screen illustration shows an example of the COMPOSE Summary Report:

```

PRGMCOMP02          COMPOSE Summary Report          YYYY/MM/DD  HH:MM:SS

Source
  Library . . . . . ACCT
  Name . . . . . CUST_INSERT@
  Description . . . . . CUSTOMER INSERT SOURCE PROGRAM
Replace
  Library . . . . . ACCT
  Name . . . . . CUST_INSERT
  Description . . . . . CUSTOMER INSERT PROGRAM
Options
  Comments . . . . . Specified      Default
  Force Compose . . . . . FORCE=NO      FORCE=NO
  Sequence . . . . . SEQUENCE 10,10      SEQUENCE 10,10
Summary Statistics
  Replace stmts . . . . . 1
  Option " . . . . . 1
  Components . . . . . 10
  Replace status . . . . . REP

CSR: END OF SUMMARY REPORT
ENTER  F3=EXIT  F12=CANCEL
    
```

To end the report and return to the previous panel, press ENTER, EXIT, or CANCEL.

The following field descriptions apply to the group headings on the COMPOSE Summary Report. The fields on this panel are for viewing only and cannot be changed.

Source

Description *Display.* Highlights the individual fields of Library, Name, and Description that you supplied to identify the source program to be composed.

Consideration If you don't supply Description, the description in the program profile will be used.

Replace

Description *Display.* Shows the Library, Name, and Description of the replaced executable (composed) program as a result of the Compose.

Options

Description *Display.* Displays your specified values and the system default values of the COMMENTS, FORCE, and SEQUENCE parameters as they appear in the CSIOPTNS statement in the source program.

Summary Statistics

Description *Display.* Identifies the number of REPLACE, CSIOPTNS, and COMPONENT statements in the source program, as well as the replace status of the composed program.

For the detailed descriptions of panel fields and statuses, see "[Field descriptions](#)" on page 427.

COMPOSE Confirmation panel

The COMPOSE Confirmation panel is displayed when you alter an executable program and then attempt to Compose its source version. This means the date of the most recent changes to the executable program is greater than the date of the last Compose. To protect the integrity of program code, the COMPOSE Confirmation panel warns you that these changes will be overlaid by the Compose action.

If the Function Option “Force compose?” is set to Y (yes) on the COMPOSE Program Entry panel, the Compose action will be forced to occur (even if the executable program was changed) and the COMPOSE Confirmation panel will not be displayed. It might be important in some situations to be warned that changes will be overlaid (replaced) if you issue the Compose action.

The following screen illustration is a sample of the COMPOSE Confirmation panel:

```

CONFIRM01                COMPOSE Confirmation                YYYY/MM/DD HH:MM:SS

The executable program shown below has been changed since the last time
its source version was composed. Please note that if you want to compose
the source program, the changes made to this executable program will be overlaid.
Your confirmation is required to continue the Compose action.

Enter Y or N below.

Library . . . . . ACCT
Name . . . . . CUST_BROWSE
Error code . . . . . CSC
Error message . . . . . THE EXECUTABLE PROGRAM HAS CHANGED SINCE THE LAST TIME

Date last changed . . . . . YYYY/MM/DD   HH:MM:SS
"      " composed . . . . . YYYY/MM/DD   HH:MM:SS
"      " decomposed . . . . . YYYY/MM/DD   HH:MM:SS

Confirmation? . . . . . N

Changed by action . . . . . COMPOSE

F1=HELP   F3=EXIT   F12=CANCEL

```

The COMPOSE Confirmation panel displays the name of the executable program and related information that includes the error code and message. The date and time of the last change to the executable program and the date and time of the last Compose and Decompose are also listed.

The system default value for the "Confirmation?" field is N (no). If you press ENTER from this screen with the N displayed, the Compose will not start and the previous panel will be displayed.

To override this panel and force the Compose action, enter Y (yes) in the "Confirmation?" field. Entering a character other than Y, N, or a space redisplay the confirmation panel and the Compose will not occur. To return to the previous panel without starting the Compose, press EXIT or CANCEL.

Changed by action is a display field that indicates the COMPOSE action.

The following field descriptions apply to the COMPOSE Confirmation panel. The only field that can be changed on the COMPOSE Confirmation panel is the "Confirmation?" field.

Library

Description *Display.* Shows the library where the executable program resides.

Name

Description *Display.* Shows the MANTIS executable program that you changed.

Error code

Description *Display.* Gives the 3-character error code associated with the attempted compose.

Error message

Description *Display.* Gives the message text associated with the attempted compose.

Date last changed

Description *Display.* Represents the last date and time the executable (composed) program was changed.

Date last composed

Description *Display.* Represents the last date and time the source program was composed.

Date last decomposed

Description *Display.* Represents the last date and time the executable program was decomposed.

Confirmation?

Description *Required.* Indicates if a Compose action will be forced to occur or will be bypassed.

Changed by action

Description *Display.* Shows the value COMPOSE to indicate that the program was composed, or shows the value BIND to indicate that the program was composed and then bound.

General considerations for Compose

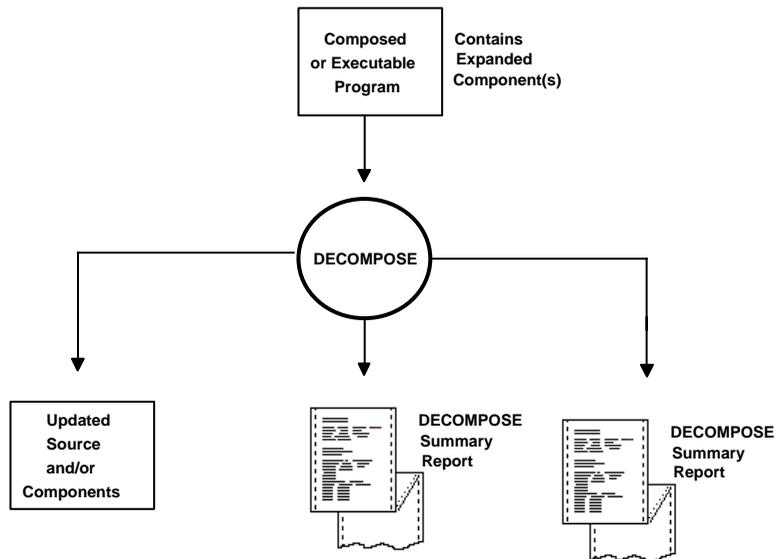
- ◆ You can issue the Compose action on source programs only.
- ◆ There must be at least one COMPONENT statement in the source program for the Compose action to work.
- ◆ If Compose does not find a REPLACE statement in your source program, (but the at sign (@) is appended to the source program name, such as CUST_BROWSE@), the composed program will have the same name as the source program without the at sign (@), for example CUST_BROWSE.
- ◆ If you have a source program that contains a REPLACE statement and the at sign (@) appended to the program name, the name in the REPLACE statement takes priority over the at sign (@).
- ◆ The Compose action displays the COMPOSE Confirmation panel when you changed an executable program and then attempt to compose its source version.
- ◆ A summary report can be displayed at your request to show the results of the Compose action.
- ◆ If you change a component, review the where-used List (the second panel of the Bill of Materials List) to determine the source programs in your directory that use that same component. Although not required, you may want to recompose each source program to use the updated component.
- ◆ Currently, only one component level is supported with the Compose action. This means that if a component contains a COMPONENT statement, the component will not resolve completely when you issue the Compose action. Then, if you attempt to execute the executable (composed) program, the ignored COMPONENT statement could cause the program to fail.

Decompose

The Decompose action disassembles a composed program or an executable program, splitting MANTIS source code and component code and updating your library with any changes.

- ◆ Use the Decompose action on a composed program (one created as a result of the Compose action) when you have made changes to either the component code or the source code.
- ◆ Use the Decompose on an executable program (any program that can be run in MANTIS) as part of the process of modifying a program that already exists in your library into a component-engineered program.

The Decompose process starts with an executable or composed program as shown in the following figure:



There are two ways to start the Decompose action:

- ◆ Select the Decompose option from Program Design Facility menu with or without supplying a program name. MANTIS will return the Decompose Program Entry panel (see “[Decompose panels](#)” on page 332 for information on using the Decompose panels).
- ◆ Issue the Decompose command and a program name at the Program Design Facility menu or at the Program Directory List.

The DECOMPOSE command is coded on the command line of a panel as follows:

DECOMPOSE [*program-name*]

For more information about the DECOMPOSE command that includes syntax and detailed parameter descriptions, see [MANTIS Language, OS/390, VSE/ESA](#), P39-5002.

Nominating components to be decomposed

The first step in decomposing a composed program or an executable program is nominating, or marking, components (new and existing) in the program with the at sign (@) character. This enables the Decompose action to recognize the components to be decomposed.

To nominate components, code the at sign (@) in place of the asterisk (*) in new or modified commented COMPONENT statements of the executable or composed program. The vertical bar (|) must remain as the first character and the at sign (@) must be the second character in the statement. You do not have to change the |*CEND statement in any way for an existing component. However, a |*CEND statement is required if you create a new component.

The following screen illustration shows an example of a commented COMPONENT statement in line 550 (bold in this example) nominated to be decomposed:

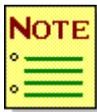
```
EDIT --- ACCT:CUST_INSERT                                COLUMNS 1 73
COMMAND ==>                                           SCROLL ==> PAGE
***** START OF PROGRAM *****
00010 ENTRY CUST_INSERT
      .
      .DO INIT_PANEL_TITLE
      .
00540 EXIT
00550 |@COMPONENT"ACCT:CUS_INIT_HEADER"
00560 ENTRY INIT_PANEL_TITLE
00570 .MAP TITLE="INSERT A NEW CUSTOMER"
00580 .MAP DATE=DATE
00590 .MAP TIME=TIME
00600 .MAP FUNCTION=FUNCTION TYPE
00610 EXIT
00620 |*CEND
***** END OF PROGRAM *****
```

You can nominate one or more existing components as shown. You can also create a new component, nominate it, and include a `|*CEND` statement. Decompose will replace existing components and save new ones in your library. After the program is decomposed, the at sign (`@`) will remain in the COMPONENT statement.

Decomposing an executable program

You can create a component-engineered program using an executable program currently in your library by using the Decompose action. Follow these steps:

1. Nominate the components in the executable program by coding |@COMPONENT statements and |*CEND statements around the code representing the desired component. These statements must be present in the executable program for the Decompose action to work. See “[Nominating components to be decomposed](#)” on page 327 for information on nominating components.
2. Be sure the at sign (@) is in the second position of the commented COMPONENT statement. This at sign nominates the commented statement to be created if new or updated if existing in your library.
3. Code a SOURCE statement and nominate it with the at sign (@) so the Decompose action recognizes the MANTIS source code.
4. Save the changes made in the Full-Screen Editor and exit from the editing session.
5. Issue the Decompose action on the executable program to split the source code and the component code.
6. Issue Cross Reference (CREF) on the source program. This action cross references programs and components and then builds the Bill of Materials List from the cross reference. This list panel (and its associated Component Where Used List) shows program and component relationships and usage in your library.



You can also specify “Decompose all?” from the DECOMPOSE Program Entry panel to update all components (and bypass nominating individual components). However, the “Decompose all?” Function Option does not decompose source code changes unless you include a nominated SOURCE statement. See “[Decompose panels](#)” on page 332 for information on the Decompose Program Entry panel.

Once the composed program is created, you can continue to make changes to the source program and issue the Compose action to replace a current composed program as necessary. You can repeat this cycle as often as needed when altering MANTIS source programs or components.

SOURCE statement in executable programs

Code the SOURCE statement in an executable program to name the library (your library only), program, password, and description of the source program to be created or replaced by the Decompose action. The SOURCE statement is coded as follows:

```
|@SOURCE"[library:] program-name [/password] [/description]"
```

The SOURCE statement must be nominated to be recognized by the Decompose action. Nominate a SOURCE statement by coding the at sign (@) character in the second position following the vertical bar (|), for example |@SOURCE. In addition, be sure you code double quotes (") around the parameters of the SOURCE statement.

The following table shows the conditions when the SOURCE statement is required:

| MANTIS source changes? | Component changes | @SOURCE statement required? |
|------------------------|-------------------|-----------------------------|
| Yes | No | Yes |
| No | Yes | No |
| No | No | No |
| Yes | Yes | Yes |

If you set UPPERCASE to OFF in the Full-Screen Editor (FSE), the SOURCE statement must be entered in uppercase mode in order to be recognized.



If you want to do Decompose and do not want SOURCE replaced, you can replace the @ (at sign) with an * (asterisk) so that the source statement does not need to be removed from the program.

For more information about the SOURCE statement including syntax, detailed parameter descriptions, and examples, see [MANTIS Language, OS/390, VSE/ESA](#), P39-5002.

Decomposing composed programs

You use the Decompose action on a composed program when you have made changes in the program either to source code or component code.

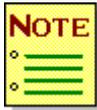
If you make changes to a composed program and then attempt to issue Compose on its source program, the COMPOSE Confirmation panel will be displayed to warn that the Compose will overlay (replace) any changes made to the composed program.

To decompose a composed program, follow these steps:

1. Use the Full-Screen Editor (FSE) to modify a composed program.
2. Nominate the components that you modified by changing the asterisk (*) to the at sign (@) on affected commented COMPONENT statements. (See “[Nominating components to be decomposed](#)” on page 327 for information on nominating components.)

This is all you have to do if you changed component code—you do not have to alter |*CEND statements. However, if you changed source code, be sure you include a nominated SOURCE statement.

3. Save the changes made in the Full-Screen Editor and exit from the editing session.
4. Issue the Decompose action on the composed program.



You can nominate all components by setting the “Decompose all?” option to Y (yes) on the DECOMPOSE Program Entry panel (see “[Decompose panels](#)” on page 332).

Decompose panels

The panels used for the Decompose action are listed and briefly described in the following table:

| Panel title | Description |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DECOMPOSE Program Entry Panel | Lets you designate program names and set Function and Entry Options before issuing the Decompose action. |
| DECOMPOSE Detail Report | The report that is displayed at the end of the Decompose action (if you choose to display it) to show the detailed results of the Decompose on the program and its components. This detail report precedes the summary report. |
| DECOMPOSE Summary Report | The report that is displayed at the end of the Decompose action (if you choose to display it) to show the summary results of the Decompose action on the program and its components. This summary report follows the detail report. |

DECOMPOSE Program Entry panel

The DECOMPOSE Program Entry panel is displayed when you select the Decompose action without a program name. This panel allows you to supply the executable program name, range of executable program names, or generic pattern of executable program names to be decomposed. You can also set the Entry and Function Options that will be applied to the designated programs during the Decompose action, or you can let the system default values be used. When you press ENTER from the DECOMPOSE Program Entry panel, the Decompose action is started. A sample of this panel is shown in the following screen illustration:

```

PRGMENT01A          DECOMPOSE Program Entry          YYYY/MM/DD HH:MM:SS
===>
From
  Library . . . .  ACCT
  Name . . . .
  Description .

Thru
  Name . . . .

Entry Options          Function Options          Process Statistics
Immediate? . . . . Y      Decompose all? . . . N      Processed . .
Confirmation? . . . N      Display detail? . . . Y      Skipped . . .
Addendum? . . . . N      Display summary? . . . Y      Errors . . . .

000: READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F6=EXECUTE  F7=CONFIRM . .

```

After you supply program names and set options, press ENTER. The message “U00: OK TO EXECUTE” is displayed. To start the Decompose action, issue EXECUTE. You can bypass this message and issue EXECUTE directly.

If you supplied a range of program names or a generic pattern, and set the “Confirmation?” Entry Option to Y (yes), you will be prompted to issue CONFIRM or SKIP for the individual programs in the range or pattern.

Function Options on the DECOMPOSE Program Entry panel control the way the Decompose action is executed from this panel. You can change the Function Option settings for the duration of the Decompose action, and when you exit from the panel, the options will default to the original values. The following field descriptions apply to the DECOMPOSE Program Entry Panel:

Decompose all?

Description *Optional.* Determines whether all components (changed or unchanged) in an executable program will be updated by the Decompose action.

Display detail?

Description *Optional.* Determines whether a detail report is displayed or bypassed at the end of the Decompose.

Display summary?

Description *Optional.* Determines whether a summary report is displayed or bypassed at the end of the Decompose.

For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

DECOMPOSE Detail Report

When the Decompose action ends, if you set the Function Option “Display detail?” to Y (yes) on the Decompose Program Entry panel, the DECOMPOSE Detail report is displayed. This report lists each component in the executable program, shows the date and time when the component was last changed, and indicates individual component status. The following screen illustration shows an example of this report:

```

PRGMDECO01          DECOMPOSE Detail Report          YYYY/MM/DD HH:MM:SS
                  More: -

Library . . . . . ACCT
Name . . . . . CUST_BROWSE
Composed . . . . . YYYY/MM/DD HH:MM:SS
Changed . . . . . YYYY/MM/DD HH:MM:SS
Components . . . . 8

No  Library      Name                Date                Time                D  Stat
--  -
1  ACCT          CUS_INIT             YYYY/MM/DD         HH:MM:SS           -  CHG
2  ACCT          CUS_INIT_HEADER     YYYY/MM/DD         HH:MM:SS           Y
3  ACCT          CUS_OPEN_PROC       YYYY/MM/DD         HH:MM:SS
4  ACCT          CUS_CONVERSE_MAP    YYYY/MM/DD         HH:MM:SS
5  ACCT          CUS_VALIDATE        YYYY/MM/DD         HH:MM:SS
6  ACCT          CUS_EDIT_DATA       YYYY/MM/DD         HH:MM:SS
7  ACCT          CUS_UPDATE_FILE     YYYY/MM/DD         HH:MM:SS
8  ACCT          CUS_REDISPLAY_DATA  YYYY/MM/DD         HH:MM:SS

CMC:  COMPONENTS FOR PROGRAM
ENTER  F3=EXIT  F12=CANCEL

```

In this example, the component CUS_INIT_HEADER was nominated because a Y (yes) is displayed under the D (for decompose) heading. This means that CUS_INIT_HEADER was updated in your library.

The Stat field indicates a value of CHG for the component CUS_INIT, meaning the code for this component changed since the source program CUST_BROWSE@ was composed. CUST_INIT was not nominated (the D field does not show a Y), and as a result, CUST_INIT was not updated in the ACCT library.

To view the DECOMPOSE Summary Report, be sure the “Display summary?” Function Option on the DECOMPOSE Program Entry panel is set to Y (yes) before you issue the Decompose action.

To view the summary report if the DECOMPOSE Detail Report is displayed, press ENTER. To end the detail report and return to the previous panel, press EXIT or CANCEL.

The following field descriptions apply to the DECOMPSE Detail Report. The fields on the DECOMPOSE Detail Report are displayed for viewing only and cannot be changed.

Library

Description *Display.* Shows the current user library were the executable (decomposed) program resides.

Name

Description *Display.* Shows the name of the executable program that was decomposed.

Composed

Description *Display.* Gives the date and time when the last Compose action was issued on the source program.

Changed

Description *Display.* Gives the last date and time the program was changed.

Components

Description *Display.* Tells the total number of components in the executable program.

No

Description *Display.* Provides a sequence number to list the components in the executable program.

Library

Description *Display.* Name of the library in which each component resides.

Name

Description *Display.* Shows the component name.

Date

Description *Display.* Shows the last date in YY/MM/DD format when an individual component was changed.

Time

Description *Display.* Shows the last time in HH:MM:SS format when an individual component was changed.

D (Decomposed)

Description *Display.* Shows a Y if a component was nominated and decomposed.

Stat

Description *Display.* The Stat (status) field can show the following values:

Options CHG: CHANGE. Indicates that a component changed since the last Compose action was issued on its source program.

NFC: COMPONENT NOT FOUND. The specified COMPONENT statement cannot be located.

PWV: PASSWORD VIOLATION. The password of the program or component specified does not match the password contained in the library.

Spaces: No changes were made to the component since the last Compose action was issued on its source program.

For the detailed descriptions of panel fields, see [“Field descriptions”](#) on page 427.

DECOMPOSE Summary Report

The DECOMPOSE Summary Report is displayed at your request at the end of the Decompose action. It highlights the results of the Decompose action, including the decomposed program information, the source program information, and the Entry and Function Options as you set them compared to their default values.

In addition, the summary statistics include the number of components in the program, the number of components that you changed, any error conditions encountered (such as an invalid nomination of a commented COMPONENT statement), and the total number of components that were decomposed. An example of the summary report is displayed in the following screen illustration:

```

PRGMDECO02          DECOMPOSE Summary Report          YYYY/MM/DD  HH:MM:SS
Decomposed
  Library . . . . . ACCT
  Name . . . . . CUST_BROWSE
  Composed . . . . . YYYY/MM/DD  HH:MM:SS
  Changed . . . . . YYYY/MM/DD  HH:MM:SS
Source
  Library . . . . . ACCT
  Name . . . . . CUST_BROWSE@
  Composed . . . . . YYYY/MM/SS  HH:MM:SS
  Changed . . . . . YYYY/MM/SS  HH:MM:SS
Options
  Specified          Default
Comments . . . . . COMMENTS=YES  COMMENTS=YES
Force Compose. . . . . FORCE=NO    FORCE=NO
Sequence . . . . . SEQUENCE 10,10  SEQUENCE 10,10
Summary Statistics
  Components . . . . . 8          Replace status . . . . . AOK
  Changed . . . . .          Compose required?. . . . . YES
  Errors . . . . .
  Decompose. . . . . 1
CSR: END OF SUMMARY REPORT
ENTER  F3=EXIT  F7=DETAIL  F12=CANCEL
    
```

The following field descriptions apply to the group headings on the DECOMPOSE Summary Report. The fields on the DECOMPOSE Summary Report are displayed for viewing only and cannot be changed.

Decomposed

Description *Display.* Highlights the Library and Name of the executable program that was decomposed. Also, shows the date when the source version was composed (if any) and the date the decomposed program was changed.

Source

Description *Display.* Shows the Library and Name of the source program, or the program from which the decomposed program was copied. Date of the compose and last date changed are also shown.

Consideration If there is no nominated source statement in the executable code, these fields will be blank and the Replace Status field will display NSS.

Options

Description *Display.* Displays the specified and default settings of the COMMENTS, FORCE, and SEQUENCE parameters as they appear in the CSIOPTNS statement in the source program.

Summary Statistics

Description *Display.* Identifies the total number of components in the executable program, the number of components changed, the number of errors that occurred during the decompose, and the number of components that were decomposed and updated. The "Replace status" field shows the value AOK when the executable program and components are updated in your library. "Compose required" shows the value YES or NO to indicate if a Compose action should be issued on the source program.

To return to the detail report, press **DETAIL**. To end the summary report and return to your previous panel, press **ENTER**, **EXIT**, or **CANCEL**.

For the detailed descriptions of panel fields and statuses, see "[Field descriptions](#)" on page 427.

General considerations for Decompose

The following general considerations apply to the Decompose action:

- ◆ You can issue the Decompose action on a composed or an executable program.
- ◆ Decompose updates libraries with MANTIS source code changes and/or component code changes. If the source code changes, a SOURCE statement is required in the executable program to update your library.
- ◆ When you issue Decompose, you can request a detail and/or summary report to be displayed to show the overall status of the Decompose action.
- ◆ Nominate components to be decomposed by changing the “|*” in the commented COMPONENT statement to “|@”. Set the “Decompose all?” Function Option to Y (yes) on the DECOMPOSE Program Entry panel to automatically update all components, even if they were not changed or nominated.
- ◆ If you nominate a new component, the Decompose action saves the new component in your library; if you nominate an existing component, the Decompose action replaces the component in your library.

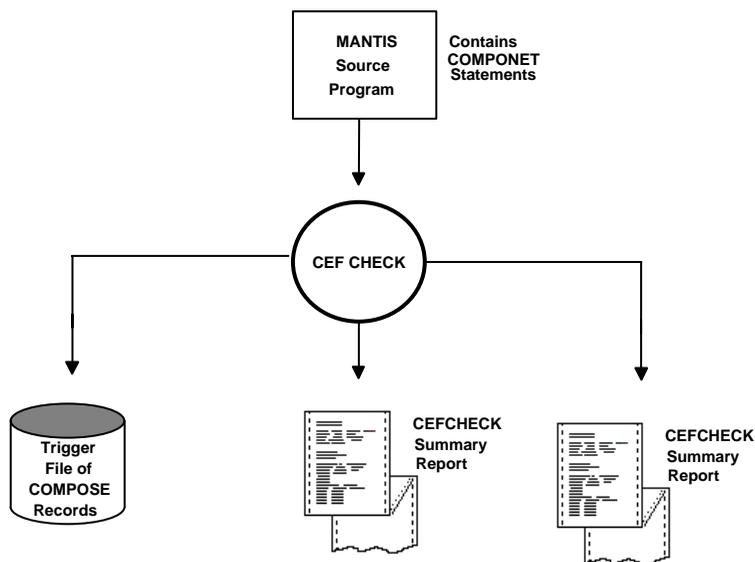
CEF Check

The CEF Check action lets you verify if a source program needs to be composed. A source program needs to be recomposed if any of its components (or inline routines) have changed since the last time the program was composed. The CEFCHK command is coded on the command line of a panel as follows:

CEFCHECK [program-name]

For more information about the CEFCHK command that includes syntax and detailed parameter descriptions, see “[Program Design Facility commands](#)” on page 85.

The following figure shows the CEF Check action using the source program as input. The results of the process are the CEFCHK Detail Report and CEFCHK Summary Report. In addition, you can choose to create a Trigger file to hold CEFCHK records or COMPOSE records for later online or batch processing.



The panels used for the CEF Check action are listed and briefly described in the following table:

| Panel title | Description |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CEFCHECK Program Entry Panel | Lets you designate program names and set Function and Entry Options before issuing the CEF Check action. |
| CEFCHECK Detail Report | The report that is displayed at the end of the CEF Check action (if you choose to display it) to show the detailed results of CEF Check on the program and its components. This report precedes the summary report. |
| CEFCHECK Summary Report | The report that is displayed at the end of the CEF Check action (if you choose to display it) to show the summary results of CEF Check action on the program and its components. This summary follows the detail report. |

CEFCHECK Program Entry panel

The CEFCHECK Program Entry panel is displayed when you select the CEF Check action without a program name. This panel allows you to supply the source program name, range of source program names, or generic pattern of source program names to be checked. You can also set the Entry and Function Options that will be applied to the designated programs during the CEF Check action, or you can let the system default values be used. When you press ENTER from the CEFCHECK Program Entry panel, the CEF Check action is started. A sample of the CEFCHECK Program Entry panel is shown in the following screen illustration:

```

PRGMENT01A      CEFCHECK Program Entry      YYYY/MM/DD HH:MM:SS
====>
From
  Library . . . ACCT
  Name . . . .
  Description .

Thru
  Name . . . .

Entry Options      Function Options      Process Statistics
Immediate? . . . . Y      Create trigger? . . Y      Processed . .
Confirmation? . . . N      Display detail? . . Y      Skipped . . .
Addendum? . . . . N      Display summary? . . Y      Errors . . . .

000: READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F6=EXECUTE  F7=CONFIRM ...

```

After you supply program names and set options, press ENTER. The message “U00: OK TO EXECUTE” is displayed. To start the CEF Check action, issue EXECUTE. You can bypass this message and issue EXECUTE directly.

If you supplied a range of program names or a generic pattern, and set Entry Option “Confirmation?” to Y (yes), you will be prompted to issue CONFIRM or SKIP for the individual programs in the range or pattern.

Function Options on the CEF CHECK Program Entry panel control the way the CEF Check action is executed from this panel. You can change the Function Option settings for the duration of the CEF Check action, and when you exit from the panel, your changes will default to the original values.

The following field descriptions apply to the Function Options on the CEF CHECK Program Entry panel:

Create trigger?

Description *Optional.* Determines whether a COMPOSE trigger record will be created if the source program that was CEF-checked needs to be composed.

Display detail?

Description *Optional.* Determines whether a detail report is displayed or bypassed at the end of the CEF Check.

Display summary?

Description *Optional.* Determines whether a summary report is displayed or bypassed at the end of the CEF Check.

For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

CEFCHECK Detail Report

The CEFCHECK Detail Report lists all components in a source program, and highlights those components that changed since the last time Compose was issued on the source program. The report is displayed after the CEF Check action ends, if you set the Function Option "Display detail?" to Y (yes) on the CEFCHECK Program Entry panel. The following screen illustration is a sample of this report:

```

PRGMCHK01          CEFCHECK Detail Report          YYYY/MM/DD HH:MM:SS
                                                More:
Library . . . . . ACCT
Name . . . . . CUST_BROWSE@
Composed . . . . . YYYY/MM/DD  HH:MM:SS
Changed . . . . . YYYY/MM/DD  HH:MM:SS
Components . . . . 5
No  LibraryName          Date          Time          Status
-----
1  ACCT          CUS_INIT          YYYY/MM/DD    HH:MM:SS    CHG
2  ACCT          CUS_INIT_HEADER  YYYY/MM/DD    HH:MM:SS
3  ACCT          CUS_OPEN_PROC    YYYY/MM/DD    HH:MM:SS
4  ACCT          CUS_CONVERSE_MAP YYYY/MM/DD    HH:MM:SS
5  ACCT          CUS_VALIDATE_REQUEST YYYY/MM/DD    HH:MM:SS

CMC:  COMPONENTS FOR PROGRAM
ENTER  F3=EXIT  F12=CANCEL
    
```

If a component was modified since the last time the Compose action was issued on the source program, the Date field will contain the most recent date. The Composed field will contain the date the Compose action was last issued. To indicate this change, the value CHG appears in the Status field for the component CUS_INIT.

The following field descriptions apply to the CEF CHECK Detail Report panel. The fields on the CEF CHECK Detail Report are displayed for viewing only and cannot be changed.

Library

Description *Display.* Shows the current user library where the source program resides.

Name

Description *Display.* Shows the name of the source program that was checked by CEF Check.

Composed

Description *Display.* Gives the date and time when the last Compose action was issued on the source program.

Changed

Description *Display.* Gives the last date and time the source program was changed.

Components

Description *Display.* Indicates the total number of components in the source program.

No

Description *Display.* Provides a sequence number to list the components in the source program.

Library

Description *Display.* Name of the library in which each component resides.

Name

Description *Display.* Shows the component name.

Date

Description *Display.* Shows the last date in YY/MM/DD format when an individual component was changed.

Time

Description *Display.* Shows the last time in HH:MM:SS format when an individual component was changed.

Status

Description *Display.* The Status field can show the following values:

Options CHG: CHANGE. Indicates that a component changed since the last Compose action was issued on its source program

NFC: COMPONENT NOT FOUND. The specified COMPONENT statement cannot be located

PWV: PASSWORD VIOLATION OR INVALID USAGE. The password of the program or component specified does not match the password contained in the library.

Spaces: No changes were made to the component since the last Compose action was issued on its source program.

For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

CEFCHECK Summary Report

When the CEF Check action ends, if you set the Function Option “Display summary?” to Y (yes) on the CEFCHECK Program Entry panel, the CEFCHECK Summary Report is displayed. This one-page report identifies the source and replaced program, lists the Function Options as you set them, and shows Function Option default settings. The summary report also provides the processing totals from the CEF Check action, such as number of components changed, the replace status of the composed program (if the compose is required), and trigger record status. The following screen illustration shows a sample of this report:

```

PRGMCHK02          CEFCHECK Summary Report          YYYY/MM/DD  HH:MM:SS

Source
  Library . . . . . ACCT
  Name . . . . . CUST_BROWSE@
  Composed . . . . . YYYY/MM/DD  HH:MM:SS
  Changed . . . . . YYYY/MM/DD  HH:MM:SS
Replace
  Library . . . . . ACCT
  Name . . . . . CUST_BROWSE
  Composed . . . . . YYYY/MM/DD  HH:MM:SS
  Changed . . . . . YYYY/MM/DD  HH:MM:SS
Options          Specified          Default
Comments . . . . . COMMENTS=YES      COMMENTS=YES
Force Compose. . . . . FORCE=NO          FORCE=NO
Sequence . . . . . SEQUENCE 10,10      SEQUENCE 10,10
Summary Statistics
  Components . . . . . 5          Replace status . . . . . REP
  Changed . . . . . 1          Compose required?. . . . . YES
  Errors . . . . .          Trigger record created?. . . . . YES

CSR: END OF SUMMARY REPORT
ENTER  F3=EXIT  F7=DETAIL  F12=CANCEL
    
```

The following field descriptions apply to the group headings on the CEFCHECK Summary Report. The fields on the CEFCHECK Summary Report are displayed for viewing only and cannot be changed.

Source

Description *Display.* Displays the Library, Name, date last composed, and date last changed of the source program that was checked.

Replace

Description *Display.* Displays the Library, Name, date last composed, and date last changed of the composed program.

Options

Description *Display.* Displays the specified and default settings and default values as specified in the CSIOPTNS statement.

Summary Statistics

Description *Display.* Identifies the total number of components in the source program, the number of components changed, the number of errors that occurred during the CEF Check, and the number of components that were checked. The "Replace status" field shows REP when the source program is replaced in your library. "Compose required" shows the value YES or NO to indicate if a Compose action should be issued on the source program. "Trigger record created?" shows the value YES or NO to indicate whether a trigger record was created for this CEF Check action.

To return to the detail report, press **DETAIL**. To end the summary report, and return to the panel where you issued CEF Check, press **ENTER**, **EXIT**, or **CANCEL**.

For the detailed description of panel fields and statuses, see "[Field descriptions](#)" on page 427.

Creating COMPOSE trigger records with CEF Check

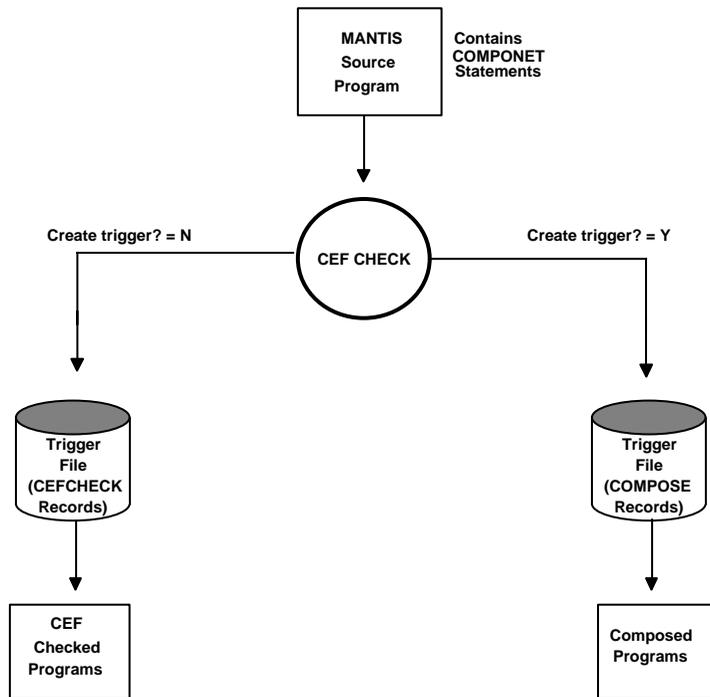
Generally, parameter entry panels allow you to create a trigger record for the current action only. For example, setting the Function Option "Immediate?" to N (no) on any of the parameter entry panels results in a record of that action written to the Trigger file.

However, the CEF Check action includes a special feature. In addition to letting you create trigger records for the CEF Check action, you can create COMPOSE records (when a source program that was checked needs to be composed because one or more of its components changed).

The following table shows how to create COMPOSE trigger records by setting the Entry and Function Options on the CEFCHECK Program Entry panel:

| Entry option | Function option | Result |
|----------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Immediate? | Create trigger? | The CEFCHECK Summary Report displays YES to indicate a trigger record was created, and YES to indicate a Compose is required. COMPOSE record is shown on the Trigger file. |
| Immediate? = Y | Create trigger? = N | CEFCHECK Summary Report displays NO to indicate a trigger record was not created, and YES to indicate a Compose is required. |
| Immediate? = N | Create trigger? = Y | No reports are displayed. A Compose record is created on the Trigger file. |
| Immediate? = N | Create trigger? = N | No reports are displayed. A CEFCHECK record is created on the Trigger file. |

The creation of CEFCHECK or COMPOSE trigger records as a result of the CEF Check action is shown in the following figure:



CEF Check creates COMPOSE records on the Trigger file if certain source programs must be composed. This function lets you run CEF Check on a large number of programs, view the results of the check on the Trigger file, and see exactly which programs need to be composed.

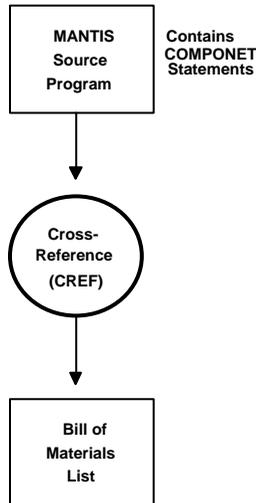
To save time and system resources, use the COMPOSE records on the Trigger file (created by CEF Check) as input to a batch job that will compose the programs offline. For a sample of the JCL for this batch job, see [“Trigger file JCL”](#) on page 519.

Cross Reference (CREF)

The Cross Reference (CREF) action cross references programs and components in your library and builds the Bill of Materials List. CREF works by searching source programs for COMPONENT statements and then displays their relationships and usage in your library when you select the Bill of Materials List. The CREF command is coded on the command line of a panel as follows:

CREF [program-name]

For more information about the CREF command that includes syntax and detailed parameter descriptions, see “[Program Design Facility commands](#)” on page 85. The following screen illustration shows an overview of the CREF action:



Because CREF builds the Bill of Materials from the cross reference of source programs and components that it creates, to view the latest Bill of Materials List, you must issue the CREF action when you do the following:

- ◆ After you issue the Copy action to copy the contents of one source program (or component) to another source program. (Issuing CREF includes these copied programs and components in the cross reference).
- ◆ After you SAVE a new program or component. (Issuing CREF includes new programs and components in the cross reference).
- ◆ After you issue the Rename action on programs or components. (Issuing CREF includes the renamed programs and components in the cross reference).
- ◆ After you update (REPLACE) a source program by adding a new component statement. (Issuing CREF includes new program and components in the cross reference.)

You do not need to issue CREF after issuing the Purge action on a program or component in your directory. Purge automatically removes programs and components from its cross reference when they are purged so the Bill of Materials List will be current when you view it.

The following table lists and briefly describes the panels used for the CREF action:

| Panel title | Description |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CREF Program Entry Panel | Lets you designate program names and set Function and Entry Options before issuing the CREF action. |
| CREF Summary Report | The online report that is displayed at the end of the CREF action (if you choose to display it) to identify the programs and components that were located in your library and cross referenced. |

CREF Program Entry Panel

The CREF Program Entry Panel is displayed when you select the CREF action without a program name to allow you to supply the source program name, range of source program names, or generic pattern of source program names to be checked. Set Entry and Function Options to be applied to the cross reference for the designated program(s), or use the system defaults as they appear on the panel. When you enter information on this panel, you start the CREF action. A sample of the CREF Program Entry panel appears in the following screen illustration:

```

PRGMENT01A          CREF Program Entry          YYYY/MM/DD HH:MM:SS
===>
From
  Library . . . . . ACCT
  Name . . . . . CUST_BROWSE@
  Description .

Thru
  Name . . . . .

Entry Options          Function Options          Process Statistics
Immediate? . . . . . Y      Display summary? . . Y      Processed . .
Confirmation? . . . . N      Errors . . . .
Addendum? . . . . . N

000: READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F6=EXECUTE  F7=CONFIRM  ...

```

The Display summary? Function Option on the CREF Program Entry panel controls the way the CREF (Cross Reference) is executed from this panel. You can change the Function Option setting for the duration of the CREF action. When you exit from the panel, the Display summary? Function Option will return to the default value.

Display summary?

Description *Optional.* Determines whether a summary report is displayed or bypassed at the end of the CREF.

For the detailed description of panel fields, see “[Field descriptions](#)” on page 427.

After you supply program names and set options, press ENTER. The message “U00: OK TO EXECUTE” is displayed. To start the CREF action issue EXECUTE. You can bypass this message and issue EXECUTE directly.

CREF Summary Report

When the Cross Reference (CREF) action ends, if you set the Function Option “Display summary?” to Y (yes) on the CREF Program Entry panel, the CREF Summary Report is displayed. This one-page report shows the number of components located on your library and cross referenced by the CREF action. The following screen illustration shows a sample of this report:

```
PRGMCREF01          CREF Summary Report          YYYY/MM/DD HH:MM:SS

Source
  Library . . . . . ACCT
  Name . . . . . CUST_BROWSE@
Statement counts
  COMPONENTS . . . . 5

ENTER  F3=EXIT  F12=CANCEL
```

The following field descriptions apply to the CREF Summary Report. The fields on this report are for viewing and cannot be changed. They show that the source program CUST_BROWSE@ contained five COMPONENT statements. To return to the previous panel, press ENTER, EXIT, or CANCEL.

Source

Description *Display.* Lists the library and name for the program that was cross referenced.

Statement counts

Description *Display.* Shows the total number of the component statements that were cross referenced by CREF.

Bill of Materials

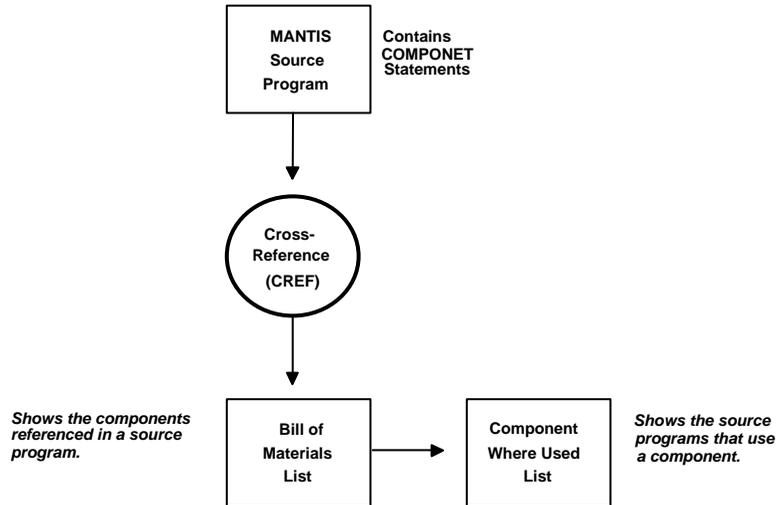
The Bill of Materials is an option on the Program Design Facility menu, that when selected, lists the components referred to in a source program (Bill of Materials List). From the Bill of Materials List, a second list can be displayed to show source programs that use a specific component (Component Where Used List).

The Bill of Materials List and Component Where Used List are created from the cross reference of source programs and components generated by the Cross Reference (CREF) action. Each time CREF is issued, a new cross-reference is built for your program. When you display the Bill of Materials List or the Component Where Used List, you are viewing the source program and component cross-reference as of the last CREF.

If you select a Bill of Materials List or a Component Where Used List for a source program or component that has not been cross referenced with CREF, the lists will display the next logical entity record, whether that record is a source program or component.

A source program that has no COMPONENT statements will not be shown on the Bill of Materials List or the Component Where Used List. If a program without COMPONENT statements is specified for the BILL command, CEF will give the next record on the CREF file following the program name specified (which is not found on this file), or wrap to the beginning of the CREF file if END-OF-FILE is encountered following the specified name.

The following figure shows the CREF action from which the Bill of Materials List and Component Where Used List is created:



The benefits of the Bill of Materials List include the online and accurate information about the structure of the programs and components in your library. Because the Bill of Materials List displays the components used in a given source program, you can plan component use and reuse for other source programs in your application design.

To complement this information, the Component Where Used List shows the source programs that use a specific component. This information indicates which source program need to be composed again because one or more of its components changed since the last time the program was composed.

When you select the Bill of Materials, either the Bill of Materials List or the Component Where Used List will be displayed, depending on the first cross referenced program or component in alphanumeric order. For example, if a source program is the first entity cross referenced, the Bill of Materials List will be displayed; if a component is the first entity cross referenced, the Component Where Used List will be displayed.

The Bill of Materials List displays an online list of all components referred to in a source program. The BILL command can be coded on the command line of a panel as follows to display the Bill of Materials List:

BILL [program-name]

For more information about the BILL command, including syntax and detailed parameter descriptions, see “[Program Design Facility commands](#)” on page 85.

A sample of the Bill of Materials List is shown in the following screen illustration:

```

EREFLIST01          BILL OF MATERIALS LIST (ACCT)          YYYY/MM/DD HH:MM:SS
====>
Action              CUST UPDATE@                          PRGM          Y ACTIVE   ACCT
                   Entity Name                          Type Relations C Status   Library
-----
CUS_OPEN_PROC      PRGM COMP SRC          ACTIVE   ACCT
CUS_INIT           PRGM COMP SRC          ACTIVE   ACCT
CUS_INIT_HEADER    PRGM COMP SRC          Y ACTIVE ACCT
CUS_OPEN_PROC      PRGM COMP SRC          ACTIVE   ACCT
CUS_EDIT_DATA      PRGM COMP SRC          ACTIVE   ACCT
CUS_UPDATE_FILE    PRGM COMP SRC          ACTIVE   ACCT
CUS_UPDATE         PRGM PRGM SRC          Y ACTIVE   ACCT

F08: END OF LIST FOR THIS ENTITY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

In this example, the Bill of Materials List has been selected for the source program CUST_UPDATE@. The components that are contained in CUST_UPDATE@ (as COMPONENT statements) are listed in the Entity Name field. The Type field displays PRGM (for program), which is the default value. The Relationship field shows how the components listed under Entity Name relate to the source program shown at the top of the list, CUST_UPDATE@. The Relationship field of COMP SRC indicates that the items shown on this list are components (COMP), and the entity displayed at the top of the list is a source program (SRC) that contains these components.

The field C shows if any components on this list changed since the last time the source program (CUST_UPDATE@ in this example) was composed. The Status field displays the current program status and the Library field shows the library in which the components on the list reside.

Some information fields on the Bill of Materials List (Date and Time of last change) extend to the right in columns beyond the width of most screens. To view these fields, issue RIGHT. (To return to the original display of the list, issue LEFT).

When you issue RIGHT, the Date and Time fields are displayed as shown in the following screen illustration:

```

EREFLIST01          BILL OF MATERIALS LIST (ACCT)          YYYY/MM/DD HH:MM:SS
====>
_____ CUST_UPDATE@          YYYY/MM/DD HH:MM:SS
Action  Entity Name          Date          Time
-----
_____ CUS_OPEN_PROC          YYYY/MM/DD HH:MM:SS
_____ CUS_INIT                YYYY/MM/DD HH:MM:SS
L_____ CUS_INIT_HEADER        YYYY/MM/DD HH:MM:SS
_____ CUS_OPEN_PROC          YYYY/MM/DD HH:MM:SS
_____ CUS_EDIT_DATA          YYYY/MM/DD HH:MM:SS
_____ CUS_UPDATE_FILE        YYYY/MM/DD HH:MM:SS

F08: END OF LIST FOR THIS ENTITY
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F8=FWD F9=RETRIEVE ...

```

Note that the program name at the top of the list (CUST_UPDATE@) and the components in the Entity Name field remain in the same positions.

In addition to viewing the records shown, you can enter a command on the command line (====>) of the Bill of Materials List or you can enter a command in the Action field for a specific component displayed. To view the valid actions for this list panel, issue PROMPT.

In the previous example, L (for locate) has been typed in the Action field for the component CUS_INIT_HEADER. Pressing ENTER displays the Component Where Used List for CUS_INIT_HEADER to show the source programs that use this component.

To scroll forward for an entity in a multiple-page list, press the forward scroll key. When the last entity is displayed, the list will wrap back to the first entity that was cross referenced with CREF.

The Bill of Materials List can be repositioned from the top only. Therefore, to reposition the list to the first component or source program in a multiple-page list, modify the first name (directly under the Entity Name) by pressing the EOF key (or using the space bar to clear the name), and press ENTER.

For the detailed descriptions of the panel fields, see [“Field descriptions”](#) on page 427.

Component Where Used List

The second part of the Bill of Materials option is the Component Where Used List which shows all the source programs in your library that use a specific component. The sample shown in the following screen illustration is the result of entering L (for locate) in the Action field for the component CUS_INIT_HEADER on the Bill of Materials List:

```

EREFLLIST01          COMPONENT WHERE USED LIST(ACCT)          YYYY/MM/DD HH:MM:SS
====>
Action      CUS_INIT_HEADER          PRGM          ACTIVE  ACCT
            Entity Name          Type Relations C Status  Library
-----
            CUST_BROWSE@          PRGM SRC COMP          ACTIVE  ACCT
            CUST_DELETE@          PRGM SRC COMP          ACTIVE  ACCT
            CUST_MAINT@            PRGM SRC COMP  Y ACTIVE  ACCT
            CUST_UPDATE@          PRGM SRC COMP          ACTIVE  ACCT
            CUST_BROWSE@          PRGM SRC COMP          ACTIVE  ACCT
            CUST_INSERT@          PRGM SRC COMP          ACTIVE  ACCT

F08: END OF LIST FOR THIS ENTITY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...
    
```

This list shows the source programs that use the component CUS_INIT_HEADER. Because CUS_INIT_HEADER changed since the last time the program CUST_MAINT was composed, a Y (yes) appears in the C (to be composed) field. The appearance of the Y for individual source programs lets you know that these programs need to be recomposed to include the revised component.

The Entity Name field shows all the source programs in your library that use the component shown at the top of the list. The Type field defaults to display PRGM (for program). The Relationship field shows how the source programs listed under Entity Name relate to the component shown at the top of the list, CUS_INIT_HEADER. The Relationship field of SRC COMP indicates that the items shown on this list are source programs (SRC), and the entity displayed at the top of the list is a component (COMP) contained in these programs. The Status field displays the current program status and the Library field shows the library in which the source programs on the list reside.

Some information fields on the Component Where Used List (Date and Time of last change) extend to the right in columns beyond the width of most terminal screens. To view these fields, issue RIGHT. Date and Time fields are displayed as shown in the following screen illustration:

```

EREFLIST01          COMPONENT WHERE USED LIST(ACCT)      YYYY/MM/DD HH:MM:SS
===>
Action              CUS_INIT_HEADER                YYYY/MM/DD HH:MM:SS
                   Entity Name                    Date           Time
-----
                   CUST_BROWSE@                  YYYY/MM/DD HH:MM:SS
                   CUST_DELETE@                  YYYY/MM/DD HH:MM:SS
                   CUST_MAINT@                   YYYY/MM/DD HH:MM:SS
                   CUST_UPDATE@                  YYYY/MM/DD HH:MM:SS
                   CUST_BROWSE@                  YYYY/MM/DD HH:MM:SS
                   CUST_INSERT@                  YYYY/MM/DD HH:MM:SS

F08: END OF LIST FOR THIS ENTITY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

Note that the component name at the top of the list (CUS_INIT_HEADER) and the source programs in the Entity Name field remain in the same positions.

In addition to viewing the records shown, you can enter a command on the command line (===>) of the Component Where Used List or you can enter a command in the Action field for a specific source program displayed. To view the valid actions for this list panel, issue PROMPT.

To scroll forward in a multiple-page list for an entity, press the forward scroll key. If more records exist, these records will be displayed. If there are no more records, the next logical entity will be displayed at the top of the list. When the last entity is displayed, the list will wrap back to the first entity that was cross referenced with CREF.

The Component Where Used List can be repositioned from the top only. Therefore, to reposition the list to the first component or source program in a multiple-page list, modify the first name (directly under the Entity Name) by pressing the EOF key (or using the space bar to clear the name), and press ENTER.

For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

7

Bind Options

MANTIS Bind Options allow you to declare certain complex and simple variables and assign storage to them before program execution. Conceptually, the binding process consists of executing a program until some value is referenced which cannot be bound. These values include the results from I/O statements as well as from built-in functions. The data areas and program execution information that result from the binding process are saved with the program. When the bound program is run, it begins executing from the point where binding stopped.

The Bind options are listed under the Bind group heading on the Program Design Facility menu as shown in the following screen illustration. The options include checking, binding, and unbinding actions for HPO (High-Performance Option) and SQL (Structured Language Query) programs. (SQL options are available for DB2 and SQL/DS environments only.)

```

PRGMMENU01      Program Design Facility (ACCT)                YYYY/MM/DD HH:MM:SS
===>

Please select one of the menu items below.

   Program      Component Engineering  Bind Options      Utilities
___ 1. List       7. CEF Check       12. HPO Check     18. Audit Trail
   2. Edit       8. " Compose       13. " Bind        19. Browse Audit Trail
   3. Profile    9. " Decompose     14. " Unbind     20. " Prgm Profile
   4. Purge     10. CREF Programs  15. SQL Check    21. Trigger List
   5. Copy      11. Bill of Materials 16. " Bind       22. SQL Maint
   6. Rename

000:  READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F9=RETRIEVE  F12=CANCEL ...

```

Included in this chapter are the descriptions of associated parameter entry panels for issuing HPO and SQL Check, Bind, and Unbind actions, as well as a description of the status report that you can request for each action.

For complete information about the SQL bind process, refer to *MANTIS DB2 Programming, OS/390, VSE/ESA*, P39-5028.

Bind options for the Program Design Facility

The following table lists and briefly describes the Bind Options on the Program Design Facility menu:

| Option | Description |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HPO Check | Checks an HPO-bound program to determine if any programs or components changed since the last time the program was bound. |
| HPO Bind | Creates a new bound version of a MANTIS program. |
| HPO Unbind | Replaces the bound version of a MANTIS program with the unbound version. |
| SQL Check | DB2 and SQL/DS environments only: Static: Determines if a program and its corresponding SQL support load module are consistent. Extended Dynamic: Determines if the program and its corresponding SQL/DS access module are consistent. |
| SQL Bind | DB2 and SQL/DS environments only. Static: Places information about a program's SQL statements and their host variables into an internal file to create an SQL support module for static execution of the program. Extended Dynamic: Dynamically creates an SQL/DS access module for the program, saves information about SQL statements and host variables, and makes the program immediately executable at the end of the bind. |
| SQL Maint | DB2 environments only. Displays status information for SQL support programs and load modules. |
| SQL Unbind | DB2 and SQL/DS environments only. Static: Marks the program as not SQL bound and deletes the SQL bind information from the internal file. Extended Dynamic: Marks the program as not SQL bound, removes additional information from the MANTIS cluster about SQL statements and host variables contained in the program, and deletes the associated SQL/DS access module. |

Programming considerations for binding

Think of binding as a preliminary run of a MANTIS program. When MANTIS binding encounters a statement which depends on information that is not available until execution time, it stops. Therefore to take full advantage of the binding facility, you should locate complex variable declarations (such as FILE, SCREEN, etc.) as well as any other initialization statements (such as COMMAND1="NEXT") so that they are bound (or executed) before the first "unbindable" statement.

This does not mean that you must physically locate the statements you wish to bind at the beginning of the program. You can place them in an internal procedure which your program calls with an internal DO. You can divide MANTIS statements and functions into three binding categories:

- ◆ Statements that are always bound.
- ◆ Statements which always stop the binding process.
- ◆ Statements which can or cannot be bound depending upon whether they reference task-dependent values.

The table on the following page shows each MANTIS statement and function in the appropriate category.

| Always bound | May be bound | Never bound |
|--------------|----------------|---------------|
| ENTRY | ACCESS* | CALL |
| TRAP | ATTRIBUTE | CHAIN |
| | BIG | COMMIT |
| | CLEAR* | CONVERSE |
| | DO (internal)* | DELETE |
| | EXIT** | DEQUEUE |
| | FILE* | DO (external) |
| | HEAD | ENQUEUE |
| | IF ELSE END | GET |
| | INTERFACE | INSERT |
| | KANJI | MARK |
| | LET | OBTAIN |
| | OUTPUT | PEFORM |
| | PAD | PROMPT |
| | PROGRAM* | RELEASE |
| | SCREEN | RESET |
| | SCROLL | SEED |
| | SLICE | SHOW |
| | SLOT | STOP |
| | SMALL | UPDATE |
| | TEXT | WAIT |
| | TOTAL | |
| | UNPAD | |
| | UNTIL END | |
| | VIEW* | |
| | WHEN END | |
| | WHILE-END | |

* If a particular variable appears as a parameter on the initial ENTRY statement and as a name on one of these statements, binding is stopped.

** EXIT is a special exception. MANTIS will bind EXITS from internal DOs. Any other EXIT stops binding.

The following statements are bound unless the following built-in functions are referenced:

- ◆ DATE
- ◆ DOLEVEL
- ◆ PASSWORD
- ◆ PRINTER
- ◆ RND
- ◆ TERMINAL
- ◆ TERMSIZE
- ◆ TIME
- ◆ USER



Omitting the “*user.*” on the library name of a screen, file, program, and so on, is equivalent to specifying USER + “*library-name*” and stops the binding process.

The following example illustrates the binding process:

```
10 FILE EMPLOYEE ( "PERSONNEL:EMPLOYEES" , "PERSONNEL" )
20 FILE DEPT ( "PERSONNEL:DEPARTMENTS" , "PERSONNEL" , PREFIX )
30 IF USER="PERSONNEL"
40 .SCREEN EMPL ( "PERSONNEL:EMPLOYEES" )
50 ELSE
60 .SCREEN EMPL ( "PERSONNEL:EMPLOYEES_VIEW" )
70 END
80 FILE SKILLS ( "PERSONNEL:SKILLS" , "PERSONNEL" , PREFIX )
90 TEXT COMMAND ( 4 , 5 )
100 COMMAND ( 1 ) = "PRINT" , "NEXT" , "PREV" , "QUIT"
```

This program uses two file designs. Statements 30 through 60 indicate that selection of a specific screen design depends on the user (USER) name. In the last statements, an array of codes is initialized for use in data validation.

Consider the binding process for this example. Statements 10 and 20 will be bound, that is, MANTIS will read the file designs and define all related fields. The binding process will stop at statement 30, however, since the user name is task dependent. MANTIS is unable to determine the correct design for the EMPL screen at the time of binding. Statements 80 through 100 are bindable, but will not be bound since the binding process stops at statement 20.

To maximize the effects of binding, you should move statements 30 through 70 to follow statement 100. The reorganized program would appear as follows:

```

10 FILE EMPLOYEE( "PERSONNEL:EMPLOYEES" , "PERSONNEL" )
20 FILE DEPT( "PERSONNEL:DEPARTMENTS" , "PERSONNEL" , PREFIX)
30 FILE SKILLS( "PERSONNEL:SKILLS" , "PERSONNEL" , PREFIX)
40 TEXT COMMAND( 4 , 5)
50 COMMAND( 1) = "PRINT" , "NEXT" , "PREV" , "QUIT"
60 IF USER = "PERSONNEL"
70 .SCREEN EMPL( "PERSONNEL:EMPLOYEES" )
80 ELSE
90 .SCREEN EMPL( "PERSONNEL:EMPLOYEES_VIEW" )
100 END

```

Binding will now continue until statement 60. MANTIS will now bind the SKILLS file profile and fields as well as the COMMAND array declaration and initialization.

Since the statements to be bound do not need to be at the textual beginning of the program, the final version of the program could be written as:

```

10 DO FILE_DECLARATIONS
20 TEXT COMMAND( 4 , 5)
30 COMMAND( 1) = "PRINT" , "NEXT" , "PREV" , "QUIT"
40 DO SCREEN_DECLARATIONS

```

The file initialization statements have been moved to an internal procedure. (This is restricted to internal procedures, however, since an external DO stops the binding process.)

Bound programs are stored like unbound programs except that the initialized data area and execution state are stored with the program. Binding does not affect program logic.

You can edit a bound program exactly like an unbound program. The program is automatically unbound when it is modified. You must explicitly bind the edited program again before saving or replacing it.

Except in the case of RDM and TOTAL views, the consistency of bound entities (that is, file designs) is not checked at program execution time. You must monitor consistency with the HPO Check option. This option compares the date and time stamp on the bound program with the current date and time stamps on the entities bound in that program. If any bound entity is changed, the program name is listed along with the names of changed entities. In the case RDM and TOTAL views, the checking is done automatically at execution time. The program will not run if an inconsistency is detected in the view.

To bind a program, use either the BIND command in the Full-Screen Editor or select HPO Bind from the Program Design Facility menu (see “[Accessing the Program Design Facility](#)” on page 25). It is recommended that you use the BIND command in the Full-Screen Editor first (see “[Using the Full-Screen Editor](#)” on page 165) to test the bindability of your program. Then, use the HPO Bind option to bind programs once they have been tested.

For information on SQL binding, refer to [MANTIS DB2 Programming, OS/390, VSE/ESA](#), P39-5028.

HPO Check, HPO Bind, and HPO Unbind

To bind a program, use either the BIND command in the Full-Screen Editor or select HPO Bind from the Program Design Facility menu (see “[Accessing the Program Design Facility](#)” on page 25). It is recommended that you use the BIND command in the Full-Screen Editor first (see “[Using the Full-Screen Editor](#)” on page 165) to test the bindability of your program. Then, use the HPO Bind option to bind programs once they have been tested.

Bind Options for the High-Performance Option (HPO) programs include checking, binding, and unbinding actions. These actions can be selected in any of the ways described in the following sections.

Starting HPO Bind Options

The HPO Bind Options, HPO Check, HPO Bind, HPO Unbind can be started in one of three ways:

- ◆ Start the Bind Options from the Program Design Facility menu panel.
- ◆ When you select any of the HPO Options and do not supply a program name, the appropriate parameter entry panel is provided to let you start the checking, binding, or unbinding action.
- ◆ Start the HPO Bind Options from the Program Directory List.

Starting Bind options from the menu

You can start HPO Bind options from the Program Design Facility menu in one of the following ways:

- ◆ Enter the HPO Check, HPO Bind, or HPO Unbind option number on the command line or in the selection field.
- ◆ Enter the command CHECK, BIND, or UNBIND, a space, and an executable program name on the command line, for example, CHECK CUST_BROWSE.

Starting Bind Options from the Program Directory List

HPO Bind Options can also be accessed from your program directory. To select the options from the Program Directory List, do one of the following:

- ◆ Enter the command CHECK, BIND, or UNBIND in the Action field of a specific executable program as shown in the following screen illustration:

```
PRGMLIST01          Program Directory List (ACCT)          YYYY/MM/DD HH:MM:SS
===>
Action   Name           Date      Time      Ver  FMT  Status
-----
BIND_____ CUST_INSERT    90/08/23  10:16:42   4  C   ACTIVE
_____ CUST_BROWSE@   90/08/19   9:36:27  10             ACTIVE
_____ CUST_DELETE    90/08/12   1:16:32   7  C   ACTIVE
_____ CUST_MAINT     90/08/09   2:16:22   7             ACTIVE

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...
```

- ◆ Enter the command CHECK, BIND, or UNBIND on the command line and tag multiple executable programs to be checked, bound, or unbound, by typing a selection character (/) in the corresponding Action fields as shown in the following screen illustration:

```
PRGMLIST01          Program Directory List (ACCT)          YYYY/MM/DD HH:MM:SS
===> BIND
Action  Name          Date      Time      Ver  FMT  Status
-----
/_____ CUST_INSERT      90/08/23  10:16:42   4  C   ACTIVE
_____ CUST_BROWSE@     90/08/19   9:36:27   10  C   ACTIVE
/_____ CUST_DELETE      90/08/12   1:16:32   7  C   ACTIVE
_____ CUST_MAINT       90/08/09   2:16:22   7    C   ACTIVE

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...
```

- ◆ You can also type the command CHECK, BIND, or UNBIND in the Action field of one program, and then repeat the command in subsequent Action fields by typing an equal sign (=). Be sure the equal sign is typed in Action fields below the Action field where you typed the command as shown in the following screen illustration:

```

PRGMLIST01          Program Directory List (ACCT)          YYYY/MM/DD HH:MM:SS
===>
Action   Name           Date      Time      Ver  FMT  Status
-----
BIND ___ CUST_INSERT      90/08/23 10:16:42   4  C   ACTIVE
      ___ CUST_BROWSE@    90/08/19  9:36:27  10             ACTIVE
      =  CUST_DELETE    90/08/12  1:16:32   7  C   ACTIVE
      =  CUST_MAINT     90/08/09  2:16:22   7             ACTIVE
    
```

F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F8=FWD F9=RETRIEVE ...



If you are using the BIND command in the Full-Screen Editor to bind a program, the date and time stamps for the Bind action (shown on the UPDATE Program Profile panel) are updated when the bound program is saved or replaced.

HPO parameter entry panels

If you select a Bind Option by typing the option number in the selection field on the Program Design Facility menu (see “[Accessing the Program Design Facility](#)” on page 25) or if you do not supply a program name when issuing BIND, CHECK, or UNBIND, a program entry panel is displayed to let you supply names and set options. If you do supply a program name, the system default values are used for the Entry and Function Options.

The parameter entry panel lets you specify a single program name, a range of program names, or a generic pattern of names. In addition, you can also set the Entry Options and the single Function Option on that entry panel that takes place during processing of the HPO Check, HPO Bind, and HPO Unbind action. The following screen illustration shows an example of a parameter entry panel for the Bind action:

```

PRGMENT01A      BIND Program Entry                      YYYY/MM/DD HH:MM:SS
====>
From
  Library . . . . ACCT
  Name . . . .
  Description .

Thru
  Name . . . .

Entry Options          Function Options          Process Statistics
  Immediate? . . . . Y      Display status? . . Y      Processed . .
  Confirmation? . . N      Errors . . . .

Addendum? . . . . N

000: READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F6=EXECUTE  F7=CONFIRM ...

```

The From Library field displays your user library only and cannot be changed. You can alter the From and Thru fields and set the Entry Options and Function Options.

A similar parameter entry panel will be displayed for Check, and Unbind actions. See “[Field descriptions](#)” on page 427 for detailed field descriptions for parameter entry panels.

Entry and Function Options control the way the Check, Bind and Unbind action is executed from the parameter entry panel. You can change the settings of these options, but when you exit from the parameter entry panel, the options are reset to original default values. Your Master User can determine the permanent default settings for individual users.

In addition to the fields on the CHECK, BIND, or UNBIND parameter entry panel, there is a message line and a function key line. See “[Using the Program Design Facility](#)” on page 31 for information on these areas.

After typing the program name, Entry Options, and Function Options, press ENTER. The message U00: OK TO EXECUTE will be displayed in the Message Field at the bottom of the panel. Press the EXECUTE key (or enter the EXECUTE command) on the command line) to complete the action. You can bypass pressing ENTER and issue EXECUTE directly after supplying the program name and setting the options.

If you set the Function Option “Display Status” to Y (yes) on the BIND Program Entry panel shown in the preceding screen illustration, a status report will be shown as in the following screen illustration:

```
HPOSTAT                HPO Status Report                YYYY/MM/DD HH:MM:SS
The following status was returned from HPO while you were doing:
Action . . . . . : BIND
Program
  Library . . . . . : ACCT
  Name . . . . . : CUST_MAINT
Status
  Code . . . . . : FMT
  Message . . . . . : BINDING STOPPED AT LINE 770

ENTER  F1=HELP  F3=EXIT  F12=CANCEL
```

The same type of report is displayed for the checking, binding, and unbinding actions. All fields on this report are for viewing only and cannot be changed. To return to the previous panel, press ENTER or issue EXIT or CANCEL.

HPO status codes

The following table describes the most common MANTIS status codes and message text that appear on the HPO Status Report as a result of the HPO Check, HPO Bind, and HPO Unbind actions. If a message is displayed on the HPO Status Report but is not shown on the following list, refer to the MANTIS programming messages in *MANTIS Messages and Codes, OS/390, VSE/ESA*, P39-5004.

| Code | Received from | Message |
|------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| BCK | HPO Check | CONSISTENT. Signifies that no changes were made to this program since the last time it was bound. |
| BFA | HPO Bind | FAULT ### AT LINE ####. A MANTIS fault was encountered in the binding process, and various return codes can be displayed in this message. |
| BNC | HPO Check | INCONSISTENCY AT LINE #####. Shows that changes were made to the program at the line specified in "n" since the last time the program was bound. |
| FMT | HPO Bind | BINDING STOPPED AT LINE #####. Indicates the program was successfully bound up to the statement number indicated. |
| BNO | HPO Check | NOT A BOUND PROGRAM. Indicates that the program you are checking has not been bound. |
| BOF | HPO Unbind | UNBOUND. This message confirms a successful unbind—the deleting of the bound program version with the replacement of the unbound version. |

To return to the previous panel, press ENTER or issue EXIT or CANCEL. To display a help panel type HELP, a space, and the code on the command line of the entry panel (e.g., ==> HELP BCK or ==> HELP BFA). The same description of the messages on this page will be displayed on your panel.

SQL Check, SQL Bind, SQL Unbind, SQL Maint

SQL Bind Options appear under the Bind group heading on the Program Design Facility menu (see “[Accessing the Program Design Facility](#)” on page 25). These options include checking, binding, and unbinding actions. This section provides an overview of the SQL Bind Options, including a discussion of the SQL Maint option, which is located under the Utilities group heading on the Program Design Facility menu.

When a MANTIS program is SQL bound, MANTIS temporarily HPO binds the program (if it is not already HPO bound.) This binding determines the data type and length of MANTIS variables used as host variables in SQL statements. Any host variables that are not resolved by the HPO bind are considered undefined and may default to BIG.

For a complete discussion of the SQL bind process, refer to [MANTIS DB2 Programming, OS/390, VSE/ESA](#), P39-5028.

Starting SQL Bind options

There are several ways to start the SQL Bind options:

- ◆ Select from the menu panel using option numbers or commands.
- ◆ Select from the program directory using commands.

Starting SQL Bind options from the menu panel

To start an SQL Bind action from the Program Design Facility menu panel, do one of the following:

- ◆ Enter the SQL Check, SQL Bind, SQL Unbind, or SQL Maint option number on the command line or in the selection field.
- ◆ Enter the command SQLCHECK, SQLBIND, SQLUNBIND, or SQLMAINT, a space, and an executable program name on the command line, for example, SQLCHECK CUST_BROWSE.

When you select any of the SQL Options and do not supply a program name, the appropriate parameter entry panel is provided to let you start the checking, binding, unbinding, or maintenance action. See [“SQL parameter entry panels”](#) on page 386 for information on parameter entry panels.

Starting SQL Bind Options from the Program Directory List

The SQL Bind Options can also be accessed from your program directory. To select the SQL Bind Options from the Program Directory List, do one of the following:

- ◆ Enter the command SQLCHECK, SQLBIND, SQLUNBIND, or SQLMAINT in the Action field of a specific executable program as shown in the following screen illustration:

```

PRGMLIST01          Program Directory List (ACCT)          YYYY/MM/DD HH:MM:SS
===>
Action   Name                               Date           Time           Ver FMT Status
-----
SQLBIND_ CUST_INSERT                               YYYY/MM/DD    HH:MM:SS      4  C   ACTIVE
-----
         CUST_BROWSE@                       YYYY/MM/DD    HH:MM:SS      10         ACTIVE
-----
         CUST_DELETE                         YYYY/MM/DD    HH:MM:SS      7  C   ACTIVE
-----
         CUST_MAINT                          YYYY/MM/DD    HH:MM:SS      7         ACTIVE
-----

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

- ◆ Enter the command SQLCHECK, SQLBIND, SQLUNBIND, or SQLMAINT on the command line and tag multiple executable programs to be checked, bound, unbound, or viewed for maintenance by typing a selection character (/) in the corresponding Action fields as shown in the following screen illustration:

```

PRGMLIST01      Program Directory List (ACCT)      YYYY/MM/DD HH:MM:SS
===> SQLBIND
Action   Name                               Date      Time      Ver  FMT  Status
-----
/ _____ CUST_INSERT      YYYY/MM/DD HH:MM:SS   4  C   ACTIVE
_____ CUST_BROWSE@     YYYY/MM/DD HH:MM:SS  10
/ _____ CUST_DELETE     YYYY/MM/DD HH:MM:SS   7  C   ACTIVE
_____ CUST_MAINT      YYYY/MM/DD HH:MM:SS   7   ACTIVE

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...
    
```



If you set UPPERCASE to OFF in the Full-Screen Editor (FSE), SQL commands must be entered in uppercase mode in order to be recognized.

- ◆ You can also type the command SQLCHECK, SQLBIND, SQLUNBIND, or SQLMAINT in the Action field of one program, and then repeat the command in subsequent Action fields by typing an equal sign (=). Be sure the equal sign is typed in Action fields below the Action field where you typed the command as shown in the following screen illustration:

```

PRGMLIST01          Program Directory List (ACCT)          YYYY/MM/DD HH:MM:SS
====>
Action      Name                Date          Time          Ver FMT  Status
-----
SQLBIND_   CUST_INSERT                YYYY/MM/DD   HH:MM:SS     4  C   ACTIVE
_____   CUST_BROWSE@              YYYY/MM/DD   HH:MM:SS    10             ACTIVE
=_____   CUST_DELETE                YYYY/MM/DD   HH:MM:SS     7  C   ACTIVE
=_____   CUST_MAINT                 YYYY/MM/DD   HH:MM:SS     7             ACTIVE

```

F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F8=FWD F9=RETRIEVE ...

SQL parameter entry panels

When you select the SQL Check, Bind or Unbind Options and do not supply a program name, the appropriate parameter entry panel is provided to let you start the action. Parameter entry panels let you specify a single program name, a range of program names, or a generic pattern of names. In addition, you can also set the Entry Options and the Function Options on that entry panel that take place during processing of the SQL Check, SQL Bind, and SQL Unbind action. When you select the SQL Maint option you will receive a complete list of bound programs and their corresponding module names. This information is displayed on the SQL Bind Information Panel. From this panel you can view and/or purge programs and modules (see “SQL Maint” on page 388).

The following screen illustration shows the SQL Bind Program Entry panel:

```

PRGMENT01A      SQLBIND Program Entry      YYYY/MM/DD HH:MM:SS
==>
From
  Library . . .  ACCT
  Name . . . .
  Description .

Thru
  Name . . . .

Entry Options      Function Options      Process Statistics
Immediate? . . . . Y      Preprocess Options?      Y Processed . .
Confirmation? . . N      . . Save/Replace . .    S Skipped . . .
Addendum? . . . . N      . . Keep/Revoke . .    K Errors . . . .
                          . . Block/Noblock . .    B
                          Undefined Variables?      1

000: READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F6=EXECUTE  F7=CONFIRM ...

```

The Program Design Facility supplies a parameter entry panel for the SQL Check, Bind, and Unbind options. The parameter entry panel fields are similar, but a unique title is displayed for the options as shown.

The SQLBIND Program Entry panel, shown in the preceding screen illustration, allows you to specify a single program name, a range of program names, or a generic pattern of names. You can also specify Function Options which are described below. The From Library field displays your user library only and cannot be changed.

Entry and Function Options control the way the SQL Check, SQL Bind and SQL Unbind actions are executed from the parameter entry panel. You can change the settings of these options, but when you exit from the parameter entry panel, the options are reset to original default values. Your Master User can determine the permanent default settings for individual users.

In addition to the fields on the SQLCHECK, SQLBIND, and SQLUNBIND parameter entry panels, there is a message line and a function key line. See [“Using the Program Design Facility”](#) on page 31 for information on these areas.

After typing the program name, Entry Options, and Function Options, press ENTER. The message U00: OK TO EXECUTE will be displayed in the Message Field at the bottom of the panel. Press the EXECUTE key (or enter the EXECUTE command) on the command line) to complete the action. You can bypass pressing ENTER and issue EXECUTE directly after supplying the program name and setting the options.

For more information on setting the function options for the SQL Program Entry Panels, refer to the [MANTIS DB2 Programming, OS/390, VSE/ESA](#), P39-5028.

8

Utilities

This chapter describes the various options that are available under the Utilities group heading on the Program Design Facility menu shown in the following screen illustration. The utility options covered in this chapter are:

- ◆ Audit Trail
- ◆ Browse Audit Trail
- ◆ Browse Program Profile
- ◆ Trigger List

Utilities options

The options are discussed in the order in which they appear on the Program Design Facility menu. The SQL Maint option is discussed in “[Bind Options](#)” on page 365.

```

PRGMMENU01      Program Design Facility (ACCT)                YYYY/MM/DD HH:MM:SS
===>

Please select one of the menu items below.

   Program      Component Engineering  Bind Options      Utilities
-  1. List       7. CEF Check        12. HPO Check     18. Audit Trail
   2. Edit       8. " Compose        13. " Bind        19. Browse Audit Trail
   3. Profile    9. " Decompose     14. " Unbind     20. " Prgm Profile
   4. Purge     10. CREF Programs  15. SQL Check    21. Trigger List
   5. Copy      11. Bill of Materials 16. " Bind       22. SQL Maint
   6. Rename

000:  READY
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F9=RETRIEVE  F12=CANCEL ...

```

For a quick reference list of commands, see “[Editing commands](#)” on page 507. For the detailed descriptions of these commands, see “[Program Design Facility commands](#)” on page 85.

The Utilities options allow you to display the Audit Trail List, view individual audit trail and program profile records, and operate the Trigger file. The following table provides a brief description of and section references for the utility options:

| Option | Description | Section |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Audit Trail | Displays the Audit Trail List that shows activities performed on a program or component, with the last action issued appearing at the top of the list. | "Audit Trail" on page 392 |
| Browse Audit Trail | Lets you browse through each record on the external Entity Log to view audit trail information for the effects of program activity on your library. | "Browse Audit Trail" on page 397 |
| Browse Program Profile | Lets you browse through each program in your directory to view individual profile information. | "Browse Program Profile" on page 398 |
| Trigger | Displays a list panel of trigger records that shows the most recent record at the bottom of the list. You can execute, update or delete trigger records from this list panel or execute these records in a batch job. | "Trigger List" on page 399 |

Audit Trail

The Audit Trail option displays the Audit Trail List. This list panel shows the effect of activities performed on a program or component (such as Compose, Decompose, CEF Check, Edit, CREF, and others). The records you see on the Audit Trail List appear with the latest activity on a program shown at the top of the list.

When you issue an action (like Compose), the name of the action (and the program name on which that action was issued) is written to the Entity Log, an external file that contains records of program activity. When you display the Audit Trail List, you are viewing the latest program activity as recorded on the Entity Log.

As necessary for your environment, your Master User has the option of temporarily or permanently disabling the logging of actions for a single user or for multiple users. If so, you can still select the Audit Trail option, but the Audit Trail List panel will be blank and the F09: END OF FILE message will be displayed. If the Audit Trail option is available, select it in one of the ways described below.

When you select the Audit Trail option, an Audit Trail List is displayed as shown in the following screen illustration to show the latest program or component activity. The record showing the most recent program change information appears at the top of the list.

```

ELOGLIST01      Audit Trail List (ACCT)                      YYYY/MM/DD HH:MM:SS
====>
Action   SeqNo Name                                     Date      Time      Action Code
-----
_____ 99953 CUST_BROWSE                                     YYYY/MM/DD HH:MM:SS COMPOSE
_____ 99554 CUST_BROWSE@                                    YYYY/MM/DD HH:MM:SS REPLACE
_____ 99555 CUST_DELETE                                     YYYY/MM/DD HH:MM:SS COMPOSE
_____ 99556 CUST_DELETE@                                    YYYY/MM/DD HH:MM:SS REPLACE
_____ 99557 CUST_INSERT                                     YYYY/MM/DD HH:MM:SS COMPOSE
_____ 99558 CUST_INSERT@                                    YYYY/MM/DD HH:MM:SS REPLACE
_____ 99559 CUST_UPDATE                                     YYYY/MM/DD HH:MM:SS COPY
_____ 99560 CUST_UPDATE_TEST                               YYYY/MM/DD HH:MM:SS COPY

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

In addition to viewing the records of activity shown, you can enter a command on the command line (===>) of the Audit Trail List panel, or you can enter a command in the Action field for a specific record displayed. If you enter a CEF action in the Action field, the action is taken only on the program shown in the Name field and not on the audit trail record itself.

To view the valid actions for this list panel, issue PROMPT.

Some information fields on the Audit Trail List (Type, Library, Status, From Name, From Library, and Terminal) extend to the right in columns beyond the width of most terminal screens. To view these fields, issue RIGHT.

The first time you issue RIGHT, the Type, Library, and Status fields are displayed as shown:

```

ELOGLIST01      Audit Trail List (ACCT)                      YYYY/MM/DD HH:MM:SS
===>
Action   SeqNo  Name                                     Type Library      Status
-----
_____  99953  CUST_BROWSE                            PRGM ACCT      ACTIVE
_____  99554  CUST_BROWSE@                           PRGM ACCT      ACTIVE
_____  99555  CUST_DELETE                             PRGM ACCT      ACTIVE
_____  99556  CUST_DELETE@                            PRGM ACCT      ACTIVE
_____  99557  CUST_INSERT                             PRGM ACCT      ACTIVE
_____  99558  CUST_INSERT@                            PRGM ACCT      ACTIVE
_____  99559  CUST_UPDATE                             PRGM ACCT      ACTIVE
_____  99560  CUST_UPDATE_TEST                        PRGM ACCT      ACTIVE

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...

```

Note that Action, Seqno, and Name remain in their original positions. The second time you issue RIGHT, the From Name field is displayed as shown:

```
ELOGLIST01      Audit Trail List (ACCT)                YYYY/MM/DD HH:MM:SS
==> RIGHT
Action   Seqno   Name                               From Name
-----
_____ 99953   CUST_BROWSE                        CUST_BROWSE@
_____ 99554   CUST_BROWSE@
_____ 99555   CUST_DELETE                        CUST_DELETE@
_____ 99556   CUST_DELETE@
_____ 99557   CUST_INSERT                        CUST_INSERT@
_____ 99558   CUST_INSERT@
_____ 99559   CUST_UPDATE                        CUST_UPDATE1
_____ 99560   CUST_UPDATE_TEST                  CUST_UPDATE_TEST1

F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...
```

The third time you issue RIGHT, Type and Status are redisplayed, along with the From Library as shown:

```
ELOGLIST01      Audit Trail List (ACCT)                      YYYY/MM/DD HH:MM:SS
===>
Action   SeqNo  Name                                     Type From library      Status
-----  -
-----  -
- 99953  CUST_BROWSE                             PRGM ACCT             ACTIVE
- 99554  CUST_BROWSE@                            PRGM ACCT             ACTIVE
- 99555  CUST_DELETE                             PRGM ACCT             ACTIVE
- 99556  CUST_DELETE@                            PRGM ACCT             ACTIVE
- 99557  CUST_INSERT                             PRGM ACCT             ACTIVE
- 99558  CUST_INSERT@                            PRGM ACCT             ACTIVE
- 99559  CUST_UPDATE                             PRGM ACCT             ACTIVE
- 99560  CUST_UPDATE_TEST                       PRGM ACCT             ACTIVE
```

```
F1=HELP  F2=EXHELP  F3=EXIT  F4=PROMPT  F5=REFRESH  F8=FWD  F9=RETRIEVE ...
```

The fourth time you issue RIGHT, the identification number of the terminal (on which the action was issued) is displayed as shown:

| ELOGLIST01 | | Audit Trail List (ACCT) | | YYYY/MM/DD HH:MM:SS |
|------------|-------|-------------------------|----------|---------------------|
| ==> | | | | |
| Action | SeqNo | Name | Terminal | |
| _____ | 99953 | CUST_BROWSE | N012 | |
| _____ | 99554 | CUST_BROWSE@ | N012 | |
| _____ | 99555 | CUST_DELETE | N008 | |
| _____ | 99556 | CUST_DELETE@ | N008 | |
| _____ | 99557 | CUST_INSERT | N012 | |
| _____ | 99558 | CUST_INSERT@ | N012 | |
| _____ | 99559 | CUST_UPDATE | Q003 | |
| _____ | 99560 | CUST_UPDATE_TEST | Q003 | |

F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F8=FWD F9=RETRIEVE ...

To step back through these scroll areas one panel at a time, issue LEFT. Issuing LEFT will return the original display of the Audit Trail List illustrated at the beginning of this section.

You can enter RIGHT *n* or LEFT *n* on the command line (where *n* is the number of columns you want to move the list to the right or to the left). If you enter more columns than are contained on the Audit Trail List (e.g., LEFT 500), the first page of the list will be displayed.

To return to the Program Design Facility menu, issue EXIT. To return to the MANTIS Facility Selection menu, issue MENU. To exit from MANTIS, issue LOGOFF. For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

Browse Audit Trail

The Browse Audit Trail option lets you browse through each record on the external Entity Log to view Audit Trail information for the effects of program activity on your library. When you select Browse Audit Trail, the Browse Audit Trail Records panel is displayed as shown in the following screen illustration:

```

ELOGBROW01      BROWSE Audit Trail Records      YYYY/MM/DD HH:MM:SS
===>
Base Information
  Library . . . . . ACCT                      SeqNo . . . . . 99553
  Terminal Id . . . . I007
Action Data
  Action code . . . . COMPOSE
  Date . . . . . YYYY/MM/DD
  Time . . . . . HH:MM:SS
  Version . . . . . 3
Destination
  Library . (Bin) . . ACCT
  Type . . . . . PRGM
  Name . . . . . CUST_UPDATE
  Description . . . . UPDATE PROGRAM
  Status . . . . . ACTIVE
Source
  Library . (Bin) . . ACCT
  Type . . . . . PRGM
  Name . . . . . CUST_UPDATE@
  Description . . . . UPDATE PROGRAM - SOURCE
  Status . . . . . ACTIVE
F03: MORE RECORDS FOLLOW
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F8=FWD F12=CANCEL F13=HELP KEY ...

```

Press the forward scroll key to view the audit trail information for individual programs in the order in which they appear on the Audit Trail List. When you have reached the last record on the list (SeqNo shows 99999), and you press the forward scroll key, the panel fields will be cleared. To start the browse over from the first record, simply press the forward scroll key again.

To locate a specific program, type the sequence number that corresponds to the program you want (obtain sequence number from the Audit Trail List) over the number appearing in the SeqNo field and press ENTER. You can also enter a command on the command line of this browse panel. To view valid commands for this panel, issue PROMPT.

To return to the Program Design Facility menu, issue EXIT. To return to the MANTIS Facility Selection menu, issue MENU. To exit from MANTIS, issue LOGOFF.

Browse Program Profile

The Browse Program Profile option lets you browse through each program in your directory to view individual profile information.

When you select Browse Program Profile, the Browse Program Profile Records panel is displayed as shown in the following screen illustration:

```

PRGMBROW01      BROWSE Program Profile Records      YYYY/MM/DD HH:MM:SS
===>
Base Information
Library . . . . . ACCT
Name . . . . . CUST_BROWSE@      Password DEPT1234
Description . . . BROWSE PROGRAM - SOURCE
Status . . . . . ACTIVE      Size . . . . . 1,738
Audit Attributes  Sel  Date      Time      Ver      User      Terminal
Change . . . . . N    YYYY/MM/DD  HH:MM:SS  2      ACCT      N004
CEF Check          Y    YYYY/MM/DD  HH:MM:SS  1      ACCT      N004
  " Compose        Y    YYYY/MM/DD  HH:MM:SS  2      ACCT      N004
  " Decompose      N
HPO Check          N
  " Bind           N
  " Unbind         N
SQL Check          N
  " Bind           N
  " Unbind         N
Cref               Y    YYYY/MM/DD  HH:MM:SS  4      ACCT      N020
Print              N
Transfer Out       N    YYYY/MM/DD  HH:MM:SS  3      ACCT      N020
Transfer In        N
F03: MORE RECORDS FOLLOW
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F8=FWD F9=RETRIEVE F12=CANCEL ...

```

Press the forward scroll key to view the program profile information for individual programs in the order in which they appear on your directory. To locate a specific program, type the program name over the one appearing in the Name field and press ENTER.

You can also enter a command on the command line of this browse panel. To view valid commands for this panel, issue PROMPT.

To return to the Program Design Facility menu, issue EXIT. To return to the MANTIS Facility Selection menu, issue MENU. To exit from MANTIS, issue LOGOFF.

Trigger List

The Trigger List option displays a panel of trigger records, the Trigger File List, arranged to show the most recent record appearing at the bottom of the list. In addition, a unique sequence number is assigned to each record to identify it on the list.

To select the Trigger List option (and view the Trigger File List), enter the option number that corresponds to Trigger List in the Selection field (___) or on the command line of the Program Design Facility menu. The Trigger File List will then be displayed as described in “[Trigger File List](#)” on page 400.

Creating trigger records

To create a trigger record that will be shown on the Trigger File List, follow these steps:

1. Set the Entry Option “Immediate?” to N (no) on the parameter entry panel associated with the desired action. For example, to create Decompose trigger records, set “Immediate?” to N on the DECOMPOSE Program Entry panel.
2. Issue the action from the parameter entry panel on the designated program(s). The program status must be ACTIVE or the action you are issuing will be bypassed. (See note below).
3. Return to the Program Design Facility menu and select the “Trigger list” option. The records you created display on the Trigger File List.
4. You can issue the UPDATE, DELETE, or EXECUTE commands to manage individual (or all) trigger records immediately, or you can run a batch job to execute the actions on all trigger records. For information about this batch job, see “[Trigger File batch processing](#)” on page 421.



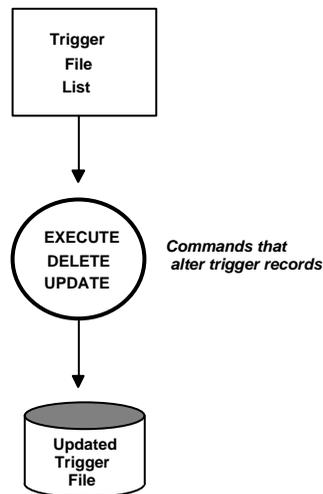
If the status of the trigger record is a value other than ACTIVE, the action on the record will not be attempted. However, the action on the trigger record will only be performed when the status of the program (on which the action is operating) also has a value of ACTIVE. Also note that Profile and Purge are exceptions to this rule; that is, Profile and Purge will execute regardless of program status or trigger record status.

Trigger File List

The Trigger File List is the central panel in the Program Design Facility where you can see the actions that you deferred for later processing. This list panel makes trigger records available to you for immediate viewing, updating, executing, and deleting. You also have the option of running a batch job that executes all displayed records offline. For information about this batch job, see “[Trigger File UPDATE](#)” on page 416.

The Trigger File List can help to save time and resources when testing similar programs. For example, you can test the COMPOSE action on a single trigger record by issuing EXECUTE. You can then make any necessary modifications to that one program. When correct, you can change the remaining programs for the rest of the COMPOSE trigger records, recreate the same records, and submit a batch job to issue COMPOSE on all records at once, knowing that all the necessary programs were corrected. Testing and correcting one program, and then using the Trigger File List to show all related programs that need similar changes, can be an efficient way to test programs and issue actions.

The following figure shows the online Trigger file process. Issuing the EXECUTE, UPDATE, and DELETE commands from the Trigger File List alters trigger records immediately.



Trigger records are not executed until you issue EXECUTE. Records remain on the Trigger File List until you issue EXECUTE (or DELETE) for specific (or all) records, or run a batch job to execute all records on the list.

The following screen illustration shows a sample of the Trigger File List:

| ETRGLIST01 | | Trigger File List (ACCT) | | YYYY/MM/DD HH:MM:SS | | |
|------------|-------|--------------------------|--------------|---------------------|----------|---|
| ===> | | | | | | |
| Action | SeqNo | Request | From Name | Date | Time | S |
| _____ | 00001 | CEFCHECK | CUST_BROWSE@ | YYYY/MM/DD | HH:MM:SS | A |
| _____ | 00002 | CEFCHECK | CUST_DELETE@ | YYYY/MM/DD | HH:MM:SS | A |
| _____ | 00003 | COMPOSE | CUST_INSERT@ | YYYY/MM/DD | HH:MM:SS | A |
| _____ | 00004 | BIND | CUST_MENU | YYYY/MM/DD | HH:MM:SS | A |
| _____ | 00005 | COPY | CUST_UPDATE@ | YYYY/MM/DD | HH:MM:SS | A |
| _____ | 00006 | DECOMPOSE | CUST_MAINT | YYYY/MM/DD | HH:MM:SS | A |

F09: END OF FILE
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F8=FWD F9=RETRIEVE ...

The Trigger File List displays records as they are created. This means the most recent record will be displayed at the bottom of the list. Considering the dates shown in the previous example, the Decompose action (SeqNo 00006) was the last action issued and deferred to the Trigger file.

In addition to viewing the trigger records, you can enter a command on the command line (===>) of the Trigger File List or in the Action field for a specific record. To view the valid actions for this panel, issue PROMPT.

The command line and Action field are the only places on the list where you can enter commands. Generally, the other fields are displayed for viewing only. However, the SeqNo field, which shows the unique sequence number associated with each trigger record, can be altered. To reposition the list to a new sequence number, type over the first sequence number at the top of the list (directly under SeqNo) with a new sequence number, and press ENTER. The Trigger File List will be repositioned to the new number.

Request shows the name of the action you deferred for a trigger record, such as CEF CHECK, COMPOSE, or BIND. This is the action that will be performed when you issue EXECUTE. The From Name field shows the name of the program designated for the action on the trigger record. Date and Time indicate when the trigger record was created, showing the oldest record at the top of the list. S (Status) shows the first character of the trigger record's status, such as A (ACTIVE) in the previous example.

To locate a generic range of trigger records from the Trigger File List, use the L (locate) command with the wildcard characters "*" and "?".

Wildcard processing from the Trigger File List is based on a numeric text string search of the SeqNo field, where "*" represents an indefinite string of numbers, and "?" represents a single number. Because the wildcard search is based on a numeric string, the first character you specify in the generic pattern must be a whole number. The wildcard character cannot be the first character in the string. Given a range of sequence numbers from 00100 to 00500, consider the following examples:

| If you enter | MANTIS returns the SeqNo |
|--------------|--------------------------|
| L 003* | 003000... |
| L 3* | 30000... |
| L 30* | 30000... |
| L 3?? | 00300 |
| L 300 | 00300 |
| L *3 | Invalid |
| L ??3 | Invalid |

Along with the full Status field, other information fields on the Trigger File List (Type, From Library, and To Name) extend to the right in columns beyond the width of most screens. To view these fields, issue RIGHT. The first time you issue RIGHT, the Status, Type, and From Library are shown as follows:

| ETRGLIST01 | | Trigger File List (ACCT) | | | | YYYY/MM/DD HH:MM:SS | | | |
|-----------------------------------------------------------------------|-------|--------------------------|------------|----------|--------|---------------------|--------------|-----|--|
| ==> | | | | | | | | | |
| Action | SeqNo | Request | Date | Time | Status | Type | From Library | To | |
| ----- | | | | | | | | | |
| --- | 00001 | CEF CHECK | YYYY/MM/DD | HH:MM:SS | ACTIVE | PRGM | ACCT | --- | |
| --- | 00002 | CEF CHECK | YYYY/MM/DD | HH:MM:SS | ACTIVE | PRGM | ACCT | --- | |
| --- | 00003 | COMPOSE | YYYY/MM/DD | HH:MM:SS | ACTIVE | PRGM | ACCT | --- | |
| --- | 00004 | BIND | YYYY/MM/DD | HH:MM:SS | ACTIVE | PRGM | ACCT | --- | |
| --- | 00005 | COPY | YYYY/MM/DD | HH:MM:SS | ACTIVE | PRGM | ACCT | TE | |
| --- | 00006 | DECOMPOSE | YYYY/MM/DD | HH:MM:SS | ACTIVE | PRGM | ACCT | --- | |
| F09: END OF FILE | | | | | | | | | |
| F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F8=FWD F9=RETRIEVE ... | | | | | | | | | |

The second time you issue RIGHT, the full To Name field is displayed as shown:

```

ETRGLIST01      Trigger File List (ACCT)                      YYYY/MM/DD HH:MM:SS
==>
Action   SeqNo Request   From Library   To Name
-----
_____ 00001 CEFCHECK    ACCT
_____ 00002 CEFCHECK    ACCT
_____ 00003 COMPOSE   ACCT
_____ 00004 BIND     ACCT
_____ 00005 COPY     ACCT          TEST_ACCT
_____ 00006 DECOMPOSE ACCT

```

F09: END OF FILE
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F8=FWD F9=RETRIEVE ...

To step back through these fields one panel at a time (toward the original display of the list), issue LEFT.

You can also enter RIGHT *n* or LEFT *n* on the command line (where *n* is the number of columns you want to move the list to the right or to the left). If you enter more columns than are on the Trigger File List (e.g., LEFT 500), the first page (original display of the list) will be shown.

To clear the Action fields and refresh the list, issue REFRESH. To return to the Program Design Facility menu, issue EXIT. To return to the MANTIS Facility Selection menu, issue MENU. To exit from MANTIS and bypass the Program Design Facility menu, issue LOGOFF.

For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

Trigger File commands

The following table lists the commands that help you manage trigger records:

| Command | Description |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| DELETE | Removes a record from the Trigger file (if you confirm the deletion). DELETE does not remove a program from the MANTIS cluster. |
| EXECUTE | Releases a trigger record, executes the action displayed in the Request field on the Trigger File List, and removes the record from the list. |
| UPDATE | Allows you to alter the Status and Function Options for a specific trigger record. |

The DELETE, EXECUTE, and UPDATE commands can be issued from the command line or Action field of the Trigger File List. The following sections show how to use each command.

Trigger File DELETE

The DELETE action removes a record from the Trigger file (if you confirm the deletion), but DELETE does not remove a program from the MANTIS cluster. Use DELETE to remove a single trigger record, multiple records, or a range of records from the Trigger File List.

Delete a specific record

To delete a specific trigger record, type the DELETE command in the Action field for that record on the Trigger File List and press ENTER. The DELETE Trigger Record Entry panel, as shown in the following screen illustration, is displayed to let you confirm (or skip) the deletion:

```

PRGMEN101      DELETE Trigger Record Entry      YYYY/MM/DD HH:MM:SS
===>
From
  Library . . . ACCT
  SeqNo . . . . 00002
  Description . EDIT CUST_DELETE@

Thru
  SeqNo . . . .

Entry Options      Function Options      Process Statistics
  Immediate? . . . Y                      Processed . . .
  Confirmation? . . Y                      Skipped . . .
                                           Errors . . . .

DELETE  00002

U01: CONFIRM OR SKIP
F1=HELP  F2=EXHELP F3=EXIT  F4=PROMPT F5=REFRESH F6=EXECUTE F7=CONFIRM ...

```

The “Immediate?” Entry Option must remain set at Y (yes) to allow the deletion to occur. Changing “Immediate?” to N (no) will display the message U18: TRIGGER ACTION WITH IMMEDIATE=N IS INVALID.

For a list of valid commands to use with the DELETE Trigger Record Entry panel, issue PROMPT. For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

If you issue CONFIRM, the Trigger File List will be redisplayed. An asterisk (*) will be shown in the Action field to indicate the Delete action was processed:

| ETRGLIST01 | | Trigger File List (ACCT) | | | YYYY/MM/DD HH:MM:SS | | |
|------------|-------|--------------------------|--------------|------------|---------------------|---|--|
| ====> | | | | | | | |
| Action | SeqNo | Request | From Name | Date | Time | S | |
| ----- | 00001 | CEFCHECK | CUST_BROWSE@ | YYYY/MM/DD | HH:MM:SS | A | |
| *DELETED_ | 00002 | CEFCHECK | CUST_DELETE@ | YYYY/MM/DD | HH:MM:SS | D | |
| ----- | 00003 | COMPOSE | CUST_INSERT@ | YYYY/MM/DD | HH:MM:SS | A | |
| ----- | 00004 | BIND | CUST_MENU | YYYY/MM/DD | HH:MM:SS | A | |
| ----- | 00005 | COPY | CUST_UPDATE@ | YYYY/MM/DD | HH:MM:SS | A | |
| ----- | 00006 | DECOMPOSE | CUST_MAINT | YYYY/MM/DD | HH:MM:SS | A | |

Notice that the S (status) field has now been changed from the trigger record's original status A (active) to D (deleted). If you issue REFRESH, trigger record 2 will be removed from the list. However, the program (CUST_DELETE@ in this example) will remain in your program directory.

If you issue SKIP from the DELETE Trigger Record Entry panel, the Trigger File List will be redisplayed as shown, but the S (status) field will be changed to S (skipped). If you decide to delete the record, you can reissue DELETE. To reissue, use the space bar to clear only the asterisk (*) from the Action field, press ENTER, and the DELETE Trigger Record Entry panel will be redisplayed.

Delete multiple records

To delete multiple trigger records at one time, type the DELETE command on the command line of the Trigger File List. Then select one or more records from the list by typing the selection indicator (/) in the Action fields next to the records you want to delete, as shown:

```

ETRGLIST01      Trigger File List (ACCT)                YYYY/MM/DD HH:MM:SS
==> DELETE
Action   SeqNo Request      From Name          Date      Time      S
-----
/_____ 00001 CEFCHECK    CUST_BROWSE@      YYYY/MM/DD HH:MM:SS  A
/_____ 00002 CEFCHECK    CUST_DELETE@      YYYY/MM/DD HH:MM:SS  D
/_____ 00003 COMPOSE     CUST_INSERT@      YYYY/MM/DD HH:MM:SS  A

```

When you press ENTER, the DELETE Trigger Record panel will be displayed (in the order of their appearance on the Trigger File List) to let you confirm or skip each of the deletions you specified.

Again, a redisplay of the Trigger File List shows *DELETE in the Action fields and the S (status) fields show D (deleted). If you confirmed the deletions, issuing REFRESH will remove the confirmed records from the list.

You can also delete multiple trigger records by typing DELETE in the Action field for a single record and repeating the DELETE command with the equal sign (=) as shown:

| ETRGLIST01 | | Trigger File List (ACCT) | | YYYY/MM/DD HH:MM:SS | | |
|------------|---------|--------------------------|--------------|---------------------|----------|---|
| ===> | | | | | | |
| Action | SeqNo | Request | From Name | Date | Time | S |
| ----- | | | | | | |
| DELETE___ | 00001 | CEFCHECK | CUST_BROWSE@ | YYYY/MM/DD | HH:MM:SS | A |
| = | _ 00002 | CEFCHECK | CUST_DELETE@ | YYYY/MM/DD | HH:MM:SS | A |
| = | _ 00003 | COMPOSE | CUST_INSERT@ | YYYY/MM/DD | HH:MM:SS | A |

Be sure to type the equal sign (=) in the Action fields below the Action field where you typed the DELETE command. When you press ENTER, the DELETE Trigger Record Entry panel (illustrated at the beginning of this section) is displayed to let you confirm or skip each deletion.

Delete a range of records

To delete a range of trigger records at one time, enter the DELETE command on the command line of the Trigger File List to display the DELETE Trigger Record Entry panel. Enter the beginning sequence number (From SeqNo) and the ending sequence number (Thru SeqNo) for the range of records you want deleted, as shown in the following screen illustration:

```

PRGMENT101      DELETE Trigger Record Entry                      YYYY/MM/DD HH:MM:SS
===>
From
  Library . . .  ACCT
  SeqNo . . . . 00002
  Description .

Thru
  SeqNo . . . . 00006

Entry Options          Function Options          Process Statistics
Immediate? . . . . Y  Processed . .
Confirmation? . . . Y  Skipped . . .
                               Errors . . . .

DELETE 00002                      THRU 00006

U01: CONFIRM OR SKIP
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F5=REFRESH F6=EXECUTE F7=CONFIRM ...

```

To obtain the correct sequence numbers, see the Trigger File List. Setting the “Confirmation?” Entry Option to Y (yes) gives you the chance to confirm or skip the deletion of individual records in the range you designated. When you issue EXECUTE, the message U01: CONFIRM or SKIP will be displayed for the individual sequence number in the series that is shown on the panel. Issue CONFIRM or SKIP.

Note that the “Immediate?” Entry Option must remain set at Y (yes) to allow the deletion to occur. Changing “Immediate?” to N (no) will cause the message U18: TRIGGER ACTION WITH IMMEDIATE=N IS INVALID to appear.

For a list of valid commands to use with the DELETE Trigger Record Entry panel, issue PROMPT. For the detailed descriptions of panel fields, see [“Field descriptions”](#) on page 427.

Trigger File EXECUTE

The EXECUTE action releases a trigger record, executes the action displayed in the Request field on the Trigger File List, and removes the record from the list. Use EXECUTE to execute and remove a single trigger record, multiple records, or a range of records from the Trigger File List.

Execute a specific record

To execute a specific trigger record, type the EXECUTE command in the Action field for that record on the Trigger File List, as shown:

| ETRGLIST01 | | Trigger File List (ACCT) | | YYYY/MM/DD HH:MM:SS | | |
|------------|---------|--------------------------|--------------|---------------------|----------|---|
| ====> | | | | | | |
| Action | SeqNo | Request | From Name | Date | Time | S |
| EXECUTE | - 00001 | CEFCHECK | CUST_BROWSE@ | YYYY/MM/DD | HH:MM:SS | S |
| | - 00002 | CEFCHECK | CUST_DELETE@ | YYYY/MM/DD | HH:MM:SS | A |
| | - 00003 | COMPOSE | CUST_INSERT@ | YYYY/MM/DD | HH:MM:SS | A |
| | - 00004 | BIND | CUST_MENU | YYYY/MM/DD | HH:MM:SS | A |
| | - 00005 | COPY | CUST_UPDATE@ | YYYY/MM/DD | HH:MM:SS | A |
| | - 00006 | DECOMPOSE | CUST_MAINT | YYYY/MM/DD | HH:MM:SS | A |

When you press ENTER, the action displayed in the Request field will execute immediately. In this example for trigger record 2, the CEFCHECK action will execute, displaying the detail and/or summary reports (if you requested them).

When you exit from the action, the Trigger File List is redisplayed. An asterisk (*) in the Action field shows the record was executed:

| ETRGLIST01 | | Trigger File List (ACCT) | | YYYY/MM/DD HH:MM:SS | | |
|------------|-------|--------------------------|--------------|---------------------|----------|---|
| ===> | | | | | | |
| Action | SeqNo | Request | From Name | Date | Time | S |
| | 00001 | CEFCHECK | CUST_BROWSE@ | YYYY/MM/DD | HH:MM:SS | A |
| *EXECUTE_ | 00002 | CEFCHECK | CUST_DELETE@ | YYYY/MM/DD | HH:MM:SS | C |
| | 00003 | COMPOSE | CUST_INSERT@ | YYYY/MM/DD | HH:MM:SS | A |
| | 00004 | BIND | CUST_MENU | YYYY/MM/DD | HH:MM:SS | A |

Notice that the S (status) field has now been changed from the trigger record's original status A (ACTIVE) to C (CEFCHECK). If you issue REFRESH, trigger record 2 will be removed from the list. However, the program (CUST_DELETE@ in this example) will remain in your program directory.

Execute multiple records

To execute multiple trigger records at one time, type the EXECUTE command on the command line of the Trigger File List. Then select one or more records from the list by typing the selection indicator (/) in the Action fields next to the records you want to execute:

```

ETRGLIST01      Trigger File List (ACCT)                YYYY/MM/DD HH:MM:SS
==> EXECUTE
Action   SeqNo Request      From Name          Date          Time          S
-----  -
/_____ 00001 CEFCHECK    CUST_BROWSE@     YYYY/MM/DD   HH:MM:SS     A
/_____ 00002 CEFCHECK    CUST_DELETE@     YYYY/MM/DD   HH:MM:SS     C
/_____ 00003 COMPOSE     CUST_INSERT@     YYYY/MM/DD   HH:MM:SS     A

```

When you press ENTER, the first record in the series executes immediately. When you exit from the first record, the second record executes. When you exit from the second record, the third record executes, and so forth.

When redisplaying the Trigger File List after the last record executes, the Action fields for the executed records show *EXECUTE. In addition, the S (status) field will show the action names, like C (CEFCHECK), C (COMPOSE), E (EDIT), P (PROFILE), and others.

You can also execute multiple trigger records by typing EXECUTE in the Action field for a single record and repeating the EXECUTE command with the equal sign (=) as shown:

| ETRGLIST01 | | Trigger File List (ACCT) | | YYYY/MM/DD HH:MM:SS | | |
|------------|-------|--------------------------|--------------|---------------------|----------|---|
| ===> | | | | | | |
| Action | SeqNo | Request | From Name | Date | Time | S |
| ----- | | | | | | |
| EXECUTE__ | 00001 | CEFCHECK | CUST_BROWSE@ | YYYY/MM/DD | HH:MM:SS | A |
| = _____ | 00002 | CEFCHECK | CUST_DELETE@ | YYYY/MM/DD | HH:MM:SS | A |
| = _____ | 00003 | COMPOSE | CUST_INSERT@ | YYYY/MM/DD | HH:MM:SS | A |

Be sure to type the equal sign (=) in the Action fields below the Action field where you typed the EXECUTE command. When you press ENTER, the action is executed.

Execute a range of records

To execute a range of trigger records, enter EXECUTE on the command line of the Trigger File List to display the EXECUTE Trigger Record Entry panel. Type the beginning sequence number (From SeqNo) and the ending sequence number (Thru SeqNo) for the range of trigger records you want to execute, as shown in the following screen illustration:

```

PRGMEN101      EXECUTE Trigger Record Entry      YYYY/MM/DD HH:MM:SS
===>
From
  Library . . . ACCT
  SeqNo . . . . 00002
  Description .

Thru
  SeqNo . . . . 00006

Entry Options      Function Options      Process Statistics
Immediate? . . . . Y      Processed . .
Confirmation? . . N      Skipped . . .
                          Errors . . . .

000: READY
F1=HELP  F2=EXHELP F3=EXIT  F4=PROMPT F5=REFRESH  F6=EXECUTE  F7=CONFIRM  ...

```

To obtain the correct sequence numbers, see the Trigger File List. Setting the “Confirmation?” Entry Option to Y (yes) gives you the chance to confirm or skip the execution of individual records in the range you designated.

Note that the “Immediate?” Entry Option must remain set at Y (yes) to allow the execution to occur. Changing “Immediate?” to N (no) will cause the message U18: TRIGGER ACTION WITH IMMEDIATE=N IS INVALID to appear.

When you issue EXECUTE, the message U01: CONFIRM or SKIP will be displayed for the first record in the range, shown on the panel. Issue CONFIRM or SKIP to execute or bypass execution of the displayed record.

For a list of valid commands to use with the EXECUTE Trigger Record Entry panel, issue PROMPT. For the detailed descriptions of panel fields, see [“Field descriptions”](#) on page 427.

Trigger File UPDATE

The UPDATE action allows you to alter the Status and Function Options for a specific trigger record, multiple records, or a range of records.

Update a specific record

To update a specific trigger record, type the UPDATE command in the Action field for that record on the Trigger File List. The UPDATE Trigger Record panel will be displayed as shown in the following screen illustration:

```

ETRGPROF01      UPDATE Trigger Record      YYYY/MM/DD HH:MM:SS
====>
ACTION . . . . . CEFCHECK
Source
  Library . . . . . ACCT                      SeqNo . . . . . 00003
  Date request . . . . . YYYY/MM/DD      HH:MM:SS
  Status . . . . . ACTIVE
From
  Library . . . . . ACCT
  Name . . . . . CUST_BROWSE@
  Description . . . . . CUSTOMER BROWSE - SOURCE
To
  Library . . . . .
  Name . . . . .
  Description . . . . .
Entry Options      Function Options
Immediate? . . . . . Y      Create trigger? . . . . . Y
Confirmation? . . . . . N      Display detail? . . . . . Y
Addendum? . . . . . N      Display summary? . . . . . Y

F10: OK TO UPDATE
F1=HELP F2=EXHELP F3=EXIT F4=PROMPT F6=EXECUTE F9=RETRIEVE F12=CANCEL ...
    
```

Only the Status field and Function Options on this panel can be changed. To keep this record from executing, change the Status field to a value other than ACTIVE. In addition, you can set the Function Options to be used when the action on this trigger record executes.

To update changes made to this panel, issue UPDATE. The message F00: UPDATE SUCCESSFUL will be displayed at the bottom of the panel.

For a list of valid commands to use with the UPDATE Trigger Record Entry panel, issue PROMPT. For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

When you exit from the UPDATE Trigger Record panel, the Trigger File List is redisplayed. An asterisk (*) in the Action field shows the record was updated:

| ETRGLIST01 | | Trigger File List (ACCT) | | 90/08/24 02:12:06 | | |
|------------|-------|--------------------------|--------------|-------------------|----------|---|
| ====> | | | | | | |
| Action | SeqNo | Request | From Name | Date | Time | S |
| ----- | | | | | | |
| | 00001 | CEFCHECK | CUST_BROWSE@ | YYYY/MM/DD | HH:MM:SS | A |
| *UPDATE | 00002 | CEFCHECK | CUST_DELETE@ | YYYY/MM/DD | HH:MM:SS | U |
| | 00003 | COMPOSE | CUST_INSERT@ | YYYY/MM/DD | HH:MM:SS | A |
| | 00004 | BIND | CUST_MENU | YYYY/MM/DD | HH:MM:SS | A |

Notice that the S (status) field has now been changed from the trigger record's original status A (active) to U (updated). If you issue REFRESH, the Action fields will be cleared.

If you want to return to the same records for addition updating, you can reissue UPDATE. To reissue, use the space bar to clear only the asterisk (*) from the Action field, press ENTER, and the UPDATE Trigger Record Entry panel will be redisplayed.

Update multiple records

To update multiple trigger records at one time, type the UPDATE command on the command line of the Trigger File List. Then select one or more records from the list by typing the selection indicator (/) in the Action fields next to the records you want to update:

| ETRGLIST01 Trigger File List (ACCT) | | | | YYYY/MM/DD HH:MM:SS | | |
|------------------------------------------|-------|----------|--------------|---------------------|----------|---|
| ==> UPDATE | | | | | | |
| Action | SeqNo | Request | From Name | Date | Time | S |
| / | 00001 | CEFCHECK | CUST_BROWSE@ | YYYY/MM/DD | HH:MM:SS | A |
| / | 00002 | CEFCHECK | CUST_DELETE@ | YYYY/MM/DD | HH:MM:SS | A |
| / | 00003 | COMPOSE | CUST_INSERT@ | YYYY/MM/DD | HH:MM:SS | A |

When you press ENTER, the UPDATE Trigger Record panel associated with record 1 will be displayed. Make your changes by typing over the values in the Status and/or Function Options fields and issue UPDATE. When you exit, record 2 will be displayed on the UPDATE Trigger Record panel, and so forth.

When redisplaying the Trigger File List after the last record is updated, (record 3 in this example), the Action fields that were updated will show *UPDATE. In addition the S (status) field will shown U (updated).

You can also update multiple trigger records by typing UPDATE in the Action field for a single record and repeating the UPDATE command with the equal sign (=) as shown:

| ETRGLIST01 | | Trigger File List (ACCT) | | YYYY/MM/DD HH:MM:SS | | |
|-------------|-------|--------------------------|--------------|---------------------|----------|---|
| ===> | | | | | | |
| Action | SeqNo | Request | From Name | Date | Time | S |
| ----- | | | | | | |
| UPDATE_____ | 00001 | CEFCHECK | CUST_BROWSE@ | YYYY/MM/DD | HH:MM:SS | A |
| =_____ | 00002 | CEFCHECK | CUST_DELETE@ | YYYY/MM/DD | HH:MM:SS | A |
| =_____ | 00003 | COMPOSE | CUST_INSERT@ | YYYY/MM/DD | HH:MM:SS | A |

Be sure to type the equal sign (=) in the Action fields below the Action field where you typed the UPDATE command. When you press ENTER, the UPDATE Trigger Record panel (illustrated at the beginning of this section) is displayed.

Update a range of records

To update a range of trigger records, enter UPDATE on the command line of the Trigger File List to display the UPDATE Trigger Record panel (illustrated at the beginning of this section). Type the beginning sequence number (From SeqNo) and the ending sequence number (Thru SeqNo) for the range of trigger records you want to update, as shown in the following screen illustration:

```

PRGMENT101      UPDATE Trigger Record Entry      YYYY/MM/DD HH:MM:SS
===>
From
  Library . . . ACCT
  SeqNo . . . . 00002
  Description .

Thru
  SeqNo . . . . 00006

Entry Options          Function Options          Process Statistics
Immediate? . . . . Y      Processed . .
Confirmation? . . N      Skipped . . .
                          Errors . . . .

000: READY
F1=HELP  F2=EXHELP F3=EXIT  F4=PROMPT F5=REFRESH  F6=EXECUTE  F7=CONFIRM  ...

```

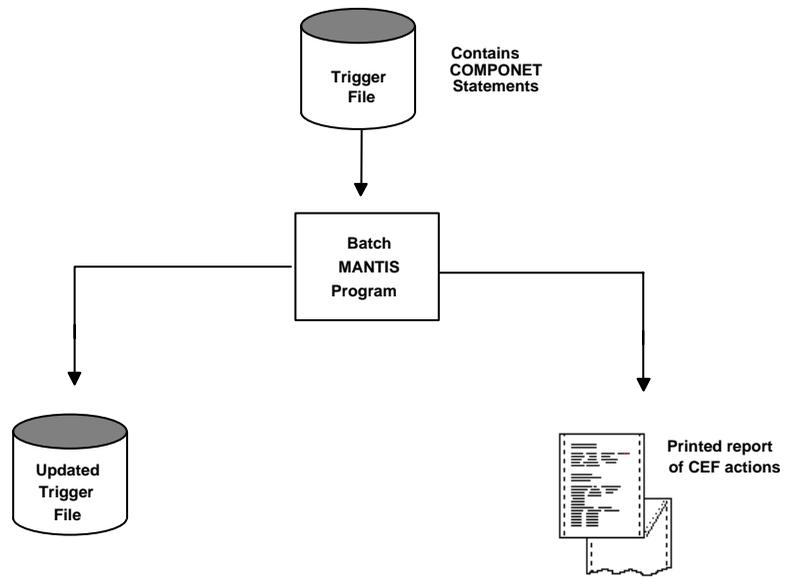
To obtain the correct sequence numbers, see the Trigger File List. Setting the “Confirmation?” Entry Option to Y (yes) gives you the chance to confirm or skip the updating of individual records in the range you designated. Note that the “Immediate?” Entry Option must remain set at Y (yes) to allow the execution to occur. Changing “Immediate?” to N (no) will cause the message U18: TRIGGER ACTION WITH IMMEDIATE=N IS INVALID to appear.

When you issue EXECUTE, the message U01: CONFIRM or SKIP will be displayed for the first record in the range, shown on the panel. If you issue SKIP, the next record in the series will be displayed. If you issue CONFIRM, the UPDATE Trigger Record panel (illustrated at the beginning of this section) will be displayed to allow you to change the Status and Function Options for the confirmed record.

For a list of valid commands to use with the UPDATE Trigger Record Entry panel, issue PROMPT. For the detailed descriptions of panel fields, see “[Field descriptions](#)” on page 427.

Trigger File batch processing

Executing trigger records in batch saves resources, especially when you have many program changes. For example, if you have many programs that need to be composed, issue the Compose action from the COMPOSE Program Entry panel and create trigger records for each program. Then submit the batch job to compose the programs offline. The following figure shows the batch process that simulates your terminal session with the Program Design Facility and executes the Compose action on trigger records:



To run the Trigger file as input to a batch job, follow these steps:

1. Set the Entry Option “Immediate?” to N (no) on the parameter entry panel for the action you want to issue.
2. Designate the program name(s), set Entry Options and Function Options, and issue the action (Compose, Decompose, CEF Check, etc.) from the parameter entry panel by pressing ENTER or (issuing EXECUTE).
3. Display the Program Design Facility menu and select the Trigger List option to view the trigger records you created.
4. For the OS or DOS/JCL needed to execute the program ADOX_ETRG_EXECUTE in a batch MANTIS job, see “[Trigger file JCL](#)” on page 519. Customize the parameters as indicated for your installation and submit the job.
5. Review the printed output from this job. Because the batch job is a simulation of an online session with the Program Design Facility, notice that the panels and reports are printed in the same order as they would appear if you issue the action online.

The Trigger file job includes a Trigger Record Profile for each record that was processed in batch. This profile is a report that summarizes the CEF action executed on the trigger record. The following screen illustration shows a sample:

```

ETRGPROF          Trigger Record Profile
Source
  Library . . . . . ACCT                      SEQUENCE NO . . . 13
  Action . . . . . COMPOSE
  Date Request . . . . . YYYY/MM/DD  HH:MM:SS
  Status . . . . . ACTIVE
From
  Library . . . . . ACCT                      TYPE . . . . . PRGM
  Name . . . . . CUST_MENU@
  Description . . . . . CUSTOMER MENU PROGRAM - SOURCE
To
  Library . . . . .
  Name . . . . .
  Description . . . . .
Entry Options      Function Options
Immediate? . . . . . Y          Components? . . . . . Y
Confirmation? . . . . . Y      Force Compose? . . . . . N
Addendum? . . . . . N        Display Detail? . . . . . Y
                               Display Summary? . . . . . Y

END OF TRIGGER FUNCTION...READ...6...EXECUTED...6

```

Each Trigger Record Profile is printed before the results of the action. For example, a CEFCHECK trigger record and a COMPOSE trigger record executed in the batch job would result in the following output sequence:

1. MANTIS banner panel
2. MANTIS Facility Selection menu
3. Trigger Record Profile (for the CEFCHECK action)
4. CEFCHECK Detail Report (optional)
5. CEFCHECK Summary Report (optional)
6. Trigger Record Profile (for the COMPOSE action)
7. COMPOSE Summary Report (optional)

Reorganize Trigger File

The Trigger file will need to be reorganized when either of the following conditions occurs:

- ◆ A total of 99,999 physical records are accumulated on your Trigger file.
- ◆ The SeqNo (sequence number) field that identifies individual trigger records has been incremented to 99,999.

When either condition occurs, the Reorganize Trigger File panel will be displayed as show in the following screen illustration:

```
REORGETRG                Reorganize Trigger File                YYYY/MM/DD HH:MM:SS

The Trigger file needs to be organized.  This panel is displayed when there are 99,999
records on the Trigger file, or the sequence number has reached 99,999.  See your
MANTIS System Administrator.

Library . . . . . ACCT

Options
  Stop after . . . . 100

Summary Statistics
  Record count. . . .

000: READY
ENTER  F3=EXIT  F12=CANCEL
```

When the Reorganize Trigger File panel is displayed, you will be unable to create more trigger records until the Trigger file is reorganized. To reorganize the file, follow the steps shown below. To exit from the panel, press EXIT or CANCEL.

You can reorganize the Trigger file online or in batch. For efficiency, it is recommended that you do the reorganization in batch.

To reorganize your Trigger file, follow these steps:

1. Select the Run A Program By Name option from the MANTIS Facility Selection menu.
2. Run program VPF:ADOX_ETRG_REORG. This is the program that is recommended to be run in batch. However, if you run this program online, the Trigger File panel will be displayed and you will be able to reorganize the file online. The Library field will be protected on the displayed panel and can be altered by the Master User only.
3. Enter a number of records in the Stop After field on the Reorganize Trigger File panel. This field tells the system when to stop reorganizing records, thereby avoiding a loop. The Stop After field also informs you that the reorganization is working.

For example, if you have 10,000 trigger records, enter 200 in the Stop After field and press ENTER. The reorganization begins, and when record 200 is reached and reorganized, 200 will appear in the Record Count field. The message TR1: STOPPED AFTER ##### RECORDS will be displayed. With 200 still displayed in the Stop After field, press ENTER again. The next 200 records will be reorganized. Continue to press ENTER to reorganize the next 200 records. When the last record is reached (which is 10,000), 10000 will be shown in the Record Count field. The message TR2: END OF TRIGGER REORG will be shown. This means the entire Trigger file is now reorganized, and you can continue to add records to it.

4. If the program VPF:ADOX_ETRG_REORG is run in batch, the reorganization continues until completed.

To exit from the displayed Reorganize Trigger File panel, press EXIT or CANCEL.

If you execute VPF:ADOX_ETRG_REORG in batch, use the following KEYBOARD input:

```
user ;password  
<PF1>  
VPF: ADOX_ETRG_REORG  
<ENTER>  
<PA2>  
<PA2>  
<PA2>  
<PA2>
```

See “[Trigger file JCL](#)” on page 519 for sample JCL to run MANTIS in batch.

A

Field descriptions

This appendix describes the individual fields that are displayed on the Program Design Facility panels. Fields are listed in alphabetic order and described with the following information:

- Description** Indicates if the field is required, optional, or display, and provides a general description of the field.
- Format** Indicates the format you must use for required and optional fields.
- Default** Shows the default value (if any) for optional fields.
- Considerations** Lists any guidelines or limitations for using the field.
- Options** Gives the acceptable values for required and optional fields.

Field descriptions quick reference table

The following table is a quick reference list of the Program Design Facility panels in alphabetic order and the fields that appear on each type of panel. The field name descriptions are presented in alphabetic order following this table.

| Panel name | Field name |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audit Trail List | Action Code Date From Library From Name Library Name SeqNo Status Terminal Time |
| Bill of Materials List | C Date Entity Name Library Relations Status Time Type |
| BIND Program Entry | Addendum? Confirmation? Display status? Errors From Description From Library From Name Immediate? Processed Skipped Thru Name |

| Panel name | Field name |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BROWSE Audit Trail | Action Code Action Data Base Information Date Description Destination Library Name SeqNo Status Terminal ID Time Type Version |
| BROWSE Program Profile | Audit Attributes Base Information CEF Check CEF Compose CEF Decompose Change Cref Date Description HPO Bind HPO Check HPO Unbind Library Name Password Sel Size SQL Bind SQL Check SQL Unbind Status Terminal Time User Ver |

| Panel name | Field name |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CEFCHECK Detail Report | Changed Components Composed Date Library Name No Status Time |
| CEFCHECK Program Entry | Addendum? Create trigger? Confirmation? Display detail? Display summary? Errors From Description From Library From Name Immediate? Processed Skipped Thru Name |
| CEFCHECK Summary Report | Changed Comments Components Composed Required? Composed Errors Force Compose Library Name Options Replace Replace Status Sequence Source Summary Statistics Trigger Record Created? |

| Panel name | Field name |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CHECK Program Entry | Addendum? Confirmation? Display Status? Errors From Description From Library From Name Immediate? Processed Skipped Thru Name |
| Component Where Used List | C Date Entity Name Library Relations Status Time Type |
| COMPOSE Confirmation | Changed by action Confirmation? Date last changed Date last composed Date last decomposed Error code Error message Library Name |

| Panel name | Field name |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| COMPOSE Program Entry | Addendum? Component statement Confirmation? Display Summary? Errors Force Compose From Description From Library From Name Immediate Processed Skipped Thru Name |
| COMPOSE Summary Report | Components From Library Force Compose Name Option Options Replace Replace status Replace stmts Sequence Source Summary Statistics Errors |

| Panel name | Field name |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| COPY Program Entry | Addendum? Confirmation? Errors From Description From Library From Name From Password Immediate? Processed Replaced Skipped Thru Name To Description To Library To Name |
| CREF Program Entry | Addendum? Confirmation? Display Summary? Errors From Description From Library From Name Immediate? Processed Skipped Thru Name |
| CREF Summary Report | Library Name Source Statement Counts |

| Panel name | Field name |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DECOMPOSE Detail Report | Changed Components Composed D Date Library Name No Stat Time |
| DECOMPOSE Program Entry | Addendum? Confirmation? Decompose all Display detail? Display summary? Errors From Description From Library From Name Immediate? Processed Skipped Thru Name |
| DECOMPOSE Summary Report | Changed Comments Components Compose Required? Decompose Errors Force Compose Library Name Options Replace Sequence Source Summary Statistics |

| Panel name | Field name |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DELETE Trigger Record Entry | Confirmation? Errors From Description From Library Immediate? Processed Skipped |
| EDIT Program Entry | Confirmation? Errors From Description From Library From Name Immediate? Indent on Nulls on Processed Scroll (P H C) Skipped Thru Name Uppercase |
| Error Condition Panel | Action Code Context Description |
| EXECUTE Trigger Record | Confirmation? Errors From Description From Library Immediate? Processed Skipped |
| HPO Status Report | Action Code Library Message Name |

| Panel name | Field name |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Profile Program Entry | Confirmation? Errors From Description From Library From Name Immediate? Processed Skipped Thru Name |
| Program Design Facility Menu | Bind Options Component Engineering Program Selection Utilities |
| Program Directory List | Date Description Name Status Time Ver |
| Prompt For Commands | Action Description Select Status |
| PURGE Program Entry | Confirmation? Errors From Description From Library From Name Immediate? Processed Skipped Thru Name |

| Panel name | Field name |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RENAME Program Entry | Confirmation? Errors From Description From Library From Name Immediate? Processed Replace if found Skipped To Description To Name |
| Reorganize Trigger File | Library Options Record count Stop after Summary Statistics |
| SQLCHECK Program Entry | Addendum? Confirmation? Display status? Errors From Description From Library From Name Immediate? Processed Skipped Thru Name |
| SQLBIND Program Entry | Addendum? Confirmation? Errors From Description From Library From Name Immediate? Processed Skipped Thru Name |

| Panel name | Field name |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SQLUNBIND Program Entry | Addendum? Confirmation? Display status? Errors From Description From Library From Name Immediate? Processed Skipped Thru Name |
| Trigger File List | Date From Library From Name Request SeqNo Status Time To Name Type |
| UNBIND Program Entry | Addendum? Confirmation? Display status? Errors From Description From Library From Name Immediate? Processed Skipped Thru Name |

| Panel name | Field name |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPDATE Program Profile | Audit Attributes Base Information CEF Check CEF Compose CEF Decompose Changed Cref Date Description Format HPO Bind HPO Check HPO Unbind Library Name Password Sel Size Status SQL Bind SQL Check SQL Unbind Status Terminal Time User Ver |

| Panel name | Field name |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPDATE Trigger Record | Addendum? Confirmation? Create trigger? Date request? Display detail? Display summary? From Description From Library From Name Immediate? Library SeqNo Source Status To Description To Library To Name |
| UPDATE Trigger Record Entry | Confirmation? Errors From Description From Library Immediate? Processed Skipped Thru SeqNo |

ACTION

Description *Optional.* The Action field provides the space where you can enter commands for a specific program name on the Program Directory List, or enter commands for a specific record on the Bill of Materials List, Audit Trail List, and Trigger File List.

Format 1–9 alphabetic characters that represent a valid command for the list.

Options The Action field can only contain a command, the selection character (/), or the repeat character (=).

Considerations

- ◆ Only one command, selection character (/), or repeat character (=) is permitted in a specific Action field. However, multiple program names (or records) that display on a single page of the list can be selected at one time.
- ◆ Action is also a display field shown on the HPO Status Report to indicate the Check, Bind, or Unbind action issued.
- ◆ For more information about list panels and use of the Action field, see [“Using the Program Design Facility”](#) on page 31.

ACTION CODE

Description *Display.* The Action Code field appears on the Audit Trail List and Browse Audit Trail Records panel to show the name of the action that was issued on a program.

Considerations

- ◆ Action Code is a display field that cannot be changed.
- ◆ When you display the Audit Trail List or browse audit trail information for a specific program on the BROWSE Audit Trail panel, the Action Code field shows the name of the action you issued for a program, such as COMPOSE, DECOMPOSE, COPY, CEFCHECK, and so forth.

ACTION DATA

Description *Display.* Action Data is a group heading on the BROWSE Audit Trail Records panel that highlights information about the action (action code, date, time, and number) that was written as a trigger record.

Considerations

- ◆ Action Data is a display field that cannot be changed.
- ◆ For information about the fields that appear under the Action Data group heading, see the field descriptions in this appendix for Action Code, Date, Time, and Version.

ADDENDUM

Description *Optional.* The Addendum field is an Entry Option on most parameter entry panels that lets you issue an action on a program only if it changed since the last time you issued the same action on it.

Default N (no).

Format One alphabetic character.

Options You can enter Y (yes) for addendum processing or N (no) to issue the action on all designated programs.

Considerations

- ◆ Addendum processing is invoked when you (1) set the Sel (selection) field to Y (yes) on the UPDATE Program Profile panel for a specific action displayed, and then (2) set Addendum to Y (yes) on the parameter entry panel for the specific action.
- ◆ Addendum processing is not available for the Edit, Profile, Purge, Copy, and Rename actions.
- ◆ For more information about addendum processing, see the detailed field description in this appendix for SEL (selection).
- ◆ The Addendum Entry Option is reset to its default value when you exit from a parameter entry panel. Defaults for Entry Options (and Function Options) on parameter entry panels can be set permanently by your Master User.

AUDIT ATTRIBUTES

Description *Display.* Audit Attributes is a group heading on the UPDATE Program Profile panel and the BROWSE Program Profile panel that shows the extended profile information for the displayed program.

Considerations

- ◆ Audit Attributes is a display field that cannot be changed.
- ◆ For information about the individual fields that appear under the Audit Attributes group heading, see the field descriptions in this appendix for SEL, DATE, TIME, VER, USER, and TERMINAL.
- ◆ Audit attribute information can be changed on the UPDATE Program Profile panel and viewed on the BROWSE Program Profile panel.

BASE INFORMATION

Description *Display.* Base Information is a group heading that appears on the UPDATE Program Profile panel, the BROWSE Audit Trail Records panel, and the BROWSE Program Profile panel that highlights program identification fields.

Considerations

- ◆ The Base Information group heading is a display field that cannot be changed.
- ◆ For information about the fields under Base Information, see the individual field descriptions in this appendix for DESCRIPTION, LIBRARY, NAME, SEQNO, STATUS, and TERMINAL.

BIND OPTIONS

Description *Display.* Bind Options is a group heading that appears on the Program Design Facility menu to identify the options available for the checking, binding, and unbinding of HPO (High-Performance Option) and SQL (Structured Query Language) programs.

Considerations

- ◆ Bind Options is a display field that cannot be changed.
- ◆ Bind Options is the group heading on the Program Design Facility menu that includes HPO Check, HPO Bind, HPO Unbind, SQL Check, SQL Bind, and SQL Unbind.
- ◆ For more information about checking, binding, and unbinding, see [“Bind Options”](#) on page 365.

C

Description *Display.* The C (Changed) field is a 1-character heading that appears on the Bill of Materials List to show the components that changed since the source program changed.

Considerations

- ◆ C is a display field that cannot be changed.
- ◆ When a component is displayed at the top of the Bill of Materials List, the C field shows either Y (yes) to indicate that the source program(s) that use the component need to be composed, or a space to indicate that the source program(s) do not need to be composed.
- ◆ When a source program is displayed at the top of the Bill of Materials List, the C field shows either Y (yes) to indicate that one or more of the source program’s components changed since the last time the program was composed (this means the Compose is required), or the C field shows a space to indicate that no changes were made to the components in the source program (this means the Compose action is not required).

CEF CHECK

Description *Display.* The CEF Check heading appears on the UPDATE Program Profile panel and BROWSE Program Profile Records panel to show the Audit Attributes of the CEF Check action for the displayed program.

Considerations

- ◆ CEF Check is a display field that cannot be altered.
- ◆ CEF Check shows the Audit Attribute fields of Sel (selection), Date, Time, Ver (version), User, and Terminal, as they apply to the CEF Check action only. For more information about these Audit Attributes, see the individual field descriptions in this appendix.

CEF COMPOSE

Description *Display.* The CEF Compose heading appears on the UPDATE Program Profile panel and BROWSE Program Profile Records panel to show the Audit Attributes of the Compose action for the displayed program.

Considerations

- ◆ CEF Compose is a display field that cannot be altered.
- ◆ CEF Compose shows the Audit Attribute fields of Sel (selection), Date, Time, Ver (version), User, and Terminal, as they apply to the Compose action only. For more information about these Audit Attributes, see the individual field descriptions in this appendix.

CEF DECOMPOSE

Description *Display.* The CEF Decompose heading appears on the UPDATE Program Profile panel and BROWSE Program Profile Records panel to show the Audit Attributes of the Decompose action for the displayed program.

Considerations

- ◆ CEF Decompose is a display field that cannot be altered.
- ◆ CEF Decompose shows the Audit Attribute fields of Sel (selection), Date, Time, Ver (version), User, and Terminal, as they apply to the Decompose action only. For more information about these Audit Attributes, see the individual field descriptions in this appendix.

CHANGED

Description *Display.* The Changed field appears on reports to indicate the most recent date and time when a program was changed by an action. Changed also appears as a heading on the UPDATE Program Profile panel and BROWSE Program Profile panel to show the Audit Attributes for the displayed program.

Format Date is displayed as YYYY//MM/DD and Time as HH:MM:SS.

Considerations

- ◆ Changed is a display field that cannot be altered.
- ◆ On the Update Program Profile panel, Changed shows the program profile information in the Audit Attribute fields of Date, Time, Ver (version), User, and Terminal. For more information about these Audit Attributes, see the individual field descriptions in this appendix.

CHANGED BY ACTION

Description *Display.* The Changed By Action field appears on the COMPOSE Confirmation panel to indicate two conditions for the source program displayed: (1) the program was composed, or (2) the program was composed, bound, and will be unbound if the Compose is issued.

Considerations

- ◆ Changed By Action is a display field that cannot be altered.
- ◆ The Changed By Action field shows the value COMPOSE to indicate that the program was composed, or the field shows the value BIND to indicate that the program was composed and then bound (by HPO Bind or SQL Bind). The Changed By Action field is a warning that if you issue Compose on a bound program, the Compose will unbind it.

CODE

Description *Display.* The Code field shows the 3-character MANTIS message code on the Error Condition panel and HPO Status Report.

Considerations

- ◆ Code is a display field that cannot be changed.
- ◆ For explanations and actions for the 3-character code received from the Program Design Facility, refer to *MANTIS Messages and Codes, OS/390, VSE/ESA*, P39-5004.

COMMENTS

Description *Display.* The Comments field shows the specified and default settings of the COMMENTS parameter on the CEF Check, Compose, and Decompose Summary Reports.

Considerations

- ◆ Comments is a display field that cannot be changed.
- ◆ The COMMENTS parameter is an optional parameter of the CSIOPTNS statement that specifies whether a composed program will contain commented COMPONENT statements and CEND statements (COMMENTS=YES), or whether COMPONENT statements and CEND statements will not be included in the composed program (COMMENTS=NO).
- ◆ For more information about the CSIOPTNS statement and the COMMENTS parameter, refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002.

COMPONENT ENGINEERING

Description *Display.* Component Engineering is a group heading on the Program Design Facility menu that identifies the individual Component Engineering Facility (CEF) options.

Considerations

- ◆ The Component Engineering group heading is a display field that cannot be changed.
- ◆ Component Engineering groups the options on the Program Design Facility menu that you can select for CEF Check, CEF Compose, CEF Decompose, CREF Programs, and Bill of Materials.
- ◆ For information about the Component Engineering Facility (CEF), see [“Component Engineering Facility \(CEF\)”](#) on page 297.

COMPONENT STMT

Description *Optional.* Component Stmt is a Function Option on the COMPOSE Program Entry panel that determines whether COMPONENT statements will be commented (|*COMPONENT) in a composed program, and will also provide the corresponding, commented end statements (|*CEND) that mark the end of components.

Default D

Format One alphabetic character.

Options D (default) Uses the value coded in the COMMENTS parameter of the CSIOPTNS statement in your source program.

Y (yes) Comments the COMPONENT statements and generates the CEND statements to mark the end of components.

N (no) Omits commented COMPONENT statements and CEND.

Considerations

- ◆ The Function Option Component Stmt on the COMPOSE Program Entry panel accepts or overrides the COMMENTS parameter of the CSIOPTNS statement in a source program.

For example, if Component Stmt is set to D (default), the value of the COMMENTS parameter is used during the execution of the Compose action. If Component Stmt is set to Y (yes) or N (no), the setting of the COMMENTS parameter is overridden. Valid combinations for the Component Stmt Function Option and the COMMENTS parameter are:

| Component statement | CSIOPTNS parameter | Result in the composed program |
|---------------------|-------------------------------|-------------------------------------|
| D | COMMENTS=YES | Commented COMPONENT statements |
| D | COMMENTS=NO | COMPONENT statements not commented. |
| D | (no CSIOPTNS statement coded) | Commented COMPONENT statements |
| Y | COMMENTS=NO | Commented COMPONENT statements |
| N | COMMENTS=YES | COMPONENT statements not commented. |

- ◆ The Component Stmt Function Option is reset to its default value when you exit from the COMPOSE Program Entry panel. Defaults for Function Options (and Entry Options) on parameter entry panels can be set permanently by your Master User.

COMPONENTS

Description *Display.* The Components field is a heading that shows the number of components in a source program checked (CEFCHECK Detail and Summary Report), the number of components in an executable program that were decomposed (DECOMPOSE Detail and Summary Reports), and the number of COMPONENT statements contained in the displayed source program (COMPOSE Summary Report).

Consideration The Components heading is a display field that cannot be changed.

COMPOSE REQUIRED?

Description *Display.* The Compose Required field appears on the CEFCHECK and DECOMPOSE Summary Reports to indicate whether the displayed source program needs to be composed.

Considerations

- ◆ Compose Required is a display field that cannot be changed.
- ◆ If the value of the Compose Required field is YES on the CEFCHECK Summary Report or the DECOMPOSE Summary Report, the source program needs to be composed because one or more of its components changed since the last time that program was composed. The value NO shown in the Compose Required field indicates that no component changes were made and the source program does not need to be composed.

COMPOSED

Description *Display.* The Composed field appears on detail and summary reports to show when the date and time the displayed source program was last composed.

Format Date is displayed as *YYYY/MM/DD* and Time as *HH:MM:SS*.

Considerations

- ◆ Composed is a display field that cannot be changed.
- ◆ When you review the CEFCHECK or DECOMPOSE Detail or Summary Reports, the Composed field lets you know when the source program displayed on these reports was last composed. If the Compose Required field indicates YES on a summary report, the source program needs to be composed.

CONFIRMATION?

Description (1) *Required.* Confirmation is an Entry Option on parameter entry panels that determines whether a confirmation message will be displayed or bypassed for each program to be processed. (2) *Required.* Confirmation is also a field on the COMPOSE Confirmation panel that indicates if a Compose action will be forced or bypassed for the displayed source program.

Default Y (yes) for the PURGE Program Entry panel only; N (no) for all other parameter entry panels and the COMPOSE Confirmation panel.

Format One alphabetic character.

Options Y (yes) or N (no)

Considerations

- ◆ On parameter entry panels:

Entering Y (yes) for Confirmation displays the message U01: CONFIRM OR SKIP to let you issue CONFIRM (to issue the action) or to let you issue SKIP (to bypass the action) for the individual program displayed on the parameter entry panel.

Entering N (no) for Confirmation indicates that you do not want to confirm individual programs, but want the action to execute on all programs at once.

The Confirmation Entry Option is reset to its default value when you exit from a parameter entry panel. Defaults for Entry Options (and Function Options) on parameter entry panels can be set permanently by your Master User.

- ◆ On the COMPOSE Confirmation panel:

If you enter a character other than Y (yes) or N (no) and press ENTER, the COMPOSE Confirmation panel is redisplayed and the Compose action does not occur. This gives you the chance to correct the field to Y or N. However, if you have entered an invalid character and issue EXIT or CANCEL, the Compose will not occur and the previous panel will be returned.

Entering Y (yes) on the COMPOSE Confirmation panel overrides the displayed warning, composes the source program, and overlays the changes you made to the executable program with the new composed program. Entering N (no) bypasses the Compose action and redisplayes the COMPOSE Program Entry panel.

CONTEXT

Description *Display.* The Context field appears on the Error Condition panel to indicate the current library and program name (or library and sequence number for trigger records) in error.

Considerations

- ◆ The Context field is a display field that cannot be changed.
- ◆ If the error occurred on a program, Context will show the library and program name. If the error occurred on a trigger record, Context will show the library and sequence number of the trigger record (SeqNo field on the Trigger File List).

CREATE TRIGGER

Description *Optional.* Create Trigger is a Function Option that appears on the CEFCHECK Program Entry panel to determine whether a COMPOSE trigger record will be written if a source program that was checked (by CEF Check) needs to be composed.

Default Y (yes).

Options Entering Y (yes) creates a trigger record of the CEFCHECK action for only those programs that need to be composed, or entering N (no) bypasses creating a CEFCHECK trigger record.

Considerations

- ◆ A source program needs to be composed when you make changes to the source program or to its component(s). The source program must then be composed to assemble the latest components from your library into the most current version of an executable (composed) program.
- ◆ To create COMPOSE records on the Trigger file for the source programs that the CEF Check action determines should be composed, enter Y (yes) for the Immediate Entry Option and enter Y (yes) for the Create Trigger Function Option. Issue the CEFCHECK action on a source program. If CEF Check determines that a Compose action should be issued, a COMPOSE trigger record will be written for each source program that needs to be composed.
- ◆ To create CEFCHECK records on the Trigger file for source programs, enter N (no) for the Immediate Entry Option and enter N (no) for the Create Trigger Function Option. Issue the CEF Check action on the source program. CEF Check will write a CEFCHECK trigger record for each designated source program. You will then need to execute the records on the Trigger File List (either online or in batch), and based on the results of the CEFCHECK Detail and Summary Reports, issue the Compose action on the source programs that need to be composed.
- ◆ The Create Trigger Function Option is reset to its default value when you exit from the CEFCHECK Program Entry panel. Defaults for Function Options (and Entry Options) on parameter entry panels can be set permanently by your Master User.
- ◆ When an error on a component is encountered, the CEFCHECK record will remain on the Trigger file, but the COMPOSE record will not be created.

CREF

Description *Display.* The Cref heading appears on the UPDATE Program Profile panel to show the Audit Attributes of the Cross-Reference (CREF) action for the displayed program.

Considerations

- ◆ Cref is a display field that cannot be changed.
- ◆ Cref shows the Audit Attribute fields of Sel (selection), Date, Time, Ver (version), User, and Terminal, as they apply to the Cross-Reference (CREF) action only. For more information about these Audit Attributes, see the individual field descriptions in this appendix.

D

Description *Display.* Decompose. The heading D appears on the DECOMPOSE Detail Report to indicate whether a component was nominated and updated or not changed.

Considerations

- ◆ D is a display field that cannot be changed.
- ◆ When the heading D shows the value Y (yes) on the DECOMPOSE Detail Report for an individual component, the component was decomposed. When the heading D shows a space, the component was not changed.

DATE

Description *Display.* The Date field appears on the Program Directory List, Audit Trail List, and the UPDATE and BROWSE Program Profile panels to show the last date when a program was changed by an action. On the Trigger File List, date shows when a trigger record was created.

Considerations

- ◆ Date is a display field that cannot be changed.
- ◆ When you issue an action that replaces a program in your library (such as Compose, Decompose, or changing code and exiting from a session with the Full-Screen Editor) the date of the change is tracked on the program profile and displayed on the Program Directory List, Audit Trail List, BROWSE Program Profile Records panel, UPDATE Program Profile panel, and Trigger File List.
- ◆ The Date field extends beyond the width of most panels. To view Date on the Bill of Materials List or Component Where Used List, enter the command RIGHT on the command line to scroll to the Date field.

DATE LAST CHANGED

Description *Display.* The Date Last Changed field appears on the COMPOSE Confirmation panel to represent the last date and time when an executable (composed) program was changed.

Format Date is displayed as YYYY/MM/DD and Time as HH:MM:SS.

Considerations

- ◆ Date Last Changed is a display field that cannot be changed.
- ◆ When you change an executable program and then attempt to compose the source program, the COMPOSE Confirmation panel is displayed and the Date Last Changed field shows the date and time when the executable (composed) program was altered.
- ◆ A COMPOSE Confirmation panel will not be displayed if you force a compose by setting Force Compose to Y (yes) on the COMPOSE Program Entry panel, or you set the FORCE parameter of the CSIOPTNS statement to FORCE=YES.

DATE LAST COMPOSED

Description *Display.* The Date Last Composed field appears on the COMPOSE Confirmation panel to represent the last date and time when a source program was composed.

Format Date is displayed as *YYYY/MM/DD* and Time as *HH:MM:SS*.

Considerations

- ◆ Date Last Composed is a display field that cannot be changed.
- ◆ When you change an executable program and then attempt to compose the source program, the COMPOSE Confirmation panel is displayed.
- ◆ A COMPOSE Confirmation panel will not be displayed if you force a compose by setting Force Compose to Y (yes) on the COMPOSE Program Entry panel, or you set the FORCE parameter of the CSIOPTNS statement to FORCE=YES.

DATE LAST DECOMPOSED

Description *Display.* The Date Last Decomposed field appears on the COMPOSE Confirmation panel to represent the last date and time an executable program was decomposed.

Format Date is displayed as *YYYY/MM/DD* and Time as *HH:MM:SS*.

Considerations

- ◆ Date Last Decomposed is a display field that cannot be changed.
- ◆ When you change an executable program and then attempt to compose the source program, the COMPOSE Confirmation panel is displayed.
- ◆ A COMPOSE Confirmation panel will not be displayed if you force a compose by setting Force Compose Y (yes) on the COMPOSE Program Entry panel, or you set the FORCE parameter of the CSIOPTNS statement to FORCE=YES.

DATE REQUEST

- Description** *Display.* The Date Request field appears on the UPDATE Trigger Record panel to represent the date and time when a specific trigger record was created.
- Format** Date is displayed as *YYYY/MM/DD* and Time as *HH:MM:SS*.
- Consideration** Date Request is a display field that cannot be changed.

DECOMPOSE

- Description** *Display.* The Decompose field is a summary statistic that appears on the Decompose Summary Report to indicate the number of components that were decomposed.
- Consideration** Decompose is a display field that cannot be changed.

DECOMPOSE ALL

- Description** *Optional.* Decompose All is a Function Option that appears on the DECOMPOSE Program Entry panel to let you determine whether all components (changed or unchanged) in an executable program will be updated by the Decompose action.
- Default** N (no).
- Options** Entering Y (yes) decomposes all components, or entering N (no) lets you manually nominate individual components that changed (or any new components you created) to be updated in your library.

Considerations

- ◆ To conserve system resources and save processing time, use the Decompose all Function Option with discretion, especially on large programs.
- ◆ If you set Decompose all to N (no), you must nominate the components that you changed. To nominate a component, change the asterisk (*) in the |*COMPONENT statement to an at sign (@), for example, |@COMPONENT.
- ◆ The Decompose all Function Option is reset to its default value when you exit from the DECOMPOSE Program Entry panel. Defaults for Function Options (and Entry Options) on parameter entry panels can be set permanently by your Master User.

DESCRIPTION

Description (1) *Optional.* The Description field appears on the EDIT Program Entry panel and UPDATE Program Profile panel to let you enter or change a text description for a program in your library.

(2) *Display.* Description also appears on several panels to show the current description for viewing only.

Format 1–46 alphanumeric characters.

Considerations

- ◆ You can enter a Description for a new program or update the description for an existing program on the UPDATE Program Profile panel. When you supply a program description, do not enter double quotes (") or a slash character (/) as part of the description. Double quotes and the slash are reserved for other uses in the Program Design Facility. You can also supply a description for a new program by entering the EDIT command, for example:

```
EDIT PROG."library:program-name/password/description"
```

- ◆ The Description field is displayed for viewing on the Program Directory List and the BROWSE Audit Records panel. Description heading also appears on the Prompt for each of the actions.
- ◆ Two fields on other panels relate to the Description field. The From Description field is displayed for viewing only on the parameter entry panels. In addition, the To Description field appears on the COPY Program Entry panel and the RENAME Program Entry panel for changing the description of a copied or renamed program in your user library.
- ◆ Description is also shown on the Error Condition panel to indicate the MANTIS message text associated with the current error condition.

DESTINATION

Description *Display.* The Destination group heading appears on the BROWSE Audit Trail Records panel to identify target program information that resulted from an action.

Considerations

- ◆ Destination is a display field that cannot be changed.
- ◆ The Destination group heading highlights the current identification and location of the target program after you issued an action. These fields include library, type, program name, description, and status.
- ◆ For information about the fields that appear under the Destination group heading, see the individual field descriptions in this appendix for DESCRIPTION, LIBRARY, NAME, STATUS, and TYPE.

DISPLAY DETAIL?

- Description** *Optional.* The Display Detail field is a Function Option on the CEFCHECK and DECOMPOSE Program Entry panels that lets you choose whether a detailed report is displayed or bypassed at the end of these actions.
- Default** Y (yes).
- Options** You can enter Y (yes) to display the detailed report or N (no) to bypass displaying the detail report.

Considerations

- ◆ To issue the CEF Check or Decompose action immediately, set the Immediate Entry Option to Y (yes) and the detail report will be displayed at the end of the CEF Check or Decompose action.
- ◆ If you execute trigger records in a batch job, detail reports will be printed.
- ◆ For the CEF Check action, the CEFCHECK Detail Report displays a list of the components in the source program you designated, and highlights components that have changed since the last time the Compose action was issued on the source program.
- ◆ For the Decompose action, the DECOMPOSE Detail Report displays a list that shows which components were changed and updated by the Decompose action.
- ◆ Detailed reports are displayed (or printed) before the summary reports for the CEF Check and Decompose actions. For information about summary reports, see the field description in this appendix for DISPLAY SUMMARY.
- ◆ The Display detail Function Option is reset to its default value when you exit from the CEFCHECK or DECOMPOSE Program Entry panels. Defaults for Function Options (and Entry Options) on parameter entry panels can be set permanently by your Master User.

DISPLAY STATUS?

Description *Optional.* The Display Status field is a Function Option on the HPO CHECK, BIND, and UNBIND Program Entry panels that lets you choose whether a status report will be displayed or bypassed at the end of these actions.

Default Y (yes).

Options Entering Y (yes) displays the HPO Status Report or entering N (no) bypasses displaying the report.

Considerations

- ◆ To display the HPO Status Report, set the Immediate Entry Option to Y (yes) on the CHECK, BIND, or UNBIND Program Entry panel and issue the action.
- ◆ If you execute the trigger records in a batch job, status reports will be printed automatically.
- ◆ The HPO Status Report displays the action you issued, the library, program name, status code, and status message returned from the action.
- ◆ The Display Status Function Option is reset to its default value (Y) when you exit from the CHECK, BIND, or UNBIND Program Entry panels. Defaults for Function Options (and Entry Options) on parameter entry panels can be set permanently by your Master User.

DISPLAY SUMMARY?

- Description** *Optional.* The Display Summary field is a Function Option on the CEF CHECK, COMPOSE, DECOMPOSE, and Cross-Reference (CREF) entry panels that lets you choose whether a summary report is displayed or bypassed at the end of these actions.
- Default** Y (yes).
- Options** You can enter Y (yes) to display the summary report or N (no) to bypass displaying this report.

Considerations

- ◆ To display the CEF Check, Compose, Decompose, or CREF Summary Report immediately, set the Immediate Entry Option to Y (yes) on the associated parameter entry panel and issue the action.
- ◆ If you execute the trigger records in a batch job, the detail reports will be printed.
- ◆ The summary reports for the CEF Check, Compose, Decompose, and CREF actions display a list of program information, option settings, and processing statistics.
- ◆ Summary reports, if requested, are displayed (or printed) after detail reports.
- ◆ The Display Summary Function Option is reset to its default value when you exit from the CEF Check, Compose, Decompose, and CREF Program Entry panels. Defaults for Function Options (and Entry Options) on parameter entry panels can be set permanently by your Master User.

ENTITY NAME

Description *Display.* The Entity Name field appears on the Bill of Materials List to show the names of displayed programs and components.

Considerations

- ◆ If a Cross-Reference (CREF action) has not been issued for a specific program, that program will not appear in the Entity Name field on the Bill of Materials List.
- ◆ To reposition the Bill of Materials List to a specific location, type a value (the name you want to locate or the partial name) over the first name in the Entity Name field at the top of the list. You can enter up to 32 alphanumeric characters. When you press ENTER, the Bill of Materials List will redisplay beginning with the name that corresponds to your value, or the next greater name, if the value you entered cannot be located.

ENTRY OPTIONS

Description *Display.* The Entry Options group heading appears on parameter entry panels to identify the Addendum, Confirmation, and Immediate processing options.

Considerations

- ◆ Entry Options is a display field that cannot be changed.
- ◆ Addendum, Confirmation, and Immediate are reset to their default values when you exit from a parameter entry panel. Defaults for these Entry Options can be set permanently by your Master User.

ERROR CODE

Description *Display.* The Error Code field appears on the COMPOSE Confirmation panel (or Error Code Condition panel) to display the 3-character error code associated with the attempted compose.

Considerations

- ◆ Error Code is a display field that cannot be changed.
- ◆ When you change an executable program and then attempt to compose its source version, the COMPOSE Confirmation panel is displayed and CSC appears in the Error Code field. CSC indicates that the executable program changed since the last time its source version was composed.
- ◆ If you compose a source program that contains a COMPONENT statement for a nonexistent component, the Error Code Condition panel is displayed and NFC appears in the Error Code field. NFC indicates that no components were found.
- ◆ For a list of codes, messages, and explanations, refer to *MANTIS Messages and Codes, OS/390, VSE/ESA*, P39-5004.

ERROR MESSAGE

Description *Display.* The Error Message field appears on the COMPOSE Confirmation panel (or Error Code Condition panel) to display the message text associated with the attempted compose.

Considerations

- ◆ Error Message is a display field that cannot be changed.
- ◆ When you change an executable program and then attempt to compose its source version, the COMPOSE Confirmation panel is displayed and the code CSC appears in the Error Code field with its related message text appearing in the Error Message field. (CSC indicates that the executable program changed since the last time its source version was composed.)
- ◆ If you compose a source program which contains a COMPONENT statement for a nonexistent component, the Error Code Condition panel is displayed and the code NFC appears in the Error Code field with its related message text appearing in the Error Message field. (NFC indicates that no components were found.)
- ◆ For a list of codes, messages, and explanations, refer to *MANTIS Messages and Codes, OS/390, VSE/ESA*, P39-5004.

ERRORS

Description *Display.* The Errors field is a process statistic that appears on parameter entry panels and the CEFCHECK and DECOMPOSE Summary Reports to indicate the number of error conditions encountered and when action was issued.

Considerations

- ◆ Errors is a display field that cannot be changed.
- ◆ The Errors field is incremented by 1 each time an error condition is encountered when an action is issued.
- ◆ The types of errors that could be encountered during processing include:
 - Composing a range of programs or generic pattern and a program contains an invalid component statement or no components.
 - Copying a program from another user's library to your library with a duplicate name, and the Replace If Found Function Option is set to N (no).
 - Issuing an action on a program that is not found in your library (The message F02: NOT FOUND is displayed).

FMT

- Description** *Display.* The FMT field appears on the Program Directory List to show if a program is composed (position 1), HPO-bound (position 2), or SQL-bound (position 3).
- Options**
- Position 1: C- program created via Compose action
b - not composed
- Position 2: X - HPO bound with old release of MANTIS
I - program is illogical
B - program is HPO bound with this release of MANTIS
b - none of the above
- Position 3: S - program is static SQL
E - program is extended dynamic SQL
D - program is dynamic SQL
b - program does not have SQL statements

Consideration FMT is a display field that cannot be changed.

FORCE COMPOSE

- Description** *Optional.* Force Compose is a Function Option that appears on the COMPOSE Program Entry panel to let you choose whether a COMPOSE Confirmation Panel will be displayed when an executable program is changed and the Compose action is issued on its source version.
- Default** D.
- Options**
- D (default) uses the value coded in the FORCE parameter of the CSIOPTNS statement in your source program.
- Y (yes) overrides the CSIOPTNS statement and forces the compose to occur.
- N (no) overrides the CSIOPTNS statement and displays the COMPOSE Confirmation panel.

Considerations

- ◆ On the COMPOSE Program Entry panel:

The Function Option Force Compose on the COMPOSE Program Entry panel can accept or override the FORCE parameter of the CSIOPTNS statement in a source program.

For example, if Force Compose is set to D (default), the value of the FORCE parameter is used during the execution of the Compose action. If Force Compose is set to Y (yes) or N (no), the setting of the FORCE parameter is overridden. Valid combinations for the Force Compose Function Option and the FORCE parameter are:

| Force compose | CSIOPTNS parameter | COMPOSE confirmation panel displayed? |
|---------------|-------------------------------|-----------------------------------------------|
| D | FORCE=YES | panel not displayed; Compose action issued |
| D | FORCE=NO | panel displayed |
| D | (no CSIOPTNS statement coded) | panel displayed |
| Y | FORCE=NO | panel not displayed; Compose action is issued |
| N | FORCE=YES | panel displayed |

The COMPOSE Confirmation Panel warns that the changes made directly to an executable program will be replaced if the Compose action is issued on the source version. If the date of the last change to the executable program is greater than the last date the source program was composed, the COMPOSE Confirmation panel is displayed based on the criteria noted in the previous table.

The Force Compose Function Option is reset to its default value when you exit from the COMPOSE Program Entry panel. Defaults for Function Options (and Entry Options) on parameter entry panels can be set permanently by your Master User.

- ◆ On the CEF Check, Compose, and Decompose Summary Reports:

Force Compose is a display field that cannot be changed.

The Force Compose field shows either the value entered in the FORCE parameter of the CSIOPTNS statement (YES or NO), or the overridden value from the COMPOSE Program Entry panel (Y or N).

FROM DESCRIPTION

Description *Display.* The From Description field appears on the parameter entry panels to show the description for the designated program.

Considerations

- ◆ From Description is a display field that cannot be changed.
- ◆ To supply a description for a new MANTIS program (or to alter an existing description), enter freeform text in the Description field of the UPDATE Program Profile panel. For more information about a program's description, see DESCRIPTION in this appendix.

FROM LIBRARY

Description (1) *Required.* The From Library field appears on parameter entry panels to display your sign-on library (or to let you change your displayed library to another user's library for certain actions). The From Library field is the library of the single program, range of programs, or generic pattern of programs designated to be processed by an action. (2) *Display.* From Library also appears for viewing only on the Audit Trail List and Trigger File List.

Default For parameter entry panels, your sign-on library.

Format 1–32 character text name to represent a valid library name.

Options Your sign-on library (or another user's library for the EDIT and COPY actions).

Considerations

- ◆ The From Library field can only be changed on the EDIT Program Entry panel and the COPY Program Entry panel. You can edit a program from another user's library or copy a program from another user's library (if you supply the correct program password), but you must save or replace the program in your user library or copy it to your user library.
- ◆ If the action on the Audit Trail List is TRANSFERI (meaning the program was transferred in) the name in the From Library field will indicate the transfer bin.
- ◆ The From Library field extends beyond the width of most panels. To view From Library on the Audit Trail List or Trigger File List, enter the RIGHT command on the command line.

FROM NAME

Description *Required.* The From Name field appears on parameter entry panels to indicate the name of a single program, starting name in a range of programs, or generic pattern designated to be processed by an action.

Format 1–32 character text name.

Options You can enter a single program name, the starting name in a range of program names, or a generic pattern.

Considerations

- ◆ To designate a single program, type the program name in the From Name field and leave the Thru Name field blank. Press ENTER or EXECUTE.
- ◆ To designate a range of program names, type the starting name of the range in the From Name field and type the ending name of the range in the Thru Name field. Press ENTER or issue EXECUTE.
- ◆ To designate a generic pattern, type a generic pattern in the From Name field and leave the Thru Name field blank. Press ENTER or issue EXECUTE. Use the asterisk (*) and question mark (?) as wildcard characters in a generic pattern:
 - * Represents an indefinite number of generic characters in a program name. For example, CUST* will process all program names that begin with CUST, and CUST*@ will process all program names that begin with CUST and have the at sign (@) as the last character (characters between the T and @ are ignored).
 - ? Represents a single character generic character. For example, CUS? will process all programs that have a 4-character name beginning with CUS.
- ◆ The From Name field extends beyond the width of most panels. To view From Name on the Audit Trail List, issue RIGHT.
- ◆ For information about the Thru Name field that appears on most parameter entry panels, see the individual field description in this appendix for THRU NAME.

FROM PASSWORD

| | |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> The From Password field appears on the EDIT Program Entry panel and the COPY Program Entry panel to allow you to supply a program password for the originating program in the Edit and Copy actions. |
| Default | Your sign-on password. |
| Format | 1–16 character text name. |
| Options | You must enter a program password from another user’s library if that password is different from the sign-on password, or you can enter a program password from your library. If the program is in your library, you can leave the From Password field blank. |

Considerations

- ◆ The program password can be created when you use the EDIT Program Entry panel to create a new program, or you can supply or alter a program password on the UPDATE Program Entry panel. In addition, you can establish a program password on the command line of the Full-Screen Editor screen by using the SAVE or REPLACE command.
- ◆ You can also include a From Password on the command line when you enter the EDIT or COPY commands, for example:

```
EDIT PROG."library:program-name/password/description".
```
- ◆ For more information about program passwords used on parameter entry panels, see the field description in this appendix for TO PASSWORD. For information about using the From Password with the EDIT and COPY commands, see these individual command descriptions in “[Program Design Facility commands](#)” on page 85.

FUNCTION OPTIONS

| | |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>Display.</i> The Function Options group heading appears on parameter entry panels to identify processing options that are specific to the an action. |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|

Considerations

- ◆ Function Options is a display field that cannot be altered.
- ◆ Individual Function Options are reset to their default values when you exit from a parameter entry panel. Defaults for Function Options can be set permanently by your Master User.

HPO BIND

Description *Display.* The HPO Bind heading appears on the UPDATE Program Profile panel to show the Audit Attributes of the HPO Bind action for the displayed program.

Considerations

- ◆ HPO Bind is a display field that cannot be altered.
- ◆ HPO Bind shows the Audit Attribute fields of Sel (selection), Date, Time, Ver (version), User, and Terminal, as they apply to the HPO Bind action only. For more information about these Audit Attributes, see the individual field descriptions in this appendix.

HPO CHECK

Description *Display.* The HPO Check heading appears on the UPDATE Program Profile panel to show the Audit Attributes of the HPO Check action for the displayed program.

Considerations

- ◆ HPO Check is a display field that cannot be altered.
- ◆ HPO Check shows the Audit Attribute fields of Sel (selection), Date, Time, Ver (version), User, and Terminal, as they apply to the HPO Check action only. For more information about these Audit Attributes, see the individual field descriptions in this appendix.

HPO UNBIND

Description *Display.* The HPO Unbind heading appears on the UPDATE Program Profile panel to show the Audit Attributes of the HPO Unbind action for the displayed program.

Considerations

- ◆ HPO Unbind is a display field that cannot be altered.
- ◆ HPO Unbind shows the Audit Attribute fields of Sel (selection), Date, Time, Ver (version), User, and Terminal, as they apply to the HPO Unbind action only. For more information about these Audit Attributes, see the individual field descriptions in this appendix.

IMMEDIATE?

Description *Optional.* Immediate is an Entry Option on parameter entry panels that lets you issue the current action immediately or defer it by creating a trigger record for later execution.

Default Y (yes).

Options You can enter Y (yes) for immediate processing or N (no) to write a record of the action to the Trigger file.

Considerations

- ◆ When an action is issued immediately, the results of the action are displayed in detail and/or summary reports (if you requested these reports by setting the Display Detail and Display Summary Function Options to Y).
- ◆ When an action is deferred, a trigger record (containing the name of the action and the program name) is written to the Trigger file for later online or batch execution.
- ◆ The Immediate Entry Option is reset to its default value when you exit from a parameter entry panel. Defaults for Entry Options (and Function Options) on parameter entry panels can be set permanently by your Master User.
- ◆ For information about the Trigger file, see “[Utilities](#)” on page 389.

INDENT ON

Description *Optional.* The Indent On field is a Function Option on the EDIT Program Entry panel (also appears on the Full-Screen Editor Profile) to determine whether MANTIS program lines will be displayed in the Full-Screen Editor with an indented hierarchy.

Default Y (yes).

Options You can enter Y (yes) to indent program lines or N (no) to display all program lines starting in the first position.

Consideration The Indent On Function Option is reset to its default value when you exit from a parameter entry panel. Defaults for Function Options (and Entry Options) on parameter entry panels can be set permanently by your Master User.

LIBRARY

Description *Display.* The Library field is displayed on various list panels and browse panels to show the current user library (or transfer in and out of a bin if a program was transferred from one user to another user).

Considerations

- ◆ Library is a display field that cannot be changed.
- ◆ Library appears on various list panels and browse panels, as well as the UPDATE Program Profile panel, COMPOSE Confirmation panel, and detail and summary reports.
- ◆ As shown below, if a program was transferred from one user (Source) to another user (Destination), the Library (Bin) field will appear on the BROWSE Audit Trail Records panel to show the name of the transfer in and out bins:

Source

```
Library . (Bin) . ACCT
Type . . . . . PRGM
Name . . . . . CUST_UPDATE@
Description . . . UPDATE PROGRAM - SOURCE
Status . . . . . ACTIVE
```

Destination

```
Library . (Bin) . ACCT01
Type . . . . . PRGM
Name . . . . . CUST_UPDATE@
Description . . . UPDATE PROGRAM - SOURCE
Status . . . . . ACTIVE
```

MESSAGE

Description *Display.* The Message field is the descriptive text for the Check, Bind, or Unbind message shown on the HPO Status Report.

Considerations

- ◆ Message is a display field that cannot be changed.
- ◆ For a list of codes, messages, and explanations, refer to *MANTIS Messages and Codes, OS/390, VSE/ESA*, P39-5004.

MORE

Description *Display.* More appears on the Prompt List, How to Get Help panel, and detail and summary reports to indicate whether the panel has multiple pages.

Considerations

- ◆ More is a display field that cannot be changed.
- ◆ The More field appears as follows:
 - MORE View the current, single panel.
 - MORE - Scroll backward to view the previous panel.
 - MORE + Scroll forward to view an additional panel.
 - MORE - + Scroll backward or forward to view multiple panels.

NAME

Description *Display.* The Name field shows the unique names of the programs and components as they are displayed on various lists, browse panels, and reports.

Considerations

- ◆ Name is a display field that cannot be changed.
- ◆ The Name field is available for viewing on the Program Directory List, Audit Trail List, BROWSE Program Profile Records panel, UPDATE Program Profile panel, COMPOSE Confirmation panel, detail and summary reports, and HPO Status Report.
- ◆ To reposition a list to view a specific program name, type a value (the name you want to locate or a partial name) over the first name only in the Name field at the top of the list. When you press ENTER, the list will redisplay beginning with the name that corresponds to your value, or the next greater name, if the value you entered cannot be located.

You can also enter the L (locate) command on the command line with a specific name, for example, `====> L CUSTROWSE`. When you press ENTER, CUSTROWSE will be displayed at the top of the list in the Name field, or the next greater name will be displayed, if CUSTROWSE cannot be found.

- ◆ To view other program and component names displayed under the Name field, press the forward scroll key.
- ◆ For a description of the program name supplied on parameter entry panels, see the field description in this appendix for FROM NAME.

NO

Description *Display.* The No (number) field appears on the CEFHECK and DECOMPOSE Detail Reports to list the components in the displayed program.

Considerations

- ◆ No is a display field that cannot be changed.
- ◆ The No field can display a list of up to 64 components on the CEFHECK and DECOMPOSE Detail Reports.

NULLS ON

- Description** *Optional.* Nulls On is a Function Option on the EDIT Program Entry panel (also on the Full-Screen Editor Profile) to determine whether the fields on the Full-Screen Editor screen will have trailing nulls or trailing blanks.
- Default** Y (yes) for trailing nulls.
- Options** You can enter Y (yes) to use trailing nulls or N (no) to use trailing blanks.
- Consideration** The Nulls On Function Option is reset to its default value when you exit from the parameter entry panels. Defaults for Function Options (and Entry Options) on parameter entry panels can be set permanently by your Master User.

OPTION STMTS

- Description** *Display.* The Options StmtS field appears as a summary statistic on the COMPOSE Summary Report to show the number of CSIOPTNS statements that appear in the source program.
- Consideration** Option StmtS is a display field that cannot be changed.

OPTIONS

- Description** *Display.* The Options field is a group heading on summary reports that shows the specified and default settings of the COMMENTS, FORCE, and SEQUENCE parameters as they appear in the CSIOPTNS statement in the source program.

Considerations

- ◆ The Options group heading is a display field that cannot be changed.
- ◆ Options also appears as a group heading on the Reorganize Trigger File panel for the Stop After field.
- ◆ For information about individual fields that appear under the Options group heading, see the COMMENTS, FORCE, SEQUENCE, or STOP AFTER field descriptions in this appendix.

PASSWORD

- Description** *Optional.* The Password field appears on the UPDATE Program Profile panel to allow the program password to be altered.
- Format** 1–16 characters.
- Options** You can change a program password for the specific program or component displayed on the UPDATE Program Profile panel.

Considerations

- ◆ A program password is not needed if you access a program or component in your user library. However, if you access a program or component from another user's library (e.g., in the COMPONENT statement) you must supply the correct program password.
- ◆ For information about supplying the program password as shown on the EDIT Program Entry panel and the COPY Program Entry panel, see the field description in this appendix for FROM PASSWORD.

PROCESSED

- Description** *Display.* Processed is a statistic that appears on parameter entry panels to indicate the number of programs that were processed successfully by the current action.

- Consideration** The Processed field is incremented by 1 each time you issue an action that executes successfully on a program.

PROGRAM

- Description** *Display.* The Program field is a group heading that appears on the Program Design Facility menu to identify and list the options for creating and maintaining MANTIS programs when using the Program Design Facility.

Considerations

- ◆ The Program group heading on the Program Design Facility menu highlights the program design options for creating, editing, and maintaining programs in your library. The options available for selection under the Program group heading are List, Edit, Profile, Purge, Copy, and Rename.
- ◆ For more information about the program design functions under Program, see [“Program design”](#) on page 143.

RECORD COUNT

Description *Display.* The Record Count field appears on the Reorganize Trigger File panel to show the last record that was reorganized on the Trigger file.

Considerations

- ◆ Record Count is a display field that cannot be changed.
- ◆ When the last record is reorganized on the Trigger file, the record number is displayed in the Record Count field. In addition, the message TR2: END OF TRIGGER REORG is shown, indicating the entire Trigger file has been reorganized, and you can continue to add records to it.

RELATIONS

Description *Display.* The Relations (relationship) field appears on the Bill of Materials List to show how programs and components (that were cross-referenced by CREF) relate to each other.

Considerations

- ◆ Relationship is a display field that cannot be changed.
- ◆ The Relationship field displays the COMP (component) and SRC (source) indicators on the Bill of Materials List in this order:
 - COMP SRC (source program displayed at the top of the Bill of Materials List, showing all components that appear in the program).
 - SRC COMP (component displayed at the top of the Bill of Materials List, showing all source programs in which the component appears).

REPLACE

Description *Display.* Replace is a group heading on the CEFCHECK and COMPOSE Summary Reports to show information about the replaced executable program.

Considerations

- ◆ Replace is a display field that cannot be changed.
- ◆ For information about the fields that appear under the Replace group heading, see the individual field descriptions in this appendix for COMPOSED (date), CHANGED (date), LIBRARY, and NAME.

REPLACE IF FOUND

Description *Optional.* The Replace If Found field is a Function Option that appears on the COPY Program Entry panel and the RENAME Program Entry panel to let you protect an existing program by the same name in your library (or replace it) as a result of the Copy or Rename action.

Default N (no).

Options You can enter Y (yes) to replace a program by the same name, or N (no) to terminate the Copy or Rename action and change the To Name to a unique program name.

Considerations

- ◆ If you enter N (no) for Replace If Found and you attempt to copy or rename a program that already exists by the same name in your library, the message U27: TO NAME ALREADY EXISTS is displayed. Change the To Name to a unique program name and start the Copy or Rename action again.
- ◆ If you enter Y (yes) for Replace If Found and you attempt to copy or rename a program that already exists by the same name in your library, the original program will be replaced by the copied or renamed program.
- ◆ The Replace If Found Function Option is reset to its default value when you exit from the parameter entry panels. Defaults for Function Options (and Entry Options) on parameter entry panels can be set permanently by your Master User.

REPLACE STATUS

Description *Display.* The Replace Status field appears on the CEFCHECK, COMPOSE, and DECOMPOSE Summary Reports to indicate the replace status of the source or executable program.

Considerations

- ◆ Replace Status is a display field that cannot be changed.
- ◆ Replace Status appears on the summary reports to show the 3-character MANTIS return code that indicates the replace status of the program after it was checked, composed, or decomposed. Generally, the most common values that are returned in the Replace Status field include (by report):
- ◆ CEFCHECK Summary Report:
 - ERR: PROGRAM OR COMPONENT ERROR. Indicates an error exists with the program or components, such as a component not found or a password violation.
 - NOC: NO COMPONENTS IN PROGRAM. Indicates that no components were found in the source program.
 - REP: REPLACED. Indicates that the executable program will be replaced if the source program is composed.
 - SAV: SAVED. Shows that the executable program does not exist, and it will be saved when the source program is composed.

- ◆ COMPOSE Summary Report:
 - CSC: THE EXECUTABLE PROGRAM HAS CHANGED SINCE THE LAST TIME COMPOSED. Indicates a Compose has not been issued since the executable program was changed.
 - ERR: PROGRAM OR COMPONENT ERROR. Indicates an error exists with the program or components, such as a component not found or a password violation.
 - NRS: NO REPLACE STATEMENT. Indicates that a REPLACE statement was not found in the source program.
 - REP: REPLACED. Indicates that the executable program will be replaced if the source program is composed.
 - SAV: SAVED. Shows that the executable program, which did not exist before the Compose was issued, is now saved.
 - STD. SOURCE AND TARGET NAME MUST BE DIFFERENT. Indicates the name of the source program and the target program name on the REPLACE statement must be different.

- ◆ DECOMPOSE Summary Report:
 - AOK: GOOD REPLACE STATUS. Indicates that no components were changed and the Replace Status of the composed program is unchanged.
 - NOC: NO COMPONENTS IN PROGRAM. Indicates that no components were found in the executable program.
 - NSS: NO SOURCE STATEMENT. Indicates that a SOURCE statement was not found in the executable program when the Decompose action was issued.
 - STD. SOURCE AND TARGET NAME MUST BE DIFFERENT. Indicates the name of the source program and the target program name on the REPLACE statement must be different.

- ◆ For a list of codes, messages, and explanations, refer to *MANTIS Messages and Codes, OS/390, VSE/ESA, P39-5004*.

REPLACE STMTS

Description *Display.* The Replace StmtS field appears on the Compose Summary Report as a summary statistic to show the number of REPLACE statements that appear in the source program.

Consideration Replace StmtS is a display field that cannot be changed.

REQUEST

Description *Display.* The Request field appears on the Trigger File List to show the action that was written as a trigger record.

Considerations

- ◆ Request is a display field that cannot be changed.
- ◆ When you create a trigger record by setting the Immediate Function Option to N (no) on a parameter entry panel, the Trigger File List displays the Request field to show the action for a specific trigger record. Request helps you manage the Trigger File List by identifying trigger records by their individual action.
- ◆ For more information about the Trigger File List, see “[Utilities](#)” on page 389.

SCROLL (P H C)

- Description** *Optional.* The Scroll (P H C) field is a Function Option that appears on the EDIT Program Entry panel (also on the Full-Screen Editor Profile) to allow you to control the vertical forward and backward scrolling amount for the Full-Screen Editor.
- Default** P (page).
- Options** You can enter P (scroll by a full page), H (scroll by a half page), or C (scroll to the line where the cursor is currently positioned to the top of the panel).

Considerations

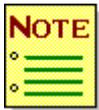
- ◆ The Scroll (P H C) Function Option is reset to the default value when you exit from the parameter entry panels. Defaults for Function Options (and Entry Options) on parameter entry panels can be set permanently by your Master User.
- ◆ For information about the other Full-Screen Editor Function Options available on the EDIT Program Entry panel, see the individual field descriptions in this appendix for CAPS ON, INDENT ON, and NULLS ON.
- ◆ For more information about the Full-Screen Editor and use of the Scroll option, see [“Using the Full-Screen Editor”](#) on page 165.

SEL

- Description** *Optional.* The Sel (selection) field appears on the UPDATE Program Profile panel to let you invoke addendum processing for a specific action.
- Default** N (no).
- Options** Entering Y (yes) invokes addendum processing on the UPDATE Program Profile panel for a specific action, or entering N (no) processes all designated programs for the action.

Considerations

- ◆ Addendum processing is an effective way of conserving resources and saving processing time by allowing you to issue an action only on those programs that changed since the last time you issued the same action on them.
- ◆ When a new program is created, the Sel field settings for actions shown on the UPDATE Program Profile panel show the default N (no). These settings can be altered for the specific program and a specific action.
- ◆ After updating a program's profile on the UPDATE Program Profile panel, the Sel field settings remain as you entered them, either Y or N.
- ◆ To invoke addendum processing, set the Sel field to Y (yes) for the action on which you want addendum processing to be applied. Then set the Addendum Entry Option to Y (yes) on the parameter entry panel for that same action.



Set the Sel field to Y before you set Addendum to Y. The Sel field setting must be in place on the UPDATE Program Profile panel before you display the corresponding parameter entry panel, set Addendum to Y, and issue the action.

- ◆ You can alter the Sel field settings only on the UPDATE Program Profile panel. You can then view these settings on the BROWSE Program Profile Records panel.

SELECT

Description *Optional.* The Select field provides the single space for typing the selection character (/) to choose a command or action from the Prompt list.

Options You can enter the selection character (/) for one command or action displayed on the Prompt list, or you can leave the Select field blank.

Considerations

- ◆ The Select field is the only field on the Prompt list that can be altered.
- ◆ You can select only one command or action at a time from the Prompt list. When selected, the command or action is displayed at the top of the list. You can select from one page, scroll forward (or backward) to another page, and select again. However, only the last selection will be shown on the list. When you exit from the Prompt list, the last selection will be executed.
- ◆ For more information about the Prompt, see [“Using the Program Design Facility”](#) on page 31.

SELECTION

Description *Optional.* The Selection field lets you select an option number displayed on the Program Design Facility menu or lets you select an action item from the Action Bar.

Format On the Program Design Facility menu, enter the number displayed that corresponds to the desired option. On the Action Bar, enter the first character of the desired action item. For example, enter P for Program, C for Component Engineering Facility, and so on

Considerations

- ◆ You can enter only one option number displayed on the Program Design Facility menu at a time. In addition, you can only enter one action item character displayed on the Action Bar at a time.
- ◆ For more information about the Selection field, the Program Design Facility menu, or the Action Bar, see [“Using the Program Design Facility”](#) on page 31.

SEQNO

Description *Display.* The SeqNo (sequence number) field appears on the Audit Trail and Trigger file panels to identify records in order.

Considerations

- ◆ The last action you issued appears at the top of the Audit Trail List. The last action you issued appears at the bottom of the Trigger File List.
- ◆ To reposition a specific audit trail record on the Audit Trail List, or to reposition a specific trigger record on the Trigger File List, type the sequence number of your choice over the first sequence number in the SeqNo field and press ENTER. The list will be repositioned at the number you typed, or the next greater number, if the one you entered cannot be located.
- ◆ To locate a generic range of trigger records from the Trigger File List, use the L (locate) command with the wildcard characters "*" and "?". Wildcard processing from the Trigger File List is based on a numeric text string search of the SeqNo field, where "*" represents an indefinite string of characters, and "?" represents a single character. Because the wildcard search is based on a numeric string, the first character you specify in the generic pattern must be a whole number. The wildcard character cannot be the first character in the string. See "[Utilities](#)" on page 389 for more information on using wildcard characters from the Trigger File List.

SEQUENCE

Description *Display.* The Sequence field appears on the CEF CHECK Summary Report and COMPOSE Summary Report to show the specified and default settings of the SEQUENCE parameter from the CSIOPTNS statement of the displayed source program.

Considerations

- ◆ The Sequence field is a display field that cannot be changed.
- ◆ The SEQUENCE parameter is an optional parameter of the CSIOPTNS statement that specifies the sequence of program line numbers for a source program.
- ◆ For more information about using the CSIOPTNS statement and the SEQUENCE parameter in a Component-Engineered source program, see “[Component Engineering Facility \(CEF\)](#)” on page 297.

SIZE

Description *Display.* The Size field appears on the UPDATE Program Profile panel and the BROWSE Program Profile panel to show the total number of bytes in the displayed MANTIS program.

Considerations

- ◆ Size is a display field that cannot be changed.
- ◆ The Size field will display up to 65,536 bytes (the value of 64K).

SKIPPED

Description *Display.* The Skipped field is a process statistic that appears on parameter entry panels to indicate the number of programs that were skipped by the current action.

Considerations

- ◆ The Skipped field is incremented by 1 each time you issue an action that bypasses a designated program.
- ◆ A program is skipped by an action if the program has a status other than the value ACTIVE. In addition, the Skipped field is also incremented each time you decide to manually skip a program by issuing SKIP from a parameter entry panel.
- ◆ The Profile and Purge actions will not skip a program, regardless of the program status.

SOURCE

Description *Display.* Source is a group heading that appears on the CEFCHECK, COMPOSE, and DECOMPOSE Summary Reports, and the BROWSE Audit Trail Records panel to identify the source program. Source also appears on the UPDATE Trigger Record panel to identify the trigger record.

Considerations

- ◆ Source is a display field that cannot be changed.
- ◆ The Source group heading highlights the individual fields of Description, Library, Name, and Status to identify the source program on summary reports. In addition, Source highlights the Date Request, Library, SeqNo, and Status of the trigger record on the UPDATE Trigger Record panel. (Status can be altered.)
- ◆ For information about the fields that appear under the Source group heading, see the individual field descriptions in this appendix for DATE REQUEST, DESCRIPTION, LIBRARY, NAME, TYPE, and STATUS.

SQL BIND

Description *Display.* The SQL Bind heading appears on the UPDATE Program Profile panel to show the Audit Attributes of the SQL Bind action for the displayed program.

Considerations

- ◆ SQL Bind is a display field that cannot be altered.
- ◆ SQL Bind shows the Audit Attribute fields of Sel (selection), Date, Time, Ver (version), User, and Terminal, as they apply to the SQL Bind action only. For more information about these Audit Attributes, see the individual field descriptions in this appendix.

SQL CHECK

Description *Display.* The SQL Check heading appears on the UPDATE Program Profile panel to show the Audit Attributes of the SQL Check action for the displayed program.

Considerations

- ◆ SQL Check is a display field that cannot be altered.
- ◆ SQL Check shows the Audit Attribute fields of Sel (selection), Date, Time, Ver (version), User, and Terminal, as they apply to the SQL Check action only. For more information about these Audit Attributes, see the individual field descriptions in this appendix.

SQL UNBIND

Description *Display.* The SQL Unbind heading appears on the UPDATE Program Profile panel to show the Audit Attributes of the SQL Unbind action for the displayed program.

Considerations

- ◆ SQL Unbind is a display field that cannot be altered.
- ◆ SQL Unbind shows the Audit Attribute fields of Sel (selection), Date, Time, Ver (version), User, and Terminal, as they apply to the SQL Unbind action only. For more information about these Audit Attributes, see the individual field descriptions in this appendix.

STAT

Description *Display.* The Stat (status) field appears on the DECOMPOSE Detail Report to show values that indicate the status of the component(s) after they were decomposed.

Considerations

- ◆ Stat is a display field that cannot be changed.
- ◆ The most common values that are displayed in the Stat field are:
 - CHG: COMPONENT CHANGE. Indicates that a component changed since the last Compose action was issued on its source program.
 - NFC: COMPONENT NOT FOUND. The specified COMPONENT statement cannot be located.
 - PWV: PASSWORD VIOLATION. The password of the program or component specified does not match the password contained in the library.
 - Spaces: No changes were made to the component since the last Compose action was issued on its source program.
- ◆ For a list of codes, messages, and explanations, refer to *MANTIS Messages and Codes, OS/390, VSE/ESA, P39-5004*.

STATEMENT COUNTS

Description *Display.* The Statement Counts field is a group heading that appears on the CREF Summary Report to list the cross-referenced entity statements found in your library.

Considerations

- ◆ Statement Counts is a display field that cannot be changed.
- ◆ Only source programs and COMPONENT statements are cross-referenced.

STATUS

- Description** (1) *Required.* The Status field appears on the UPDATE Program Profile panel to let you supply or alter the current status of a MANTIS program or component.
- (2) *Optional.* The Status field appears on the UPDATE Trigger Record Entry panel to let you alter the current status of a trigger record.
- (3) *Display.* The Status field shows the current status of program and components on certain list panels and the BROWSE Program Profile panel.
- (4) *Display.* The Status field shows a 3-character MANTIS message code on the CEFCHECK Detail Report for individual components that were checked.
- Default** Current status as entered on the UPDATE Program Profile panel (for programs and components), or current status as entered on the UPDATE Trigger Record Entry panel (for trigger records).
- Format** On the UPDATE Program Profile panel, 1–8 alphanumeric or special characters (spaces are not permitted). On the UPDATE Trigger Record Entry panel, 1–8 alphanumeric or special characters, or spaces.
- Options** You can enter the value ACTIVE on the UPDATE Program Profile panel to allow a program to be processed when you issue an action on the program, or you can enter up to eight characters (for a value other than ACTIVE) to indicate an inactive status, and thereby bypass processing for the particular program. Note that Profile and Purge will execute regardless of the value of program status.

Considerations

- ◆ Status determines whether a program will be executed or bypassed by a designated action. Only a program status of ACTIVE can be executed. Any value other than ACTIVE in the Status field (of the UPDATE Program Profile panel) is ignored and the program is bypassed.

The Profile and Purge actions are exceptions to program status. Profile lets you alter the Status field by displaying the UPDATE Program Profile panel, and Purge lets you remove a program from your directory regardless of its current status.

- ◆ You can alter program status on the UPDATE Program Profile panel and UPDATE Trigger Record Entry panel only. Other panels display the current status of a program or component for viewing only.
- ◆ When issuing an action from a parameter entry panel and the Entry Option Immediate is set to N (to create a trigger record), the trigger record will not be created unless the program status is ACTIVE (exceptions are Profile and Purge). Only those programs with a status of ACTIVE can be created as trigger records. However, once the status is changed to ACTIVE, and the trigger record is created, you can alter the Status field for the trigger record on the UPDATE Trigger Record panel. Again, trigger records with a status other than ACTIVE cannot be executed.
- ◆ Status is also a field that appears on the CEFCHECK Detail Report to show the 3-character MANTIS message code that indicates the status of components after you issued the CEF Check action. The most common values displayed in the Status field are:
 - CHG: COMPONENT CHANGE. Indicates that a component changed since the last Compose action was issued on its source program.
 - NFC: COMPONENT NOT FOUND. The specified COMPONENT statement cannot be located.
 - PWV: PASSWORD VIOLATION. The password of the program or component specified does not match the password contained in the library.
 - Spaces: No changes were made to the component since the last Compose action was issued on its source program.
- ◆ For a list of codes, messages, and explanations, refer to *MANTIS Messages and Codes, OS/390, VSE/ESA*, P39-5004.

STOP AFTER

| | |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <i>Optional.</i> Stop After appears on the Reorganize Trigger File panel to allow you to enter a record number that, when reached, will stop the reorganization of the Trigger file. |
| Default | 100. |
| Format | 1–5 numeric characters. |
| Options | You can enter numeric characters to represent a number of trigger records, or you can leave the Stop After field blank. |

Considerations

- ◆ Enter a number of records in the Stop After field on the Reorganize Trigger File panel. This field tells the system when to stop reorganizing records, thereby avoiding a loop.

For example, if you have 10000 trigger records, enter 5000 in the Stop After field and press ENTER. The reorganization begins, and when record 5000 is reached and reorganized, 5000 will appear in the Record Count field. The message TR1: STOPPED AFTER NUMBER YOU WANTED will also be displayed. With 5000 still shown in the Stop After field, press ENTER again. The next 5000 records will be reorganized, and when the system reorganizes the last record (which is 10000 in this example), 10000 will be shown in the Record Count field. The message TR2: END OF TRIGGER REORG will then be shown. This means the entire Trigger file is now reorganized, and you can continue to add records to it.

- ◆ If you leave the Stop After field blank or you run the reorganization of the Trigger file in batch (using the program ADOX ETRG REORG), 100 records will be used as the default value.
- ◆ For information about the RECORD COUNT field, see the detailed description in this appendix.
- ◆ For more information about the Reorganize Trigger File panel, see “[Utilities](#)” on page 389.

SUMMARY STATISTICS

Description *Display.* Summary Statistics appears on the summary reports as a group heading to provide processing information about the CEF Check, Compose, and Decompose actions.

Considerations

- ◆ Summary Statistics is a display field that cannot be changed.
- ◆ For information about the fields that are displayed under the Summary Statistics group heading on the CEF Check, Compose, and Decompose Summary Reports, see the individual field descriptions in this appendix for CHANGED, COMPONENTS, COMPONENT STMTS, COMPOSE REQUIRED, DECOMPOSE, ERRORS, OPTION STMTS, REPLACE STMTS, REPLACE STATUS, and TRIGGER RECORD CREATED.

TERMINAL

Description *Display.* The Terminal field appears on the Audit Trail List, BROWSE Audit Trail List, UPDATE Program Profile panel, and BROWSE Program Profile Records panel to identify the number of the terminal from which an action was issued.

Considerations

- ◆ Terminal is a display field that cannot be changed.
- ◆ The Terminal field extends beyond the width of most panels. To view Terminal on the Audit Trail List, enter the RIGHT command on the command line to scroll to the Terminal field.

THRU NAME

Description *Optional.* The Thru Name field appears on most parameter entry panels to represent the ending program name in a range of programs to be processed by an action.

Options Enter the ending program name in the Thru Name field for a range of program names, or leave the Thru Name field blank for a single program or generic pattern.

Considerations

- ◆ Type the starting name of a program range in the From Name field and type the ending name in the Thru Name field on a parameter entry panel. Press ENTER or issue EXECUTE to start the action.
- ◆ The To Name field appears on the COPY and RENAME Program Entry panels. For information about this field, see the individual field description in this appendix for TO NAME.

TIME

Description *Display.* The Time field indicates the last time a program was changed by an action or the time when a trigger record was created.

Format Time is displayed as HH:MM:SS.

Considerations

- ◆ Time is a display field that cannot be changed.
- ◆ The Time field appears for viewing on the Program Directory List, Bill of Materials List, Audit Trail List, BROWSE Audit Records List, UPDATE Program Profile panel, and Trigger File List.
- ◆ To view the Time field on the Bill of Materials List or Component Where Used List, issue RIGHT to move the columns of these lists to the right where Time is displayed.

TO DESCRIPTION

- Description** *Optional.* The To Description field appears on the COPY and RENAME Program Entry panels to let you alter the description of a target program when you copy or rename it in your library.
- Default** Current program description.
- Format** 1–46 alphanumeric characters.
- Options** You can type over the displayed description with a new description or you can leave the description as it is displayed.

Considerations

- ◆ To change a program's description, type over the existing Description field on the UPDATE Program Profile panel and press ENTER or issue EXECUTE. You can also change a description by using the EDIT command, for example:

```
EDIT PROG. "library:program-name/password/description"
```

- ◆ For information about the Copy and Rename actions, see “[Program design](#)” on page 143.

TO LIBRARY

- Description** *Display.* The To Library field appears on the COPY Program Entry panel to show your user library for the Copy action.

Considerations

- ◆ Library is a display field that cannot be changed.
- ◆ You can copy a program from another user's library (From Library) on the COPY Program Entry panel, but you can only copy that program into your library (To Library).
- ◆ For information about the Copy action, see “[Program design](#)” on page 143.

TO NAME

Description *Required.* The To Name field appears on the COPY and RENAME Program Entry panels to represent the target program for the Copy and Rename actions.

Format MANTIS standard program name.

Considerations

- ◆ To Name is required for the COPY and RENAME panels and must be entered.
- ◆ When copying or renaming a generic pattern, enter the generic pattern name in the From Name field and press ENTER. The first program in the pattern appears in the To Name field and the message U03: ENTER 'TO' NAME is shown. Type over the To Name (which was copied automatically from the From Name to save keystrokes) with a new program name (and a new password, if desired) and press ENTER or issue EXECUTE.
- ◆ You can copy or rename a program into your library only.

TO PASSWORD

Description *Optional.* The To Password field appears on the COPY and RENAME Program Entry panels to represent the password of the target program for the Copy and Rename actions.

Format 1–16 character text name

Options You can leave the To Password blank (this defaults to your sign-on password), or you can enter a program password in the To Password field for your library only.

Considerations

- ◆ Establish a program password on the EDIT Program Entry panel or the UPDATE Program Entry panel. In addition, you can establish a program password with the SAVE or REPLACE command on the command line of the Full-Screen Editor.
- ◆ You can also supply or change a password using the EDIT command, for example: `EDIT PROG."library:program-name/password/description"`

TRIGGER RECORD CREATED?

Description *Display.* Trigger Record Created appears on the CEF CHECK Summary Report to indicate whether a trigger record was created as a result of the CEF Check action.

Considerations

- ◆ Trigger Record Created is a display field that cannot be changed.
- ◆ To create a trigger record, set the Immediate Entry Option to N (no) on a parameter entry panel before issuing an action.
- ◆ For more information about trigger records, see “Utilities” on page 389.

TYPE

Description *Display.* The Type field appears on the Bill of Materials List, BROWSE Audit Trail Records panel, and Trigger File List to show the type of entity for each record displayed.

Considerations

- ◆ Type is a display field that cannot be changed.
- ◆ If the Type field extends beyond the width of the panel, issue RIGHT to view the rest of the field.
- ◆ The default value for type is PROG., which represents program. Note that the trailing period (.) is included.

UPPERCASE

Description *Display.* Uppercase is a Function Option on the EDIT Program Entry panel (also appears on the Full-Screen Editor Profile) that you can set to indicate if MANTIS will treat displayed characters as uppercase or lowercase.

Consideration If Uppercase is set to N (No) at the EDIT Program Entry panel, or OFF at the Full-Screen Edit Profile panel, there are special considerations when using the CHANGE, FIND, RCHANGE, AND RFIND commands. See the detailed command descriptions in “Editing commands” on page 203 for more information.

USER

Description *Display.* The User field appears on the UPDATE Program Profile panel and the BROWSE Program Profile panel to identify a user who issued an action.

Consideration User is a display field that cannot be changed.

UTILITIES

Description *Display.* Utilities is a group heading that appears on the Program Design Facility menu to identify the individual utility options available with the Program Design Facility.

Considerations

- ◆ Utilities is a display field that cannot be changed.
- ◆ Utilities groups the options on the Program Design Facility menu that you can select for Audit Trail, Browse Audit Trail, Program Profile, and Trigger List.
- ◆ For more information about the Utilities options, see “Utilities” on page 389.

VER

Description *Display.* The Ver (version) field appears on the UPDATE Program Profile panel, BROWSE Program Profile panel, Program Directory List, and BROWSE Audit Trail Records panel to show (1) the latest version of a program that was saved or replaced, or (2) the latest version of a program that was executed by a particular action.

Considerations

- ◆ Ver is a display field that cannot be changed.
- ◆ When you save or replace a program in the Full-Screen Editor using the SAVE or REPLACE commands, the Ver field on the UPDATE Program Profile panel (under the Changed heading), is incremented by 1.
- ◆ When you execute an action (such as COMPOSE, DECOMPOSE, CEFCHECK), the Ver field on the UPDATE Program Profile panel (under the heading for the particular action) is incremented by 1.
- ◆ On the UPDATE Program Profile panel and BROWSE Program Profile panels:

The Ver field appears under the Changed heading to show the total number of times the program was saved or replaced in the Full-Screen Editor (using the SAVE or REPLACE commands).

The Ver field also appears under the CEF Check, CEF Compose, CEF Decompose, HPO Check, HPO Bind, HPO Unbind, SQL Check, SQL Bind, SQL Unbind, Cref, Print, Transfer Out, and Transfer In headings to show the current version number of the program which was executed by these specific actions.

For example, if a program is composed seven times, seven records will appear on the Audit Trail List (a unique record for each of the seven issues of the Compose action). However, the Ver field on the UPDATE Program Profile panel (under the CEF Compose heading) displays the total number of times Compose was issued on the program, in this case seven.

- ◆ On the Program Directory List:

The Ver field shows the latest version changed or replaced in the Full-Screen Editor.

- ◆ On the BROWSE Audit Trail Records panel:

The Ver field indicates the latest program version number that was executed by the specific action shown in the Action Code field.

B

Program Design Facility commands

Appendix B is a quick reference list of the commands used with the Program Design Facility. Commands on this list are arranged in alphabetic order with a brief description. For information about the format of each command, guidelines for usage, and the panel(s) where commands can be issued, see “[Program Design Facility commands](#)” on page 85.

Program Design Facility commands quick reference table

| Command | Description |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACTION (ACTN) | Displays the Action Bar across the top of a list panel. |
| AUDIT | Displays the Audit Trail List. |
| BILL | Displays the Bill of Materials List. |
| BIND | Creates an HPO-bound version of a MANTIS program. |
| BROWSE | Lets you scroll through profile information for each program in your directory. |
| CANCEL | Allows you to exit from a session with the Program Design Facility, one panel at a time, or to exit from the Action Bar pull-down to the Action Bar. |
| CEFCHECK | Identifies program components and source code that changed since the last Compose was issued. |
| CHECK | Checks an HPO-bound program to determine if any programs or components changed since the last time the program was bound. |

| Command | Description |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| CLEAR | Supports the 3270 hardware feature to clear a panel of the data you typed. |
| COMMAND (CMD) | Toggles the command line from the top of your panel to the bottom (or from the bottom to the top). |
| COMPOSE | Assembles a source program and its COMPONENT statement(s) into an executable program with expanded component code. |
| CONFIRM | Lets you confirm execution of an action from a parameter entry panel. |
| COPY | Copies the contents of a program from your library (or another library) to a program in your library. |
| CREF | Cross references source programs and components in your library and then builds the Bill of Materials List from the cross reference. |
| DECOMPOSE | Disassembles an executable program into individual components and then updates program libraries with source changes and component changes. |
| DELETE | Deletes a record from the Trigger file |
| EDIT | Starts a session with the Full-Screen Editor (FSE) where you can view, create, and modify MANTIS programs. |
| ET | Accesses Entity Transformers (if available) directly from the Program Design Facility menu. |
| EXECUTE | Executes an action on a trigger record, parameter entry panel, or updates the program profile. |
| EXHELP | Displays a help panel to explain a specific action. |
| EXIT | Terminates the current function and returns to a higher level function. |
| FORWARD (FWD) | (1) Repositions a list forward one panel, and (2) retrieves the next record on a browse panel. |
| HELP | Displays a help panel that explains a specific field, command, or message, or displays the KEYSTEMP panel where you can alter PF keys. |
| KEYSUPDATE (KUPD) | Displays a list of PF key settings that you can change for the duration of the current action. |
| L (locate) | Repositions a list panel to a specific program or component. |

| Command | Description |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LEFT | Moves the columns of a list panel to the left to allow you to view all fields that extend beyond the width of your screen. |
| LIST | Displays the Program Directory List to let you select programs for editing (using the Full-Screen Editor), or to let you select programs for other actions. |
| LOGOFF | Lets you exit from MANTIS (if you are editing using the Full-Screen Editor, your changes are saved). |
| MENU | Lets you return to the MANTIS Facility Selection menu (if you are editing using the Full-Screen Editor, your changes are saved). |
| PROFILE | Displays program profile information. |
| PROMPT (PMPT) | Displays a list of the valid commands and actions you can issue from the current panel. |
| PURGE | Deletes a program from your directory. |
| REFRESH | Updates date and time on list panels, restores the Action fields on list panels, incorporates new entries on list panels, removes deleted entries from list panels, and resets Entry and Function Options on parameter entry panels. |
| RENAME | Renames a program from your library to your library, and allows you to change program name, description, and password. |
| RETRIEVE (?) | Redisplays the last seven commands, one at a time, issued from the command line of a panel. |
| RIGHT | Moves the columns of a list panel to the right to allow you to view all fields that extend beyond the width of your screen. |
| SKIP | Bypasses execution of an action on a parameter entry panel for a specific program. |
| SQLBIND | DB2 and SQL/DS environments only. <i>Static</i> : Places information about a program's SQL statements and host variables into an internal file to create an SQL support module for static execution. <i>Extended Dynamic</i> : Creates an SQL/DS access module for the program, saves information about SQL statements and host variables, and makes the program immediately executable. |
| SQLCHECK | DB2 and SQL/DS environments only. <i>Static</i> : Determines if a program and its corresponding SQL support load module are consistent. <i>Extended Dynamic</i> : Determines if the program and corresponding SQL/DS access module are consistent. |

| Command | Description |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SQLMAINT | DB2 environment only. Displays the SQL Bind Information panel and allows you to view and/or purge the information. |
| SQLUNBIND | DB2 and SQL/DS environments only. <i>Static</i> : Marks a MANTIS program as not SQL bound and deletes the SQL bind information from the internal file. <i>Extended Dynamic</i> : Marks the program as not SQL bound, removes SQL statements and host variables, and deletes the associated SQL/DS access module. |
| UNBIND | Replaces the HPO-bound version of a MANTIS program with the unbound version. |
| UPDATE | Updates program profile information and trigger records. |

C

Editing commands

This appendix is a quick reference list of the commands used with the Full-Screen Editor and the Line Editor. Commands on this list are arranged in alphabetic order with a brief description. The Type column indicates whether the command is an FSE primary command (P) or line command (L) or a Line Editor command. For information about the format of each command, guidelines for usage, and the panel(s) where commands can be issued, see “[Using the Full-Screen Editor](#)” on page 165.

Editing commands quick reference table

| Command | Type | Description |
|------------|---------------|----------------------------------------------------------------------------------------------------|
| A (after) | FSE (L) | Used with COPY or MOVE command to indicate destination— <i>after</i> this line. |
| ALTER | LE | Modifies line(s) of code. |
| B (before) | FSE (L) | Used with COPY or MOVE command to indicate destination— <i>before</i> this line. |
| BIND | FSE (P) LE | Converts a program from unbound to bound format (BIND) or from bound to unbound format (BIND OFF). |
| BOTTOM | FSE (P) | Scrolls terminal window to the end of your program. |
| C (copy) | FSE (L) | Specifies the line(s) you want to copy. |
| CANCEL | FSE (P) | Terminates FSE without saving the program. |

| Command | Type | Description |
|---------------|---------------|--------------------------------------------------------------------------------------------------|
| CAPS ON/OFF | FSE (P) | Specifies whether the data from the display will be treated as uppercase or lowercase (mixed). |
| COPY | FSE (P) LE | Specifies that MANTIS should copy all or part of a MANTIS program into the program being edited. |
| D (delete) | FSE (L) | Specifies the line(s) you want to delete. |
| DOWN | FSE (P) | Scrolls editor screen down. |
| END | FSE (P) | Saves program and terminates programming mode. |
| ERASE | FSE (P) LE | Deletes one or more program lines. |
| ERRCODE | FSE (P) | Displays text for 3-character syntax error code. |
| FIND | FSE (P) | Finds and displays the next occurrence of a string in a program. |
| HELP | FSE (P) LE | Displays a help prompt for an error code, a command, a reserved word, or online help for FSE. |
| I (insert) | FSE (L) | Inserts one or more blank lines after this line. |
| KILL | FSE(P) LE | Terminates a program in a loop. Can be changed or disabled by the Master User. |
| LEFT <i>n</i> | FSE (P) | Scrolls editor screen to the left " <i>n</i> " columns. |
| LIST | FSE (P) LE | Lists all or part of the program currently in work area. |
| LOAD | FSE (P) LE | Retrieves a program from a library. |
| LOCATE | FSE (P) | Locates a specific line in the current program. |
| LOGOFF | FSE (P) | Saves FSE changes and exits from MANTIS. |
| M (move) | FSE (L) | Specifies the line(s) you want to move. |
| MENU | FSE (P) | Saves FSE changes and displays the MANTIS Facility Selection menu. |
| NEW | FSE (P) LE | Clears current work area. |
| O (overlay) | FSE (L) | Used with the COPY or the MOVE command to indicate destination— <i>over</i> this line. |

| Command | Type | Description |
|----------------|---------------|------------------------------------------------------------------------------------------|
| PRINT | FSE(P) | Routes current session to printer designated in your User Profile. |
| PROFILE | FSE (P) | Displays Edit Profile. |
| PURGE | FSE (P) LE | Erases program from library. |
| QUIT | FSE(P) LE | Terminates the editing session without saving the program. |
| R (repeat) | FSE (L) | Specifies the line(s) you want to repeat one or more times. |
| RCHANGE | FSE (P) | Repeats last CHANGE command that was entered. |
| REPLACE | FSE (P) LE | Replaces program in your library with the program currently being edited. |
| RESET | FSE (P) | Resets any pending primary commands, line commands, and commands issued from PF keys. |
| RFIND | FSE (P) | Repeats the last FIND command entered. |
| RIGHT <i>n</i> | FSE (P) | Scrolls editor screen to the right " <i>n</i> " columns. |
| RUN | FSE (P) LE | Executes program currently in work area. |
| S (select) | FSE (L) | Selects <i>n</i> -level editing for Component-Engineered source programs and components. |
| SAVE | FSE (P) LE | Copies the edited program into the library. |
| SCROLL | FSE (P) LE | Determines scrolling mode. |
| SEQUENCE | FSE (P) LE | Renumbers program lines currently in your work area. |
| TOP | FSE (P) | Scrolls terminal window to the top of your program. |
| UP | FSE (P) | Scrolls editor screen up. |
| USAGE | LE | Displays lines that contain a specified user variable. |

D

Panels quick reference

This appendix provides a quick reference list of panels used with the Program Design Facility. The following table lists panels in alphabetic order by panel title and includes a brief description:

Panels quick reference table

| Panel title | Description |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audit Trail List | The list panel that shows the actions performed on a program or component, arranged with the latest action shown at the top. |
| Bill of Materials List | A list panel built from the Cross Reference (CREF) action to show the components referenced in a source program. The Component Where Used List can be accessed from this list panel. |
| BIND Program Entry | The parameter entry panel that starts the HPO-bind action to bind MANTIS programs. You may supply program names and set the Entry Options for Immediate, Confirmation, and Addendum. You may also set the Function Option for Display Status. |
| BROWSE Audit Trail | The panel that lets you view the details of each record shown on the Audit Trail List. Records can be positioned by a unique sequence number. |
| BROWSE Program Profile Records | The panel that lets you view the profile information for each program in your directory. Records can be positioned by program name. |
| CEFCHECK Detail Report | The report you request that shows the components, programs, and statistics that result from the CEF Check action. |

| Panel title | Description |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CEFCHECK Program Entry | The parameter entry panel that starts the CEF Check action which shows the source programs and components that changed since the last Compose was issued. You may supply program names and set the Entry Options for Immediate, Confirmation, and Addendum. You may also set the Function Options for Create Trigger, Display Detail, and Display Summary. |
| CEFCHECK Summary Report | The one-page report that you request to identify the programs, list the options used, and show totals for all components that changed since the last Compose was issued on their source program. |
| CHECK Program Entry | The parameter entry panel that starts the HPO Check action. You may supply program names and set the Entry Options for Immediate, Confirmation, and Addendum. You may also set the Function Option for Display Status. |
| Component Where Used List | A list panel built from the Cross Reference (CREF) action to show the source programs that use a component. This list panel is accessed from the Bill of Materials List. |
| COMPOSE Confirmation | A panel indicating that changes you made to an executable program will be overlaid by the Compose action you are about to issue. You may issue or skip the Compose from this panel. |
| COMPOSE Program Entry | Parameter entry panel that starts the Compose action to assemble COMPONENT statements into expanded components in an executable MANTIS program. This panel lets you supply source program names and set the Entry Options for Immediate, Confirmation, and Addendum. You may also set the Function Options for Component Stmt, Force Compose, and Display Summary. |
| COMPOSE Summary Report | The one-page report you request to highlight the major steps of the Compose action you issued, including the program involved, option settings, and component statistics. |
| COPY Program Entry | Parameter entry panel that starts the copy action that copies the contents of a program from your library (or another library) to a program in your library. This panel allows you to supply program names and set the Entry Options for Immediate and Confirmation. You may also set the Function Option for Replace If Found. |

| Panel title | Description |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CREF Program Entry | Parameter entry panel that starts the Cross Reference (CREF) action to cross reference programs and components in your library and then build the Bill of Materials List. You may supply source program names and set the Entry Options for Immediate, Confirmation, and Addendum. You may also set the Function Option for Display Summary. |
| CREF Summary Report | A one-page summary report you request to identify the source programs and COMPONENT statements that were cross-referenced in your library. |
| DECOMPOSE Detail Report | Detail report that you request at the end of the Decompose action to list statistics about each component decomposed from an executable program. |
| DECOMPOSE Program Entry | Parameter entry panel that starts the Decompose action to update components from an executable program in your library. You may supply executable program names and set the Entry Options for Immediate, Confirmation, and Addendum. You may also set the Function Options for Decompose All, Display Detail, and Display Summary. |
| DECOMPOSE Summary Report | A one-page summary report that shows the decompose statistics and the processing options you selected for the Decompose action. |
| DELETE Trigger Record Entry | The panel that allows you to delete a record from the Trigger File list. You may supply the trigger record sequence number for a single record or a range of records. |
| EDIT Program Entry | Parameter entry panel that starts the Edit action to let you use the Full-Screen Editor (FSE) to view, create, and alter MANTIS programs. This panel lets you supply program names and set the Entry Options for Immediate and Confirmation. You may also set Function Options for Caps, Nulls, Indent, and Scroll. If you designate a new program name from this panel, FSE displays an empty work area where you can enter new program lines; if you designate an existing program name from this panel, FSE displays the program so you can view and/or change it. |
| Error Condition Panel | A panel that shows an error code, message, description, and program name. Refer to <i>MANTIS Messages and Codes, OS/390, VSE/ESA, P39-5004</i> . |

| Panel title | Description |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EXECUTE Trigger Record | Lets you release a trigger record from the Trigger File List to be executed. You may supply the trigger record sequence number for a single record or a range of records. |
| HPO Status Report | The report you may request at the end of the HPO Bind, HPO Check, or HPO Unbind actions to display the status of these actions. |
| MANTIS Facility | The MANTIS menu that makes the Program Design Facility available through the Design a Program option. |
| PROFILE Program Entry | Parameter entry panel that starts the Profile action to show a program's extended profile information. This panel lets you supply program names and set the Entry Options for Immediate and Confirmation. |
| Program Design Facility Menu | The main menu of the Program Design Facility where you can select the options for Program Design, the Component Engineering Facility (CEF), Bind Options, and Utilities. |
| Program Directory List | The list panel that shows your program directory. You may select programs for editing in the Full-Screen Editor (FSE) or select programs for other actions. |
| Prompt for Commands | The list of all valid commands and common dialog actions for the current panel. |
| PURGE Program Entry | The parameter entry panel that starts the Purge action to delete programs from your directory. You may supply program names and set the Entry Options for Immediate and Confirmation. |
| RENAME Program Entry | This parameter entry panel starts the Rename action to let you rename a program from you library to your library, and allows you to change program name, description, and password. This panel lets you supply program names and set the Entry Options for Immediate and Confirmation. You may also set the Function Option for Replace If Found. |
| Reorganize Trigger File | A panel displayed when you reach 99,999 trigger records, or when the sequence number (SeqNo) of the trigger records reaches 99,999. This panel allows you to reorganize your Trigger File. |
| SQLCHECK Program Entry | (DB2 or SQL/DS environment only.) The parameter entry panel that starts the checking of SQL programs. You may supply program names and set the Entry Options for Immediate, Confirmation, and Addendum. You may also set the Function Option for Display Status. |

| Panel title | Description |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SQLBIND Program Entry | (DB2 or SQL/DS environment only.) The parameter entry panel that starts the binding of MANTIS SQL programs. You may supply program names and set the Entry Options for Immediate, Confirmation, and Addendum. You may also set the Function Option for Display Status. |
| SQLUNBIND Program Entry | (DB2 or SQL/DS environment only.) The parameter entry panel that starts the unbinding action for SQL programs. You may supply program names and set the Entry Options for Immediate, Confirmation, and Addendum. You may also set the Function Option for Display Status. |
| Trigger File List | A list panel that displays the trigger records you created when you set the Entry Option for Immediate to N (no) before issuing an action. Records on the Trigger File List can be updated, executed, or deleted. |
| UNBIND Program Entry | The parameter entry panel that starts the HPO Unbind action to replace the HPO-bound version of a MANTIS program with the unbound version. You may supply program names and set the Entry Options for Immediate, Confirmation, and Addendum. You may also set the Function Option for Display Status. |
| UPDATE Program Profile | The update panel that lets you alter a program's description, password, and status, and also allows you to set the selection fields that invoke addendum processing for certain actions. |
| UPDATE Trigger Record | The panel that lets you change Status and Function Options for a specific Trigger Record |
| UPDATE Trigger Record Entry | the panel that lets you specify the trigger record for which you want to alter the Status and Function Options. You may want to supply the trigger record sequence number for a single record or a range of records. |

E

PF keys at installation

This appendix is a quick reference that lists the system default values assigned to PF keys when the Program Design Facility is installed. Although your Master User may alter PF key values, the functions and descriptions remain as shown.

| PF key | Function | Description |
|--------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | HELP | Displays a help panel that explains a specific field, command, message, or lets you change PF key settings for the duration of the current action. |
| 2 | EXHELP | Displays a help panel to explain a specific action/ |
| 3 | EXIT | Terminates the current function and returns a higher-level function. |
| 4 | PROMPT | Shows an online list of the valid commands and actions you may issue from the current panel. |
| 5 | REFRESH | Updates date and time on list panels, restores the Action fields on list panels, and resets the Entry and Function Options on parameter entry panels. |
| 6 | EXECUTE | Executes an action on a parameter entry panel or trigger record. Also updates any changes you made on the UPDATE Program Profile panel. |
| 7 | CONFIRM | Lets you confirm execution of an action (from a parameter entry panel) for a designated program. |
| 8 | FORWARD | (1) Repositions a list forward one panel and (2) retrieves the next record on a browse panel. |

| PF key | Function | Description |
|---------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 | RETRIEVE | Redisplays the last seven commands, one at a time, that you issued from the command line of a panel. |
| 10 | ACTION | Displays the Action Bar across the top of a list panel. Also, turns off a displayed Action Bar. |
| 11 | (not used) | |
| 12 | CANCEL | Allows you to exit from a session with the Program Design Facility, one panel at a time, or to exit from the Action Bar pull-down to the Action Bar. |
| 13 | HELP KEYS | Lists PF keys and lets you change their settings for the duration of the current function. (You may also use KEYSUPDATE.) |
| 14 | (not used) | |
| 15 | MENU | Returns the MANTIS Facility Selection menu (saves Full-Screen Editor changes). |
| 16 | (not used) | |
| 17 | (not used) | |
| 18 | UPDATE | Updates program profile information and trigger records. |
| 19 | LEFT | Moves the columns of a list panel to the left to allow you to view all fields that extend beyond the width of your screen. |
| 20 | RIGHT | Moves the columns of a list panel to the right to allow you to view fields that extend beyond the width of your screen. |
| 21 | COMMAND | Toggles the command line from the top of a panel to the bottom (or from the bottom to the top). |
| 22 | (not used) | |
| 23 | (not used) | |
| 24 | (not used) | |

F

Trigger file JCL

The Trigger file is an external file that hold actions you want to defer for later execution. When you set the Entry Option "Immediate?" to N (no) on a parameter entry panel, the current action is created as a record on the Trigger file. A trigger record includes the action name (like COMPOSE, DECOMPOSE, EDIT) and the designated program name.

Trigger file JCL example

Trigger records can be viewed by selecting the Trigger List option from the Program Design Facility menu. You may then immediately execute one or more trigger records from the displayed Trigger File List. However, you may submit a batch job to execute all trigger records at once that are shown on the list. The following code sample shows the JCL you need for the OS batch job:

```
000001 //JOBNAME JOB . . .
000002 //STEP01 EXEC PGM=MANTISB,REGION=2200K
000003 //STEPLIB DD DSN=(your MANTIS linklib),DISP=SHR
000004 //SETPRAY DD DSN=(your MANTIS cluster),DISP=SHR
000005 //EREF DD DSN=(your EREF cluster),DISP=SHR
000006 //EEPR DD DSN=(your EEPR cluster),DISP=SHR
000007 //ELOG DD DSN=(your ELOG cluster),DISP=SHR
000008 //EHLF DD DSN=(your EHLF cluster),DISP=SHR
000009 //EDPR DD DSN=(your EDPR cluster),DISP=SHR
000010 //ETRG DD DSN=(your ETRG cluster),DISP=SHR
000011 //CSOT DD DUMMY
000012 //SYSPRINT DD SYSOUT=*
000013 //TERMINAL DD SYSOUT=*,DCB=BLKSIZE=133
000014 //SYSUDUMP DD SYSOUT=*
000015 //PRINTER DD SYSOUT=*,DCB=BLKSIZE=133
000016 //KEYBOARD DD *
000017 <PAGESIZE=24X80>;<BLANK=OFF>;ACCT;password
000018 <PF1>
000019 VPF:ADOX_ETRG)_EXECUTE
000020 <PA2>
000021 <PA2>
000022 <PA2>
```

To customize the OS/JCL for your environment, make these changes:

- ◆ Change JOBNAME and job statement parameters in statement 1 to valid values for your installation.
- ◆ Change REGION in statement 2 as necessary for your environment.
- ◆ Change data set names in statements 3–10 to comply with your naming conventions.
- ◆ Change library (ACCT) and password (password) in statement 17 to a valid library and password.

The following code sample shows the JCL you need for the DOS batch job:

```

000001 * $$ JOB JNM . . .
000002 * $$ LST CLASS=A,JSEP=0,DISP=D,DES=(,xxxx)
000003 // JOB MANTISB
000004 // DLBL SETPRAY, 'your SETPRAY cluster',,VSAM
000005 // DLBL EDPR, 'your EDPR cluster',,VSAM
000006 // DLBL EEPR, 'your EEPR cluster',,VSAM
000007 // DLBL EHLP, 'your EHLP cluster',,VSAM
000008 // DLBL ELOG, 'your ELOG cluster',,VSAM
000009 // DLBL EREF, 'your EREF cluster',,VSAM
000010 // DLBL ETRG, 'your ETRG cluster',,VSAM
000011 // ASSGN SYS011,SYSLST
000012 // ASSGN SYS012,SYSLST
000013 // ASSGN SYS010,DISK,VOL=vvvvvv,SHR
000014 // DLBL PARM,'your parm dummy',0,SD
000015 // EXTENT SYS010,vvvvvv,1,0,245,1
000016 // LIBDEF PHASE,SEARCH=your CICS library
000017 // EXEC MANTISB,SIZE=AUTO
000018 <PAGESIZE=24X80>;MASTER;HALOGEN
000019 <PF1>
000020 VPF:ADOX_ETRG_EXECUTE
000021 <PA2>
000022 <PA2>
000023 /*
000024 /&
000025 * $$ EOJ

```

To customize the DOS/JCL for your environment, make these changes:

- ◆ Change the JOB and LST parameters in statements 1 and 2 to acceptable values for your installation.
- ◆ Change data set names in statements 4–10 (and statement 14) to comply with your naming conventions.
- ◆ Change *vvvvv* in the VOL parameter in statement 13 to an acceptable disk volume number for your environment. Change *vvvvv* in the EXTENT statement (statement 15) to the same volume number.
- ◆ Change the LIBDEF in statement 16 to the CICS library for your installation.

G

Using the Line Editor



We recommend that you do not use the Line Editor with the Program Design Facility. The Line Editor does not update the extended entity profile records of the program (which are needed in order for the Program Design Facility to function properly). Because of this, when you use the SAVE, REPLACE, DELETE, and BIND commands with the Line Editor, program integrity can be affected. Each time you access the Line Editor, you will receive a message warning you of this possibility.

The MANTIS Line Editor allows you to create and modify your MANTIS programs line by line. This appendix explains how to create a new program and modify an existing program using the Line Editor. Refer to [“Using the Full-Screen Editor”](#) on page 165 for Line Editor commands.

Accessing the Line Editor

Unless your Master User has added the Line Editor as an option on your MANTIS Facility Selection menu, the only way to access the Line Editor is through the Run a Program By Name option on the MANTIS Facility Selection menu.

To access the Line Editor, select Run a Program By Name from the MANTIS Facility selection menu and run the program CONTROL:LINE_EDIT. When you press ENTER, you will receive the message 'YOU MAY DESTROY PROGRAM PROFILE INTEGRITY IN THE LINE EDITOR - ANSWER "YES" TO CONTINUE' at the bottom of your screen. To access the Line Editor type YES in the bottom left corner of the screen and press ENTER.

Creating a program

When you confirm access to the Line Editor, MANTIS returns the screen shown in the following screen illustration. Your library name appears at the top of the screen. Until you create a new program or retrieve an existing program, your library name is used. When you save or retrieve a program, that program name appears at the top of the screen. Your password is not displayed.



```
PROGRAM ==> user name
```

To create a new program, key in statements at the bottom of the screen and press ENTER. MANTIS scrolls previously entered lines up and repositions the cursor on the bottom line. The maximum length of a program line inserted and modified in the Line Editor is equal to the terminal size minus eight characters.

If you clear the screen (using the NEW or PURGE commands), your sign-on name reappears on the top line. The NEW command clears the work area. The PURGE command deletes the program from your library, but not from your work area (even though the program name is no longer at the top of the screen).

If your program chains to another program, the name of the second program appears. (Note that when you chain to a new program, the chained program replaces the program currently in your work area. Be sure to save any modifications you have made before you perform the CHAIN.)

Remember to save your program before you exit from programming mode.

Modifying a program

You can retrieve a program from the library by using the LOAD command. When MANTIS retrieves the program, the screen displays the new program name as follows:

```
PROGRAM==>program_name
```

This heading disappears when you execute (RUN) a program and reappears when the program terminates. Use the LIST command to list the program as shown in the following example:

```
20
LIST
 10 ENTRY COMPOUND
 30 .SHOW"WHAT IS THE CAPITAL AMOUNT?"
 40 .OBTAIN INVESTMENT
 50 .STOP
 60 EXIT
```

You can delete a single statement by simply keying in the line number and pressing ENTER.

Use the ERASE command to delete a block of statements as shown in the following example:

```
ERASE 30, 50
LIST
 10 ENTRY COMPOUND
 60 EXIT
```

To alter an existing statement, key in the statement number, the modified statement, and press ENTER.

```
22 OBTAIN SAVINGS
LIST
 10 ENTRY COMPOUND
 11 .|THIS IS AN EXAMPLE
 21 .SHOW"WHAT IS THE CAPITAL AMOUNT?"
 22 .OBTAIN SAVINGS
 25 .STOP
 30 EXIT
```

To renumber your statements and leave room for later insertions, use the SEQUENCE command. The following example shows how SEQUENCE renumbers the program shown above:

```
10 ENTRY COMPOUND
11 .|THIS IS AN EXAMPLE
21 .SHOW"WHAT IS THE CAPITAL AMOUNT?"
22 .OBTAIN SAVINGS
25 .STOP
30 EXIT
SEQUENCE
LIST
 10 ENTRY COMPOUND
 20 .|THIS IS AN EXAMPLE
 30 .SHOW"WHAT IS THE CAPITAL AMOUNT?"
 40 .OBTAIN SAVINGS
 50 .STOP
 60 EXIT
```

You can also alter a statement by using the ALTER command. MANTIS displays the specified statement (line 30 below) on the bottom line of the screen. You can move the cursor and change any portion of your statement, without reentering the entire line.

```
ALTER 30
20 SHOW"WHAT IS THE CAPITAL AMOUNT?"
30 SHOW"WHAT IS THE SAVINGS AMOUNT AT PRESENT?"
LIST
10 ENTRY COMPOUND
20 .|THIS IS AN EXAMPLE
30 .SHOW"WHAT IS THE SAVINGS AMOUNT AT PRESENT?"
40 .OBTAIN SAVINGS
50 .STOP
60 EXIT
```

*(You are here:
<-----
keying over
the previous
line)*

Remember to replace your program before you exit programming mode.

Exiting from the Line Editor

To exit from the Line Editor and return to the MANTIS Facility Selection menu, enter the QUIT command. This is the only way to terminate the Line Editor.

See [“Using the Full-Screen Editor”](#) on page 165 for syntax and examples of Line Editor commands.

Glossary of terms

*** (asterisk)**

Entered on parameter entry panels and on the command line as a wildcard character to represent an indefinite number of characters in a generic pattern of program names (e.g., CUST*). In addition, the asterisk is also supplied by the Compose action in the COMPONENT statements and CEND statements for composed programs, for example, |*COMPONENT and |*CEND.

@ (at sign)

The at sign is the default character that you append to a source program name to differentiate it from a composed program name or a component name. When the at sign is appended to a source program name, the Compose action assembles and replaces a composed program with the same name as the source name without the at sign. For example, if your source program is CUST_BROWSE@, and you issue the Compose action on the source program, the resulting composed program name will be CUST_BROWSE. Note that your Master User may alter the at sign to a different default character for your environment.

In addition, the at sign is also coded in the SOURCE statement of an executable program (β@SOURCE) to nominate MANTIS source code changes. Coding a COMPONENT statement with the at sign (β@COMPONENT) nominates that component for the Decompose action.

= (equal sign)

Entered in the Action field of a list panel (below an Action field where a command was entered) as a shortcut to repeat the same command on other list items.

? (question mark)

Entered on parameter entry panels in the From Name field as a wildcard character to represent a single character in a generic pattern of program names (e.g., CUS?).

/ (selection character)

Entered in the Action field of a list panel as a selection indicator to choose one or more programs from the list panel for which an action will be issued. The selection character (/) is also entered in the Select field of the Prompt to choose a valid action.

action

The specific task performed on designated programs, such as Compose, Decompose, CEF Check, CREF, Edit, Purge, and others. You may issue an action by typing a command, selecting from the Program Design Facility menu, choosing from the Action Bar, or pressing a PF key. The ACTION command displays the Action Bar across the top of a list panel.

Action Area

The area at the top of a panel that provides the Action Bar on a list panel. If the Action Bar is not displayed, the Action Area contains a display-only panel ID (upper left corner); a panel title (middle); and current date and time stamp (upper right corner).

Action Bar

The Action Bar is displayed across the top of a list panel to provide the actions that are available for that panel. When you select an action from the Action Bar, the options related to the selected action are displayed as an extension. This extension is a window shown over the panel called the Action Bar pull-down.

Action Bar pull-down

The window displayed as an extension of the Action Bar. The Action Bar pull-down results when you select an action item from the Action Bar. The Action Bar pull-down shows the options associated with the selected action item.

action field

The field of nine underscores (_____) on a list panel where commands can be entered for a specific program displayed on the list panel.

action items

The items displayed on the Action Bar. When you select an item, an Action Bar pull-down is then displayed showing the options associated with the item.

addendum

An Entry Option on parameter entry panels for choosing selective processing on designated programs. Addendum processing issues an action only on programs that changed since the last time that same action was issued on them.

audit

An action that displays the Audit Trail List.

audit attribute information

Information on the UPDATE Program Profile panel and BROWSE Program Profile Records panel that includes selection flags (for addendum processing), date and time of actions, program version, user ID, and terminal ID.

audit trail list

An online list panel that displays the activities performed on a program or component, with the latest program activity shown at the top of the panel.

bill

An action that displays the Bill of Materials List.

bill of materials list

An online list panel built from the Cross Reference (CREF) action to show the components referred to in a source program.

bind

An action that creates an HPO-bound version of a MANTIS program.

bind options

The MANTIS Check, Bind, and Unbind facilities (for HPO and SQL programs) that are available from the Program Design Facility menu.

browse

An action that displays the BROWSE Program Profile panel to let you scroll through profile information for each program in your directory.

browse audit trail

The utility that lets you browse through each record on the external Entity Log to view audit trail information for program activity in your library.

browse program profile

The utility that lets you browse through each program in your directory to view program profile information.

cancel

A common dialog action that allows you to exit from a session with the Program Design Facility, one panel at a time, or to exit from the Action Bar pull-down to the Action Bar.

CEF

See Component Engineering Facility.

CEF check

An action that identifies the program components and source code that changed since the last Compose was issued on a source program.

CEND statement

The statement that CEF generates to mark the end of individual component code in a composed program. CEND (component end) statements are generated only if the COMPONENT statements in the composed program are commented by specifying COMMENTS=YES (parameter in the CSIOPTNS statement) or by setting the Function Option “Component stmt?” to Y (yes) on the COMPOSE Program Entry panel.

change control

The date and time stamps that CEF tracks to ensure program and component integrity. Date and time appear in several locations in CEF to support the Program Design Facility actions and to provide accurate reporting about program changes.

check

An action that checks an HPO-bound program to determine if any programs or components changed since the last time the program was bound.

clear

A common dialog action that supports the 3270 hardware feature to clear a panel of the data you typed.

command

An action that you enter on the command line of a panel or in the Action field of a list panel to interact with CEF. A command can be made up of an action (COMPOSE, DECOMPOSE, and others) and an operand (program name). Examples are COMPOSE CUST_UPDATE@ and EDIT CUST_BROWSE. Certain commands allow you specify library, password, and description. In addition, the COMMAND command is a common dialog action that toggles the command line from the top of your panel to the bottom (or from the bottom to the top).

command help

An information panel that explains a specific CEF command.

command line

The area on a CEF panel (identified by the symbol ==>) where you can enter CEF commands (like COMPOSE, DECOMPOSE, COPY) or common dialog actions (like EXHELP, EXIT, HELP).

comments

A keyword parameter in the CSIOPTNS statement for a source program. The format is COMMENTS=YES or COMMENTS=NO. If YES, the COMMENTS parameter will comment the COMPONENT statements in a composed program and will generate a |*CEND statement to mark the end of individual component code. If NO, components in the composed program will be framed by their first and last statements only.

common dialog action

One of several actions that has the same meaning on all CEF panels that display a command line. The common dialog actions are: CANCEL, CLEAR, COMMAND, EXHELP, EXIT, HELP, KEYSUPDATE, LOGOFF, MENU, PROMPT, REFRESH, and RETRIEVE. Common dialog actions are displayed on the Prompt list.

component

A MANTIS subroutine that is common to more than one program. Components can be used and reused as necessary as “building blocks” of code throughout an application. Components can be framed by ENTRY and EXIT statements (although this is not required), and they are stored in a library like other MANTIS programs. Components are identified in source programs by the COMPONENT statement. When the Compose action is issued on the source program, the COMPONENT statement is expanded into component code in the resulting composed program.

component engineering

A software design methodology that lets you create reusable components as “building blocks” in your application design.

Component Engineering Facility (CEF)

The MANTIS facility that allows you to include reusable components as the “building blocks” in a structured and modular design. In CEF, source programs and their components are assembled into composed programs that can be edited and executed. In addition, executable programs can be decomposed into source code and component code. CEF uses the actions of CEF Check, Compose, Decompose, CREF (Cross Reference), and the Bill of Materials List.

COMPONENT statement

A statement coded in a source program to identify a component. Any COMPONENT statements are assembled by the Compose process into expanded component code in a composed program.

component stmt

A Function Option on the COMPOSE Program Entry panel that creates a commented COMPONENT statement and CEND statement in a composed program.

component where used list

An online list panel built from the Cross Reference (CREF) action to show the source programs that use a component.

compose

An action that assembles a MANTIS source program and its COMPONENT statement(s) into a composed program with expanded component code.

composed program

A MANTIS program containing source code and component code that is the result of issuing the Compose action on a source program. Composed programs are executable programs that can be edited and executed. Composed programs also have a source program version of MANTIS source code and COMPONENT statements on which the Compose action was issued. See Executable Program and Source Program.

confirm

An action that lets you confirm execution from a parameter entry panel.

confirmation

(1) An Entry Option on the parameter entry panels that determines whether a confirmation message will be displayed or bypassed for each program to be processed. (2) A field on the COMPOSE Confirmation panel that allows you to force the Compose action on the displayed source program or bypass composing it.

copy

The action that copies the contents of a program from your library (or another library) to a program in your library, and allows you to change program name, description, and password.

create trigger

A Function Option on the CEFCHECK Program Entry panel that lets you choose whether a COMPOSE record will be created on the Trigger file.

cref

See Cross Reference.

cross reference (CREF)

An action that reads components and programs from your directory, cross references them, and builds the Bill of Materials List and Component Where Used List from the cross reference.

CSIOPTNS statement

An optional statement coded in your source program to control execution of the Compose action by specifying the settings for the COMMENTS, FORCE, and SEQUENCE parameters.

decompose

An action that disassembles an executable MANTIS program into individual components and then updates program libraries with source changes and component changes.

decompose all

A Function Option on the DECOMPOSE Program Entry panel that lets you decompose all components in an executable or composed program, even if you did not change them or nominate their COMPONENT statements for decomposing.

delete

An action that deletes a record from the Trigger file only. DELETE does not delete a program from your directory.

detail reporting

The online report you request to be generated at the end of the CEF Check and Decompose actions to display the results of these actions on designated programs and components. If you issue CEF Check and Decompose in batch, the detail reports will be printed. See Summary Reporting.

display detail

A Function Option on the CEFCHECK Program Entry panel and the DECOMPOSE Program Entry panel that shows a detailed report at the end of these actions.

display status

A Function Option on the CHECK Program Entry panel, BIND Program Entry panel, and UNBIND Program Entry panel that lets you generate a status report at the end of these actions.

display summary

A Function Option on the parameter entry panels for the CEF Check, Compose, Decompose, and CREF actions that lets you generate a summary report at the end of these actions.

edit

An action that starts a session with the Full-Screen Editor (FSE) where you can view, create, and modify MANTIS programs.

entry field

A field on a panel in which you supply information. Examples of entry fields are Action fields on list panels, From and Thru (or From and To) fields on parameter entry panels, and Entry and Function Options on parameter entry panels.

entry options

Common options on parameter entry panels that let you define how an action will be processed. For example, Entry Options give you the choice of online or batch processing, confirmation messages, and addendum processing. Entry Options are set to system default values at installation that can be customized by your Master User. You may change these settings for the duration of the current action.

error code condition panel

A panel displayed to show the error code and its related message text. For example, an Error Code Condition panel is displayed when a Compose action is attempted on a source program that contains a COMPONENT statement for a nonexistent component.

errors

A process statistic on parameter entry panels that is incremented by 1 each time an error condition is encountered when the action for that panel is executed.

executable program

Any program that can be executed in MANTIS. An executable program that is the result of the Compose action, is called a “composed” program. See Composed Program and Source Program.

execute

An action that executes a trigger record, parameter entry panel, or updates the program profile.

exhelp

The common dialog action for extended help. When issued, EXHELP displays a help panel that explains a specific action.

exit

A common dialog action that terminates the current function and returns a higher level function. For example, exiting from the Program Directory List takes you back to the Program Design Facility menu.

extended entity profile record (EEPR)

An external VSAM file that stores program profile history information. The EEPR contains the following data: program information (description, password, status, date and time of last change, terminal ID, user ID, and version number); CEF information (Check, Compose and Decompose); and Bind information (Check, Bind, Unbind) for HPO and SQL bound programs. Information about CREF (Cross Reference) data is not included on the EEPR because CREF data applies only to the source cluster.

extended help

One or more information panels explaining an action. The command for displaying extended help is EXHELP.

field help

One or more information panels describing a specific field on a panel. Field help is available for data entry fields and for display fields.

force

A keyword parameter of the CSIOPTNS statement with the options of FORCE=YES or FORCE=NO. If NO, the FORCE parameter lets you display the Compose Confirmation panel (when there are changes made to a composed program since the last time its source program was composed). If YES, the confirmation panel is bypassed and the Compose action will be executed (forced).

force compose

A Function Option on the COMPOSE Program Entry panel that lets you accept or override the setting of the FORCE parameter in the CSIOPTNS statement.

forward

An action that (1) repositions a list forward one panel, and (2) retrieves the next record on a browse panel.

Full-Screen Edit Profile

Allows you to temporarily change information that controls an editing session. You can change current PF key settings and edit mode settings (CAPS ON, NULLS, INDENT, and SCROLL). Any changes you make to these settings are not saved and will be reset to the system default when you exit from the Full-Screen Editor.

Full-Screen Editor (FSE)

Provides facilities for creating and modifying MANTIS programs using the logical screen support of the Logical Terminal Interface (LTI). FSE is accessed through the Edit Option on the Program Design Facility menu.

Full-Screen Editor work area

The panel where you create and modify MANTIS programs. You access the Full-Screen Editor work area by entering the Edit option number or EDIT command followed by a new or existing program name on the command line of the Program Design Facility menu. You can also select an existing program from the Program Directory List and the program will be displayed in the Full-Screen Editor work area. You will also receive the work area if you issue the NEW command during an edit session.

function key

The program function (PF) keys that issue a specific action. PF keys are displayed at the bottom of panels and can be changed for the duration of the current action. Your Master User can permanently customize PF key settings for each user. Examples of PF keys are F1=HELP, F2=EXHELP, F3=EXIT, and F4=PROMPT.

Function Key Area

The area at the bottom of your panel where function key numbers and their settings are displayed.

Function Key Area help

An information panel that explains how to use the function key line and the PF keys.

function options

Options on parameter entry panels that control the way the specific action will be executed. For example, Function Options on the COMPOSE Program Entry panel determine how the Compose action will be executed. Function Options are generally unique for each parameter entry panel and are set to system default values at installation that can be customized permanently by your Master User. You may change these settings for the duration of the current action.

generic pattern

A partial program name that uses the wildcard characters of asterisk (*) to represent an indefinite number of characters and the question mark (?) to represent a single character. Examples are CUST* and CUS?. You supply the partial program name with wildcard characters in the From Name field of a parameter entry panel. When you issue the action, individual programs that match the selection criteria of the generic pattern are processed. For example, the program CUST_BROWSE will be processed if the generic pattern CUST* is designated.

group heading

The four major groups on the Program Design Facility menu: Program, Component Engineering, Bind Options, and Utilities. Several options associated with each group heading appear on this menu panel. For example, the Program group heading on the menu panel consists of the options List, Edit, Profile, Purge, Copy, and Rename.

help

The common dialog action for field-specific help. When issued, HELP displays a help panel that explains a specific field (based on cursor position). HELP can also display a help panel for a command or message, or HELP can display the KEYSTEMP panel where you may alter PF keys.

HPO bind

The function that creates a new bound version of a MANTIS program.

HPO check

The function that checks an HPO-bound program to determine if any programs or components changed since the last time the program was bound.

HPO status report

The report you request to view at completion of an HPO check, bind, or unbind process to indicate the status of the process.

HPO unbind

The function that replaces the bound version of a MANTIS program with the unbound version.

immediate

An Entry Option on the parameter entry panels that lets you determine whether an action will be executed immediately or written to the Trigger file and deferred for later processing.

indent on

A Function Option on the EDIT Program Entry panel that indents program lines displayed on the Full-Screen Editor screen to indicate nesting hierarchy in your program code.

keyupdate

A common dialog action that displays the list of PF keys settings that you can changes for the duration of the current action.

L

The L (locate) command repositions a list panel to a specific program or component.

left

An action that moves the columns of a list panel to the left to allow you to view all fields that extend beyond the width of your screen.

line commands

FSE commands that accept the line(s) on which they are entered. Line commands include editing commands (move, copy, etc.) as well as destination commands (after, before, etc.).

Line Editor

Allows you to create and modify MANTIS program line by line. Note that due to program profile integrity considerations, it is not recommended that you use the Line Editor with the Program Design Facility.

list

The term “list” has two meanings in the Program Design Facility. First, as an action, List is one of the Program Design options on the Program Design Facility menu that lets you display your Program Directory List. Second, a list is a type of panel in which programs or records are presented in order, along with additional, extended information provided by the system for reference. The list panels are the Program Directory List, Bill of Materials List, Component Where Used List, Audit Trail List, and Trigger File List.

logoff

A common dialog action that lets you exit from MANTIS. If you are working in the Full-Screen Editor when you issue LOGOFF, your changes are saved.

message help

One or more information panels describing a specific, 3-character message code (such as U31 or F02).

menu

A common dialog action that lets you return to the MANTIS Facility Selection menu. If you are working in the Full-Screen Editor when you issue MENU, your changes are saved.

mnemonic

A 1-character code that displays an Action Bar pull-down. For example, entering P (for program) in the Selection field of the Action Bar displays the Action Bar pull-down for Program Design.

nominate

Marking COMPONENT statements in an executable or composed program by replacing the asterisk (*) with the at sign (@), for example, |@COMPONENT. Nominating a component indicates to the Decompose action that the component code was modified, and it will be decomposed and updated on your user library. If MANTIS source code changes, the SOURCE statement in the executable program must be nominated for the Decompose action to recognize source code changes, for example, |@SOURCE. You may make changes to the source code without changing any components.

notification message

An information or status message that appears at the bottom of your panel, for example, 001: READY or F03: MORE RECORDS FOLLOW.

nulls on

A Function Option on the EDIT Program Entry panel that lets you choose trailing nulls or trailing blanks for the lines on your Full-Screen Editor screen.

panel

A grouping of information arranged in a particular design on a screen. The Program Design Facility uses several types of panels: menu panel, list panel, parameter entry panel, and information panel. Each panel contains an Action Area, Panel Body, and PF key area.

Panel Body

The section of your panel below the Action Bar and above the PF key area. This area contains the fields that pertain to the panel and function, such as the entry fields of a parameter entry panel and the list of programs on the Program Directory List.

parameter entry panel

A type of panel that starts an action. Entry panels allow you to specify a program name, a range of program names, a generic pattern, Entry Options, and Function Options. Generally, parameter entry panels can be bypassed by supplying a program name when you request the action, for example, entering COMPOSE CUST_BROWSE@ on the command line of the Program Design Facility menu. If you do this, the default values for the Entry and Function Options for the specific action (Compose in this example) will be used during execution.

primary commands

FSE commands that include global editing command (e.g., FIND, CHANGE, etc.). Primary commands are entered on the command line of the Full-Screen Editor work area. See Line Commands.

process statistics

The display fields on parameter entry panels that include Processed, Replaced, Skipped, and Errors. These fields show the results of an action by incrementing by 1 each time a program is executed successfully, replaced (Copy and Rename only), skips execution, or meets an error condition during execution.

processed

A process statistic on parameter entry panels that is incremented by 1 each time a program is successfully processed for a specific action.

profile

An action that displays extended profile information for a program and provides an update function for changing program status, description, and password. In addition, Profile also shows a program's audit attribute information (selection fields, date and time stamps, program versions, user ID, and terminal ID).

program design facility

The MANTIS facility that includes enhanced Program Design options, HPO and SQL options, specific program and audit trail utilities, operations using a Trigger file, and the Component Engineering Facility (CEF) for application design.

program design facility menu

The main menu of the Program Design Facility. Group headings on this menu panel include Program, Component Engineering, Bind Options, and Utilities. Several options are listed under each of these headings on the menu panel for selecting and issuing actions.

program directory list

An online list panel of the programs in your directory, shown in alphabetic order by name. Extended profile information about each program is also provided on the Program Directory List for description, date of change, time of change, version number, and status.

program range

A block of program names you designate for processing from a parameter entry panel. You supply the starting name (From Name field) and the ending name (Thru Name field) of the range to be processed. Starting program name, ending program name, and the names that fall between the two will be processed by the action.

Prompt

A common dialog action that displays the current list of all valid common dialog actions and commands for a panel. The Prompt list includes and common dialog actions (common to panels) and function commands (specific to the current function only). You may select an action or command with the selection character (/). When you exit from the Prompt list, your selection is executed.

Prompt subset

A search on the Prompt using the wildcard characters of "*" and "?" to display a partial Prompt list of function commands and common dialog actions that meet the wildcard search criteria.

purge

An action that purges a program from your directory. The PURGE command does not purge a record from the Trigger file.

refresh

A common dialog action that updates date and time on list panels, restores the Action fields on list panels, and resets Entry and Function Options on parameter entry panels.

rename

An action that renames a program from your library to your library, and allows you to change program name, description, and password.

replace if found

A Function Option on the COPY Program Entry panel and the RENAME Program Entry panel that lets you choose whether the system will overlay (replace) a program found in your library that has the same name as the target program you designate for the Copy or Rename action.

REPLACE statement

A statement coded in the source program for the Component Engineering Facility (CEF) that names the library, program, password, and description to be created or replaced as the executable program by the Compose action.

replaced

The process statistic that appears on the COPY Program Entry panel and RENAME Program Entry panel only. The Replaced field indicates the number of programs replaced in the To Library for the Copy and Rename actions. Note that you can only copy into, or rename in, your user library.

retrieve

A common dialog action that redisplayes the last seven commands, one at a time, issued from the command line of a panel.

right

An action that moves the columns of a list panel to the right to allow you to view all fields that extend beyond the width of your screen.

S (select) line command

The S (select) line command is a Full-Screen editor command that works with CEF to allow you to select a COMPONENT or REPLACE statement from a source program to be edited in the Full-Screen Editor, or to select a SOURCE statement from a composed program to be edited.

scroll (P H C)

A Function Option on the EDIT Program Entry panel for setting the vertical forward and backward scrolling amount for your Full-Screen Editor session. These amounts include scrolling by a full page (P), a half page (H), or from the line where the cursor is currently positioned to the top of the screen (C).

selection field

The field of three underscores () on the Program Design Facility menu that is used for the selection of displayed option numbers.

sequence

A keyword parameter in the CSIOPTNS statement for a source program. The SEQUENCE parameter lets you specify how the line numbers in a composed program are sequenced before the program is replaced. The system default value is SEQUENCE 10,10.

skip

An action that bypasses execution on a parameter entry panel.

skipped

A process statistic on the parameter entry panels that shows the number of programs skipped and not executed by an action. The Skipped field is a display field that is incremented by 1 when a program with a status other than ACTIVE is encountered, or when you issue SKIP to bypass processing a specific program.

source program

A MANTIS program of source code and at least one COMPONENT statement. Source programs are not executable. The Compose action is issued on a source program to assemble (compose) it into a composed program of source code and expanded component code that you can edit and run. See Composed Program and Executable Program.

SOURCE statement

A Component Engineering Facility (CEF) statement that is coded in an executable program to name the library, program, password, and description of the source program to be created or replaced by the Decompose action.

SQL bind

For DB2 and SQL/DS environments only: Static: Places information about a program's SQL statements and their host variables into an internal file to create an SQL support module for static execution of the program. Extended Dynamic: Dynamically creates an SQL/DS access module for the program, saves information about SQL statements and host variables, and makes the program immediately executable at the end of the bind.

SQL check

For DB2 and SQL/DS environments only: **Static:** Determines if a program and its corresponding SQL support load module are consistent. **Extended Dynamic:** Determines if the program and its corresponding SQL/DS access module are consistent.

SQL maint

For DB2 environments only: Displays the SQL Bind Information panel and allows you to view and/or purge the information.

SQL unbind

For DB2 and SQL/DS environments only: **Static:** Marks the program as not SQL bound and deletes the SQL bind information from the internal file. **Extended Dynamic:** Marks the program as not SQL bound, removes additional information from the MANTIS cluster about SQL statements and host variables contained in the program, and deletes the associated SQL/DS access module.

status reporting

The online report you request to be generated at the end of the HPO Check, HPO Bind, and HPO Unbind processes that shows the results of processing. If you issue these actions in a batch job, the reports will be printed.

summary reporting

The online report you request to be generated at the end of the CEF Check, Compose, Decompose, and Cross Reference (CREF) actions to display totals and summary information for these actions. If you issue these actions in batch, the summary reports will be printed. See Detail Reporting.

trigger file

An external file that holds records of the actions you issued for later online or batch execution. Trigger records include the action you issued and the program name(s) on which the action will be executed. You may view trigger records online and execute individual records, or you may submit a batch job to execute all records on the Trigger file.

trigger file list

The Utilities Option on the Program Design Facility menu that displays a list panel of the trigger records you created. You can issue commands in the Action field of this list panel to update, delete, or execute individual records. You may also submit a batch job to execute all trigger records on this list.

unbind

An action that replaces the HPO-bound version of a MANTIS program with the unbound version.

update

An action that updates program profile information and trigger records.

uppercase

A Function Option on the EDIT Program Entry panel and the Full-Screen Edit Profile to indicate whether MANTIS will treat displayed data as uppercase or lowercase.

utilities

The group heading on the Program Design Facility menu that includes the actions for audit trail reporting, browsing audit trail records, browsing individual program profile records, and viewing and maintaining the Trigger file.

wildcard

The asterisk (*) used to represent an indefinite number of characters and the question mark (?) used to represent a single character in a generic pattern of program names. Enter a generic pattern using these wildcard characters in the From Name field of a parameter entry panel to designate the programs to be processed, if they match the criteria of the wildcard characters. For example, CUST* processes all CUST programs; CUS? processes all programs with 4-character names beginning with CUS.

Index

*

* (asterisk), wildcard character 60

/

/ (selection character) 42, 49

?

? (question mark) *See*
wildcard characters
abbreviation for RETRIEVE
command 133
wildcard 60

@

@ (at sign)
naming convention for
composed programs
305, 306
nominating components for
decompose 327
recognized by the
REPLACE statement
308

=

= (equal sign), selecting
programs using 52

A

A (after), FSE command 207
Action Area 32
Action Bar 39
pull down 40
selecting action bar item
40
selecting from action bar
pull down 40
using 40
action, issuing 47
ACTION, Program Design
Facility command 89
addendum processing 156
ALTER, FSE command 209
audit trail 392–96
AUDIT, Program Design
Facility command 90

B

B (before), FSE command
211
Bill of Materials List 357–61
BILL, Program Design
Facility command 91
BIND
FSE command 213
Program Design Facility
command 92
Bind Options
HPO status codes 380
HPO status report 379
overview of 365
SQL options 381
BIND Program Entry panel
377
binding
MANTIS
statements/functions
368
programming
consideration for, with
High-Performance
Option (HPO) 368
BOTTOM, FSE command
216
browse
Audit Trail List 397
Program Profile 398
BROWSE
Program Design Facility
command 93

- C**
- C (copy), FSE command 217
- CANCEL
 - FSE command 219
 - Program Design Facility command 94
- case
 - setting, EDIT Program Entry panel 149
 - setting, Full-Screen Edit Profile 186
- CEF (Component Engineering Facility)
 - definition 21
 - diagram 24
 - field descriptions 448
 - overview of features 23
 - overview of process 300
 - sample program 299
- CEF Check
 - CEFCHECK Detail Report 345
 - CEFCHECK Program Entry 343
 - CEFCHECK Summary Report 348
 - description of 341
 - function options 344
 - overview of panels 342
 - selecting 343
 - Trigger file use 344
- CEF statements *See* Component Engineering statements
- CEFCHECK, Program Design Facility command 95
- CHANGE, FSE command 220
- CHECK, Program Design Facility command 96
- CLEAR, Program Design Facility command 97
- COMMAND, Program Design Facility command 98
- commands (Program Design Facility) *See* Program Design Facility commands
- COMMENTS parameter 310
- common dialog actions, definition 44, 45
- component
 - description 300
 - naming conventions 303
 - nominating 306
 - reusing 327
 - Where Used List 362
- Component Engineering Facility (CEF (Component Engineering Facility))
- components
 - modifying 305
- compose
 - COMPOSE command 52
 - Compose Confirmation Panel 322
 - COMPOSE Program Entry 318
 - COMPOSE Summary Report 320
 - description of 315, 316
- COMPOSE, Program Design Facility command 99
- composed programs
 - decomposing 327
 - definition of 300
- CONFIRM, Program Design Facility command 100
- COPY
 - FSE command 226
 - Program Design Facility command 101
- Copy Option
 - COPY Program Entry Panel 160
 - description 160
 - function option 160
 - starting 160
- CREF (Cross Reference)
 - CREF program Entry panel 354
 - CREF Summary Report 356
 - description of 354
- CREF, Program Design Facility command 104
- Cross Reference (CREF) *See* CREF
- CSIOPTNS statement 312–13

D

decompose
 composed programs 331
 DECOMPOSE command
 327
 DECOMPOSE Detail
 Report 335
 decompose panels
 overview 332
 DECOMPOSE Program
 Entry panel 333
 DECOMPOSE Summary
 Report 338
 description of 326
 executable programs 329
 DECOMPOSE, Program
 Design Facility
 command 106
 decomposed
 nominating components
 327
 DELETE
 FSE command 229
 Program Design Facility
 command 108
 DOWN, FSE command 231

E

Edit
 description 149, 165
 EDIT Program Entry panel
 149, 166
 EDIT Program Profile
 Panel, function options
 150, 168
 selecting 166
 EDIT, Program Design
 Facility command 110
 END, FSE command 233

ERASE, FSE command 234
 ERRCODE, FSE command
 236
 error condition panel 84
 ET, Program Design Facility
 command 113
 executable programs,
 modifying 329
 EXECUTE, Program Design
 Facility command 114
 EXHELP, Program Design
 Facility command 116
 EXIT, Program Design
 Facility command 117
 extended help 81

F

fields, detailed descriptions
 441
 FIND, FSE command 237
 FORCE parameter 312
 FORWARD, Program
 Design Facility
 command 118
 FSE (Full-Screen Editor)
 commands See Full-
 Screen Editor (FSE)
 commands
 Full-Screen Edit Profile
 setting 195
 uppercase/lowercase
 support set on 196
 Full-Screen Editor (FSE)
 accessing 166
 creating a program 168
 line commands for 190
 modifying a program 176
 primary commands for 185
 profile 195
 quick reference 507

Full-Screen Editor (FSE)
 commands 207
 A (after) 207
 ALTER 209
 B (before) 211
 BIND 213
 BOTTOM 216
 C (copy) 217
 CANCEL 219
 CHANGE 220
 COPY 226
 DELETE 229
 DOWN 231
 END 233
 ERASE 234
 ERRCODE 236
 FIND 237
 HELP 243
 I (insert) 245
 LEFT 248
 LIST 250
 LOAD 252
 LOCATE 254
 LOGOFF 256
 M (move) 257
 MENU 259
 NEW 260
 O (overlay) 262
 PRINT 264
 PROFILE 265
 PURGE 267
 QUIT 269
 R (repeat) 270
 RCHANGE 272
 REPLACE 274
 RESET 277
 RFIND 279
 RIGHT 281
 RUN 283
 S (select) 285
 SAVE 289
 SCROLL 291
 Sequence 293
 TOP 294
 UP 295
 USAGE 296
Function Key Area 32, 38
Function Key Area help 83

H

HELP
 FSE command 243
 Program Design Facility
 command 119
help for help panels 83
HELP KEYS 53
help panels
 MORE indicator 43
 types 80
HPO (High-Performance
 Option) See High-
 Performance Option
 (HPO)

I

I (insert), FSE command 245

J

JCL, for Trigger file 519

K

KEYSTEMP panel 53
KEYSUPDATE, Program
 Design Facility
 command 121

L

L (Locate), Program Design
 Facility command 122
LEFT
 FSE command 248
 Program Design Facility
 command 123
line commands, using in
 FSE 190
Line Editor, program integrity
 considerations for 165
LIST
 FSE command 250
 Program Design Facility
 command 124

list panels

- Audit Trail List 392
- Bill of Materials List 357
- Component Where Used List 362
- Program Directory List 145, 177
 - selecting from 68
 - Trigger File List 400
 - types of 67
- LOAD, FSE command 252
- LOCATE, FSE command 254
- LOGOFF
 - FSE command 256
 - Program Design Facility command 146

M

- M (move), FSE command 257
- MENU
 - FSE command 259
 - Program Design Facility command 127
- menu panel 65
- message line 37
- MORE indicator 43

N

- NEW, FSE command 260

O

- O (overlay), FSE command 262

P

panels

- Audit Trail List 392
- Bill of Materials List 357
- body 31
- BROWSE Audit Trail Records 397
- BROWSE Program Profile Record 398
- CEFCHECK Program Entry 343
- Compose Confirmation Panel 322
- COMPOSE Program Entry 318
- COPY Program Entry 160
- CREF Program Entry 354
- DECOMPOSE Program Entry 333
- DELETE Trigger Record Entry 406
- design 31
- detailed descriptions 441
- EDIT Program Entry 149
- EXECUTE Trigger Record Entry 411
- help panels 79
- HPO Status Report 379
- KEYSTEMP 53
- PROFILE Program Entry 152
- PURGE Program Entry 158
- reference list 511
- RENAME Program Entry 162
- Reorganize Trigger File 424
- Trigger File List 401
- types of 64
- UPDATE Program Profile 154
- UPDATE Trigger Record 416

- parameter entry
 - fields 75
 - panels 73
 - primary commands, using in
 - FSE 185
 - PRINT, FSE command 264
 - PROFILE
 - FSE command 265
 - Program Design Facility
 - command 128
 - profile option
 - description 152
 - PROFILE Program Entry
 - Panel 152
 - starting 153
 - Program Design Facility
 - description 21
 - features 23
 - overview of options 21
 - Program Design Facility
 - commands 85
 - ACTION 89
 - AUDIT 90
 - BILL 91
 - BIND 92
 - BROWSE 93
 - CANCEL 94
 - CEFCHECK 95
 - CHECK 96
 - CLEAR 97
 - COMMAND 98
 - COMPOSE 99
 - CONFIRM 100
 - COPY 101
 - CREF 104
 - DECOMPOSE 106
 - DELETE 108
 - EDIT 110
 - ET 113
 - EXECUTE 114
 - EXHELP 116
 - EXIT 117
 - FORWARD 118
 - HELP 119
 - KEYSUPDATE 121
 - L (Locate) 122
 - LEFT 123
 - LIST 124
 - LOGOFF 126
 - MENU 127
 - PROFILE 128
 - PROMPT 129
 - PURGE 130
 - REFRESH 131
 - RENAME 132
 - RETRIEVE 133
 - Right 134
 - SKIP 135
 - SQLBIND 136
 - SQLCHECK 137
 - SQLMAINT 138
 - SQLUNBIND 139
 - UNBIND 140
 - UPDATE 141
 - Program Directory List
 - moving around list 147
 - selecting from 148
 - Program Function (PF) Keys
 - at installation 517
 - changing 53
 - programs
 - composed 315
 - creating, in FSE 168
 - cross referencing with
 - CREF 352
 - executable 329
 - modifying, in FSE 176
 - source 300
 - Prompt
 - common dialog actions 44
 - description 41
 - displaying prompt list 42
 - function commands 44
 - PROMPT command 42
 - PROMPT, Program Design Facility command 129
 - PURGE
 - FSE command 267
 - Program Design Facility
 - command 130
 - Purge Option description 158
 - PURGE Program Entry
 - Panel 158
 - starting 159
- Q**
- QUIT, FSE command 269

R

R (repeat), FSE command
270

RCHANGE, FSE command
272

REFRESH, Program Design
Facility command 131

Rename option 162–63

RENAME, Program Design
Facility command 132

reorganize Trigger File panel
424

REPLACE statement
definition of 311
overview of 309

REPLACE, FSE command
274

RESET, FSE command 277

RETRIEVE, Program Design
Facility command 133

RFIND, FSE command 279

RIGHT
FSE command 281
Program Design Facility
command 134

RUN, FSE command 283

S

S (select)
FSE command 285
in source program 313

SAVE, FSE command 289

SCROLL, FSE command
291

Select (S) Line Command
See S (select) line
command

selection character (/) 42, 49

SEQUENCE parameter 312

SEQUENCE, FSE command
293

SKIP, Program Design
Facility command 135

source program
definition of 300
naming conventions for
308

SOURCE statement, in an
executable program
330

SQL (Structured Query
Language) Bind
Options
SQLBIND command 136
SQLCHECK command 137
SQLMAINT 138
SQLUNBIND command
139

SQLBIND, Program Design
Facility command 136

SQLCHECK, Program
Design Facility
command 137

SQLMAINT, Program Design
Facility command 138

SQLUNBIND, Program
Design Facility
command 139

T

TOP, FSE command 294

Trigger File
batch processing 421
commands 405
creating records on 399
deleting records on 406
executing records on 411
JCL (OS/DOS) for batch
520
list 399, 400
online processing 400
record profile report for
batch 423
Reorganize Trigger File
panel 424
selecting 399
updating records on 416

U

- UNBIND, Program Design
 - Facility command 140
- UP, FSE command 295
- UPDATE, Program Design
 - Facility command 141
- updating
 - program profile 154
 - trigger file 416
- uppercase/lowercase
 - support
 - setting on EDIT Program Entry panel 150
 - setting on Full-Screen Edit Profile 195
- USAGE, FSE command 296
- utilities, overview of options 391

W

- Where-Used List
 - (Component) 362
- wildcard characters
 - unavailability with
 - COPY Program Entry panel 161
 - RENAME Program Entry panel 163
 - using with
 - COMPOSE command 99
 - CREF command 105
 - DECOMPOSE command 107
 - EDIT command 112
 - EDIT Program Entry panel 183
 - EXECUTE command 115
 - PURGE command 130
 - RENAME command 132
 - SQLBIND command 136
 - SQLCHECK command 137
 - SQLMAINT command 138
 - SQLUNBIND command 139
 - UNBIND command 140
 - UPDATE command 142