

# Cincom

## **AD/ADVANTAGE**

MANTIS Facilities  
OS/390, VSE/ESA

P39-5001-00



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## AD/Advantage® MANTIS Facilities OS/390, VSE/ESA

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# About this book

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## 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 the Object Design, Prototyping, and Print facilities.

### Document organization

The information in this manual is organized as follows:

#### **Chapter 1—Overview of MANTIS facilities**

Provides a brief description of the MANTIS facilities, how to sign on to MANTIS, and introduces MANTIS programming fundamentals.

#### **Chapter 2—Designing screens**

Explains how to use each Screen Design Facility menu option, and includes information on moving around the facility and using commands and field descriptions.

#### **Chapter 3—Designing file views**

Describes how to use the file view design facilities to create, save, update, and maintain MANTIS (internal) file views, TOTAL file views, and external file views.

#### **Chapter 4—Designing prompters**

Describes how to design and use prompters to present online help information to users.

#### **Chapter 5—Designing interfaces**

Describes how to use the Interface Design Facility to design and save new interface profiles and to update and perform maintenance functions on existing interface profiles.

#### **Chapter 6—Transferring entities**

Describes how to use the Transfer Facility to transfer MANTIS entities between users of the same and different systems.

### **Chapter 7—Additional facilities**

Provides instructions for using facilities to run a program by name, display a prompter, sign on as another user, Directory or print.

### **Chapter 8—Batch processing**

Describes Batch MANTIS, the Batch Access subroutine, and the Batch Dialog Facility, which allow you to perform operations in volume and without the continual supervision *required* by online processing.

### **Chapter 9—Using export facilities**

Describes Universal Export Facility (UEF) and transferring entities from on MANTIS cluster to another.

### **Chapter 10—Using search facilities**

Describes MANTIS Search Facility (MSF) and accessing, searching and running MSF in Batch MANTIS.

### **Appendix A—Using the Old Interface Design Facility**

Contains information on using the Old Interface Design Facility for interfaces designed in MANTIS 4.0 and earlier.

### **Appendix B—Recovery**

Describes MANTIS-generated COMMIT points and user-specified COMMIT points.

### **Appendix C—Using edit masks to format numeric fields**

Describes edit masks—edit characters you use to format a numeric data field. You use edit masks mainly for formatting output fields.

### **Appendix D—Accessing logical views using SUPRA RDM**

Describes how to access SUPRA logical views using the SUPRA Relational Data Manager.

### **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>b</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         [row][,col] ] </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>(argument, ...)</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  ; semicolon  ' single quotation mark  " " double quotation marks</p>	[LET] <sub><i>i</i></sub> [ <sup><i>i</i></sup> / <sub><i>i, j</i></sub> ] [ROUNDED( <i>n</i> )] = <i>e1</i> [, <i>e2</i> , <i>e3</i> ...]

## 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.

### Getting started

#### MASTER User tasks

- ◆ *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



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Manuals marked with an asterisk (\*) are listed twice because you use them for multiple tasks.

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## **Educational material**

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



# 1

## Overview of MANTIS facilities

MANTIS is a comprehensive application development system designed to increase productivity in all areas of application development, from initial design through production. MANTIS offers design facilities, prototyping capabilities, testing and debugging tools, and an advanced, high-level programming language.

All MANTIS facilities (with the exception of Batch MANTIS and the Batch Dialog Facility) are completely interactive. This means that once you create a program, screen, or file, it is immediately available for display and review by end users. This eliminates the need for pre-compiling, compiling, binding, coding Job Control Language (JCL), and other activities normally associated with application development. MANTIS also provides prototyping capabilities that allow you to build and test models of your system before beginning development. Prototyping lets you demonstrate a partial system to gain consensus and approval for the design early in the development phase.

This manual provides information on using MANTIS facilities to perform the following tasks:

- ◆ Screen design
- ◆ File view design
- ◆ Prompter design
- ◆ Interface design
- ◆ Entity transfer
- ◆ Prototyping
- ◆ Using additional facilities
- ◆ Batch processing

This chapter provides a brief description of the facilities listed above, explains how to sign on to MANTIS, and provides a brief introduction to MANTIS programming fundamentals, including information on how MANTIS stores and manipulates data. For detailed information on programming with MANTIS, refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002.

## MANTIS Facility Selection Menu

MANTIS facilities appear as options on the MANTIS Facility Selection Menu. From this menu, you can access all facilities discussed in this manual. See the table following this screen for a brief description of each option on the MANTIS Facility Selection Menu shown in the following screen illustration:

```

FAC002                MANTIS Facility Selection Menu                YYYY/MM/DD
                        TEST                                        HH:MM:SS
Please select one of the menu options below.

_____
Run a Program by Name ..... 1  Sign On as Another User .... 11
Display a Prompter ..... 2  Search Facility ..... 12
Design a Program ..... 3  Query Report Writer ..... 13
Design a Screen ..... 4  Directory Facility ..... 14
Design a MANTIS File View .. 5  Transfer Facility ..... 15
Design a Prompter ..... 6  Cross Reference Facility ... 16
Design an Interface ..... 7  Entity Transformers ..... 17
Design a TOTAL File View ... 8  Universal Export Facility .. 18
Design an External File View 9  Print Facility ..... 19
DL/I Access View ..... 10

F1=HELP  F3=END  F12=CANCEL

```

The MANTIS Facility Selection Menu on your system may be different from the example above if your Master User has customized it for your installation. A Master User is the person (or persons) designated to have access to certain facilities and information not available to all MANTIS users.

The following table provides a brief description of each option on the MANTIS Facility Selection Menu and lists the chapter that you can turn to for information on using the option. The table also provides reference information for options discussed in other manuals.

This option	Allows you to	See
Run a Program by Name	Run a program directly from the MANTIS Facility Selection Menu screen.	"Additional facilities" on page 319.
Display a Prompter	Display prompters without entering the Prompter Design Facility.	"Additional facilities" on page 319.
Design a Program	Develop and maintain programs.	<i>MANTIS Program Design and Editing, OS/390, VSE/ESA, P39-5013.</i>
Design a Screen	Create and maintain screen designs.	"Designing screens" on page 41.
Design a MANTIS File View	Create and maintain file views to monitor access to MANTIS files.	"Designing file views" on page 115.
Design a Prompter	Create and maintain help prompters for documentation purposes.	"Designing prompters" on page 195.
Design an Interface	Create and maintain interface profiles.	"Designing interfaces" on page 213.
Design a TOTAL File View	Design TOTAL file views used to monitor access to TOTAL files.	"Designing file views" on page 115.
Design an External File View	Design external file views to monitor access to external files.	"Designing file views" on page 115.
DL/I Access View	Create and maintain DL/I Call Profiles.	<i>MANTIS DL/I Programming, OS/390, VSE/ESA, P39-5008.</i>
Sign On as Another User	Access another user's files without exiting MANTIS.	"Additional facilities" on page 319.

This option	Allows you to	See
Search Facility	Search for text strings within MANTIS entities.	"Using search facilities" on page 515.
Query Report Writer	Generate reports from VSAM files.	<i>SPECTRA User's Guide</i> , P26-9561.
Directory Facility	Display and print directories of MANTIS entities.	"Additional facilities" on page 319.
Transfer Facility	Transfer entities between users on the same system or different systems.	"Transferring entities" on page 255.
Cross Reference Facility (XREF)	Cross-reference MANTIS entities.	<i>MANTIS XREF, OS/390, VSE/ESA, OpenVMS</i> , P39-0011.
Entity Transformers	Generate design objects, either from an external source or from other MANTIS entities, for example, a file from a screen.	<i>MANTIS Entity Transformers</i> , P39-0013.
Universal Export Facility	Move entities using a text format.	"Using export facilities" on page 429.
Print Facility	Print MANTIS entities in online and batch environments.	"Additional facilities" on page 319.

## Screen Design Facility

Use the Screen Design Facility to create and save fixed format screen designs and to perform updating and maintenance functions on existing screens. You can also use the Screen Design Facility to design forms used in batch processing. (See “[Batch processing](#)” on page 345 for information on using Batch MANTIS.)

The Screen Design Facility provides:

- ◆ A design work area that can be as large as 255 rows by 255 columns. We call this work area the logical display to distinguish it from the physical terminal. You can move around a screen design work area or logical display that is larger than the physical terminal by using the appropriate PF keys.
- ◆ Extended attribute support such as color, underlining, blinking, and reverse video for fields.
- ◆ Range checking as a logical attribute.
- ◆ Uppercase and lowercase support for data entry text fields. You can design data entry text fields on your screens to accept all uppercase text characters or to accept lowercase text (text entered as is). You set uppercase and lowercase support by using the UPPERCASE attribute when you update the field specifications for a screen (see “[Updating field specifications](#)” on page 73).

See “[Designing screens](#)” on page 41 for information on using the Screen Design Facility.

## File View Design Facilities

The File View Design Facilities include the following options from the MANTIS Facility Selection Menu:

- ◆ Design a MANTIS File View
- ◆ Design an External File View
- ◆ Design a TOTAL File View

Use this option	To
Design a MANTIS file view	Create and save a maximum of 999 MANTIS file views for each user and to perform update and maintenance functions on existing file views. A file view contains basic file characteristic information and a detailed layout of the records stored in each file. File views also allow you to ensure data security and independence by specifying which type of access (READ, UPDATE, DELETE/INSERT) individual users have to data in a file.
Design an external file view	Create external and personal computer file views. Using this option, you can ensure data security and independence by specifying which type of access (READ, UPDATE, DELETE/INSERT) individual users have to data in external files.
Design a TOTAL file view	Create TOTAL file views. Again, by using file views, you can specify what type of access (READ, UPDATE, DELETE/INSERT) individual users have to data in a file, ensuring data security and independence for your TOTAL files.

All file views you create using the File View Design facilities (MANTIS, external, personal computer, and TOTAL), can be accessed by online MANTIS and batch MANTIS. You can also access SUPRA RDM logical views from both online and batch MANTIS. If you want to access MANTIS files from a batch program other than Batch MANTIS, use the Batch Access Subroutine (see “[Batch processing](#)” on page 345).

See “[Designing file views](#)” on page 115 for information on using the File View Design Facilities.

## Prompter Design Facility

Prompters are screens of online help you can create for users. Use the Prompter Design Facility to create and save new prompter designs and to perform update and maintenance functions on existing prompter designs. You can use prompters to provide help, document operational procedures concerning a program, file, or screen design, and provide descriptive text explaining certain aspects of company policy or procedures.

### Prompter rules

A prompter can consist of up to 80 lines of text. The length of the prompter you are using is shown in the top-right corner of the screen (LINES=*n*). Each screen displays 20 lines of the prompter or up to four pages of text.

### Lowercase terminal support

If your terminal supports lowercase characters, the Prompter Design Facility allows you to design prompters containing lowercase characters. MANTIS stores all text exactly as you enter it (MANTIS does not convert it to uppercase). However, note that you can only determine the case for input text. Once you save a prompter with a certain case, the only way to alter the case is to rekey the text.

See “[Designing prompters](#)” on page 195 for information on using the Prompter Design Facility.

---

## Interface Design Facility

Use the Interface Design Facility to design and save new interface profiles and to update and perform maintenance functions on existing interface profiles. Interfaces provide the means of communication with programs written in languages other than MANTIS (such as COBOL or Assembler). MANTIS passes data back and forth through the interface.



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If you have interfaces designed with MANTIS Release 4.0 or less, or if you are using the DL/I interface (Releases 3.5 and 3.7), use the interface design procedures in [“Using the Old Interface Design Facility”](#) on page 531.

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For information on using the Interface Design Facility, see [“Designing interfaces”](#) on page 213.

## Transfer Facility

Use the Transfer Facility to share MANTIS entities (screens, files, programs, views, and so on) with other users, whether they are using the same or different online systems. You can also use the Transfer Facility with Batch MANTIS. (See “[Batch processing](#)” on page 345 for information on using Batch MANTIS).

### Transferring entities on the same system

If you want to share entities with users on the same system, transferring entities is a 2-step process. First, you must transfer entities into a bin for another user’s access. Then, the other user can copy the entities from the bin to his or her own library.

### Transferring entities between different systems

If you want to share entities with a user on a different system, you must copy the Transfer File to the target system from the source system or close the Transfer File to the source system and open it to the target system.

Whether you are transferring on the same or different systems, you can also delete and list entities in bins. See “[Transferring entities](#)” on page 255 for information on using the Transfer Facility.

## Additional facilities

MANTIS also provides additional facilities as options on the MANTIS Facility Selection Menu screen:

Use this facility	To
Run a Program by Name	Run a program without entering programming mode.
Display a Prompter	Display prompters without entering the Prompter Design Facility.
Sign On as Another User	Sign on under another user ID and password.
Directory Facility	View and print directories of: <ul style="list-style-type: none"> <li>◆ Existing programs</li> <li>◆ Screens</li> <li>◆ MANTIS file profiles</li> <li>◆ Prompters</li> <li>◆ Interfaces</li> <li>◆ TOTAL file views</li> <li>◆ External file views</li> <li>◆ Logical views</li> <li>◆ Scenarios</li> <li>◆ DL/I call profiles</li> <li>◆ DL/I segment layouts</li> </ul>
Print Facility	Print MANTIS entities in online and batch environments.
MANTIS Search Facility	Search entities for string matches.
Universal Export Facility	Move entities in and out of the MANTIS cluster.

For information on using these facilities, see “[Additional facilities](#)” on page 319 .

## Batch processing

Use batch processing to perform operations in volume and without the continual supervision required by online processing. MANTIS provides the following tools for the batch environment:

- ◆ Batch MANTIS
- ◆ Batch Access Subroutine
- ◆ Batch Dialog Facility

Use this batch tool	To
Batch MANTIS	Run the facilities of online MANTIS (excluding the Program Design Facilities) in a batch environment. (Use the Batch Dialog Facility to run the Program Design Facility options.) You can run large-volume applications, perform unattended operations and testing, and create end-user documentation or hard copy output. Batch MANTIS also provides for off-line access, allowing you to print large screen designs and reports that extend beyond the boundaries of your terminal.
Batch Access Subroutine	Allow non-MANTIS batch programs to access online MANTIS files (created using the File Design Facility).
Batch Dialog Facility	Run several options from the Program Design Facility in batch mode. You create a batch input stream specifying which program design functions you want to run.

For information on using Batch MANTIS, the Batch Access Subroutine, and the Batch Dialog Facility, see [“Batch processing”](#) on page 345.



Enter your user ID and password and press ENTER.

After you enter your user ID and password and press ENTER, the MANTIS Facility Selection Menu displays. If your Master User customized your menu screen, it may display differently than the example. The MANTIS Facility Selection Menu is the main selection menu listing all of the facilities available with MANTIS. However, some facilities may not be available or applicable to all users.

To select a facility, enter the corresponding facility selection number in the selection field and press ENTER. The selection field is a field common to all MANTIS menu screens. For example, to access the Screen Design Facility, enter 4 in the selection field and press ENTER. The following screen illustration shows a 4 in the selection field:

```
FAC002                MANTIS Facility Selection Menu                YYYY/MM/DD
                        TEST                                        HH:MM:SS
Please select one of the menu options below.

_____
Run a Program by Name ..... 1 Sign On as Another User .... 11
Display a Prompter ..... 2 Search Facility ..... 12
Design a Program ..... 3 Query Report Writer ..... 13
Design a Screen ..... 4 Directory Facility ..... 14
Design a MANTIS File View .. 5 Transfer Facility ..... 15
Design a Prompter ..... 6 Cross Reference Facility ... 16
Design an Interface ..... 7 Entity Transformers ..... 17
Design a TOTAL File View ... 8 Universal Export Facility .. 18
Design an External File View 9 Print Facility ..... 19
DL/I Access View ..... 10

F1=HELP  F3=END  F12=CANCEL
```

MANTIS provides the Master User with an extended MANTIS Facility Selection Menu containing facilities for administration and system control. For information on the facilities available to the Master User, refer to *MANTIS Administration, OS/390, VSE/ESA*, P39-5005.

---

## MANTIS fundamentals

The MANTIS facilities are designed, written, and accessed with the MANTIS language. To use MANTIS facilities effectively, you need to know some basic rules about how MANTIS stores and manipulates data. This section provides a brief overview of the following MANTIS programming fundamentals:

- ◆ MANTIS character set
- ◆ MANTIS reserved words
- ◆ MANTIS symbolic names

For detailed programming information, refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002.

### MANTIS character set

A programming character set is a collection of data types recognized by the programming language. The MANTIS character set consists of:

- ◆ Text (alphabetic) characters (A–Z uppercase, a–z lowercase)
- ◆ Numeric characters (0–9)
- ◆ Space character
- ◆ Special characters (listed in the following table)

**Double Byte Character Set (DBCS) considerations.** MANTIS supports the IBM Double Byte Character Set (DBCS). A DBCS character is a special 2-byte text character used on Asian language support terminals. MANTIS provides the following special characters for DBCS support:

- % Used in MANTIS Screen Design to designate DBCS headings. DBCS data fields are specified with the mask character (#).
- ! Used in programming mode (instead of the vertical bar) to indicate a comment.
- K” Used in a program statement to designate a Kanji literal.

MANTIS provides mixed-data type support for DBCS support terminals. Both EBCDIC and DBCS characters can reside concurrently in a TEXT variable. The attribute SO/SI allows you to embed SO (shift out) and SI (shift in) characters in a variable to indicate whether EBCDIC or DBCS characters are present. (See “[Updating field specifications](#)” on page 73 for information on setting the SO/SI attribute.)

Character	Description	Purpose
#	Mask character	Designates data fields in screen design. Can be user-defined.
"	Double quotes	Enclose a text literal. (Can vary in some countries.)
'	Single quote (apostrophe)	Marks a continuing line in programming mode.
()	Parentheses	Appear in arithmetic or text expressions and in the FILE, SCREEN, PROGRAM, ACCESS, VIEW, INTERFACE, and other library statements for naming conventions.
:	Colon	Separates two programming statements on the same line. A colon can also separate a library from an entity name.
;	Semicolon	Indicates the suppression of tabbing on an unformatted screen. For an explanation, refer to the section on the SHOW statement in <a href="#">MANTIS Language, OS/390, VSE/ESA, P39-5002</a> .

Character	Description	Purpose
,	Comma	Separates parameters and subscripts, and indicates tabbing on an unformatted screen.
.	Period	Designates a decimal point in a number. (It is the default decimal point for screen fields, which can be changed by users.)
_	Underline	Connects two or more words in a symbolic name.
	Vertical bar	Marks a comment line in programming mode. In Screen Design, it is the default blank fill character. You can use a vertical bar to tie together fields (e.g., words in a heading) into a single field or to indicate automatic skipping (tabbing) between fields.
!	Exclamation point	Marks a DBCS comment.
+	Plus sign	Adds two data items.
-	Minus sign	Subtracts two data items. Do not use a minus sign (or hyphen) between two words in a file name ( <i>file-name</i> ), because MANTIS tries to subtract the names.
*	Asterisk	Multiplies two data items.
**	Double asterisk	Raises one number to the power of the second number.
/	Forward slash	Divides one number by the value of the second number.
=	Equal sign	Cause MANTIS to evaluate an expression and sets it to TRUE if both sides are equal; otherwise, MANTIS sets it to FALSE. In a LET statement an equal sign sets the expression(s) on the left hand side to the variable on the right hand side. This character is also used for the ATTRIBUTE, and PRINTER, and the DATE, and TIME functions, and for assignment statements.
@	At sign	Used by the Component Engineering Facility (CEF) to recognize a source program when found as a suffix to a MANTIS program name. Also used to <i>nominate</i> a component to be broken out in the Decompose process. Can be user-defined.

MANTIS stores and manipulates data as:

- ◆ Text/alphabetic characters (TEXT)
- ◆ Numeric characters (BIG and SMALL)
- ◆ Kanji (KANJI)

### TEXT data

MANTIS stores text data as elements with a length of up to 254 characters. The default length is 16 characters. You can use the TEXT statement to store text data as a 1-dimensional array. For example, if you specify:

```
TEXT DATA (3,16)
```

MANTIS allocates storage as:

```
DATA(1) = " ____ "  
DATA(2) = " ____ "  
DATA(3) = " ____ "*
```



---

\* MANTIS stores the actual length of text data. The defined length, in this case 16, is the maximum allowable length for the field.

---

### Numeric data

MANTIS numeric characters include the following:

- ◆ Digits 0–9
- ◆ Preceding plus (+) or minus (-) sign
- ◆ Period (.)
- ◆ Letter E

Internally, MANTIS stores data in floating point (scientific notation) and regards numbers in one of two ways: SMALL or BIG. (When MANTIS stores decimal fractions, the last one to two digits may be rounded. Store decimal fractions only in BIG since accuracy may be lost if you store them in SMALL.)

SMALL            Whole numbers up to 6 significant digits

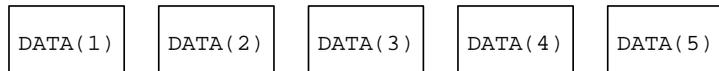
BIG                Whole numbers or fractions of up to 14 significant digits

Although BIG stores numbers of up to 14 significant digits, MANTIS will only show numbers up to 9 customizable digits. For information on the SHOW statement, refer to *MANTIS Language, OS/390, VSE/ESA, P39-5002*.

You can also store numeric data as an array. Briefly, arrays are ordered sets of numbers that can have either one or two dimensions and are specified by BIG and SMALL statements. For example, if you specify a 1-dimensional array as:

```
10 BIG DATA(5)
```

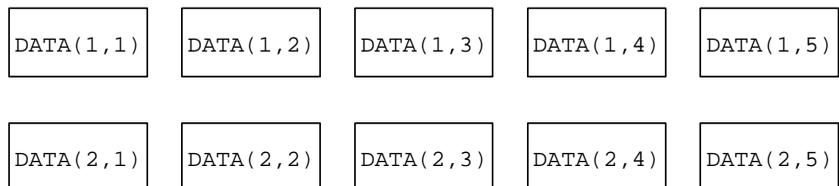
MANTIS allocates storage as:



If you specify a 2-dimensional array as:

```
10 BIG DATA(2,5)
```

MANTIS allocates storage as:



MANTIS accepts any number in the range 1E-74 through 9E-74. An error occurs if the result of a numeric statement causes an underflow or overflow of the system floating-point limits.

## MANTIS reserved words

Reserved words, listed below, identify MANTIS commands, statements, built-in functions, and constants. You enter reserved words exactly as they appear below; you cannot use them for any other purpose:

ABS	AFTER	ALTER	ASI	ATN
ACCESS	ALL	AND	AT	ATTRIBUTE
BEFORE	BIG	BLOB	BREAK	BY
BIND				
CALL	CHANGE	CLEAR	CONVERSE	COS
CHAIN	CHR	COMMIT	COPY	CURSOR
DATAFREE	DBPAGE	DELETE	DISPLAY	DOLEVEL
DATE	DECIMAL	DEQUEUE	DO	DOWN
E	END	EQUAL	EXEC_SQL	EXIT
EDIT	ENQUEUE	ERASE	EXECUTE	EXP
ELSE	ENTRY			
FALSE	FIRST	FOR	FORMAT	FSI
FILE				
G"	GET	GO		
HEAD	HELP			
IF	INTEGER	INT	INTERFACE	INTERNAL
INSERT				
K"	KANJI	KEY		
LANGUAGE	LET	LIST	LOG	LOWERCASE
LAST	LEVEL	LOAD		

MARK MEMORY	MODIFIED MIXD	MIXM	MIXMODE	MIXT
NEW	NEXT	NOT	NULL	NUMERIC
OBTAIN OFF	ON	OR	ORD	OUTPUT
PAD PASSWORD PERFORM	PERM PI POINT	POSITION PREFIX PRINTER	PRIOR PROGFREE PROGRAM	PROMPT PURGE
QUIT				
RELEASE REPLACE	RESET RETURN	RND ROUNDED	ROUNDING	RUN
SAME SAVE SCREEN SCROLL	SEED SELECT SEQUENCE SET	SIN SIZE SLICE SLOT	SMALL SQLBIND SQLCA SQLDA	SQR STOP SUBMIT
TAN TERMINAL	TERMSIZE TEXT	TIME TO	TOTAL TRAP	TRUE TXT
ULTRA UNPAD	UNTIL UP	UPDATE UPPERCASE	USAGE USER	USERWORDS
VALUE	VIA	VIEW	VSI	
WAIT	WHEN	WHILE	WINDOW	
ZERO				

## Symbolic names

A symbolic name is a user-defined name that represents user-defined data. In MANTIS, you use symbolic names to represent the data that programs can process. Symbolic names can stand for: (1) numeric, text, or DBCS data; (2) a screen, file, or access, view, TOTAL view, or interface view, or (3) program or entry names.

### Rules for symbolic names

A symbolic name:

- ◆ Must begin with an alphabetic character.
- ◆ Can contain alphabetic characters, numeric characters, and the underline character ( \_ ). No other special characters are allowed. MANTIS translates any lowercase alphabetic characters you enter to uppercase. For example, BasE becomes a variable named BASE.



---

If you use characters other than those outlined above, results may be unpredictable when MANTIS uses the symbolic name. For example, if you define a name containing a blank character, MANTIS will not be able to edit the name using the Component Engineering Facility (CEF).

---

- ◆ Must not be a reserved word, as listed in “MANTIS reserved words” on page 38. A symbolic name can contain a reserved word (NEWDATE), but cannot be a reserved word in its entirety (DATE).
- ◆ Must be unique. If MANTIS encounters a symbolic name for the second time, it will not create a second working area for that name.

MANTIS allows a maximum of 2048 symbolic names for a single program, including names from TOTAL views, external files, RDM logical views, entry, interface, RDM views, internal files, and programs.

Most design facilities generate symbolic names for variables in the programs in which the design object is used. Fields in those design objects must have valid symbolic names.

# 2

## Designing screens

The Screen Design Facility consists of menu options that enable you to create and maintain fixed format screen designs. The Screen Design Facility provides a design work area that allows you to create screen designs as large as 255 rows by 255 columns. The screen design work area is also called the “logical” display to distinguish it from the physical terminal. You can move around a screen design or logical display that is larger than the physical terminal, by using the appropriate PF keys. (See [“Using the screen design work area”](#) on page 46 for information on moving around the screen design work area.)

This chapter explains how to use each Screen Design Facility menu option, and includes information on moving around the facility, command descriptions, and field descriptions.

## Screen Design Facility menu

To enter the Screen Design Facility, select Design a Screen from the MANTIS Facility Selection Menu (see “MANTIS Facility Selection Menu” on page 21) by typing the option number in the selection field and pressing ENTER. MANTIS returns the Screen Design Facility menu shown in the following screen illustration:

```
ASP001                                M A N T I S

                                Screen Design Facility

Create or update a screen ..... 1
Update field specifications ..... 2
List field specifications ..... 3
Update repeat specifications ..... 4
List repeat specifications ..... 5
Display completed design ..... 6
Library functions ..... 7
Directory of screens ..... 8
Print completed design ..... 9
Terminate this facility ..... CANCEL

                                :   :
```

The Screen Design Facility menu lists the screen design menu options in the order you perform them to create a new screen. To update a screen, first fetch it using the Library Functions, then select the appropriate option directly.

Before you exit the Screen Design Facility, save your screen design or any updates by using the Library Functions (see “Using Library Functions” on page 102). If you try to exit the facility without saving current changes, MANTIS will ask you to confirm your exit.

The following table provides a brief description of and a section reference for each option on the Screen Design Facility menu.

This option	Allows you to	See section
Create or update a screen	Design a new screen or update an existing screen.	"Creating or updating a screen" on page 45.
Update field specifications	Assign attributes to fields in a screen.	"Updating field specifications" on page 73.
List field specifications	List attributes for the fields in a screen.	"Listing field specifications" on page 92.
Update repeat specifications	Assign vertical or horizontal repeats to a field.	"Updating repeat specifications" on page 95.
List repeat specifications	List repeat specifications for the fields in a screen.	"Listing repeat specifications" on page 98.
Display completed design	Display a screen design as it will appear in your application.	"Displaying the completed design" on page 99.
Library functions	Save, replace, fetch, or delete a screen design.	"Using Library Functions" on page 102.
Directory of screens	Display a list of screens in your library.	"Using the Directory of Screens" on page 110.
Print completed design	Print a screen design.	"Printing the completed design" on page 113.

## General considerations

- ◆ A single logical display can consist of several screen or map definitions that combine to form a map set. In other words, when using the CONVERSE statement to display a set of screens, you can have screens that overlay each other. For information on the CONVERSE statement, refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002.
- ◆ The Screen Design Facility provides extended attribute support including the use of color, underlining, blinking, and reverse video. MANTIS provides range checking as a logical attribute.
- ◆ The Screen Design Facility provides uppercase and lowercase support for data entry text fields. You can design data entry text fields on your screens to translate text to uppercase or leave as entered (lowercase). You can set uppercase and lowercase support with the UPPERCASE attribute when you update the field specifications for a screen (see “[Updating field specifications](#)” on page 73).



---

Uppercase and lowercase support is valid for input only. Text fields to and from files, databases and interfaces are always transferred as is. Uppercase translation can be forced or disabled by your Master User, or by using ATTRIBUTE(TERMINAL) in a program. For information on the ATTRIBUTE(TERMINAL) statement, refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002. For information about uppercase translation and when it occurs, refer to *MANTIS Administration, OS/390, VSE/ESA*, P39-5005.

---

- ◆ If your terminal supports lowercase, the Screen Design Library Facility menu accepts lowercase characters for screen description and password. MANTIS always translates the screen name to uppercase.
- ◆ You can use the Screen Design Facility to design batch forms for Batch MANTIS. (See “[Batch processing](#)” on page 345 for information on using Batch MANTIS.)

The remainder of this chapter describes how to use each Screen Design Facility menu option. If you are creating a new screen design, proceed through the chapter. If you are updating a screen design, see the section(s) you need as listed in the preceding table.

## Creating or updating a screen

This section describes how to create a new screen or update a screen when you select the Create or Update a Screen option from the Screen Design Facility menu (see “[Screen Design Facility menu](#)” on page 42). This section provides information about:

- ◆ **Using the screen design work area.** See “[Using the screen design work area](#)” on page 46.
- ◆ **Using window mode to move around a large screen design.** See “[Screen domains](#)” on page 49.
- ◆ **Defining screen domains and field domains.** See “[Defining screen and field domains](#)” on page 49.
- ◆ **Editing screen designs using PF keys and commands.** “[Editing screen designs](#)” on page 55.
- ◆ **Defining heading and data fields.** “[Defining heading and data fields](#)” on page 66.

## Using the screen design work area

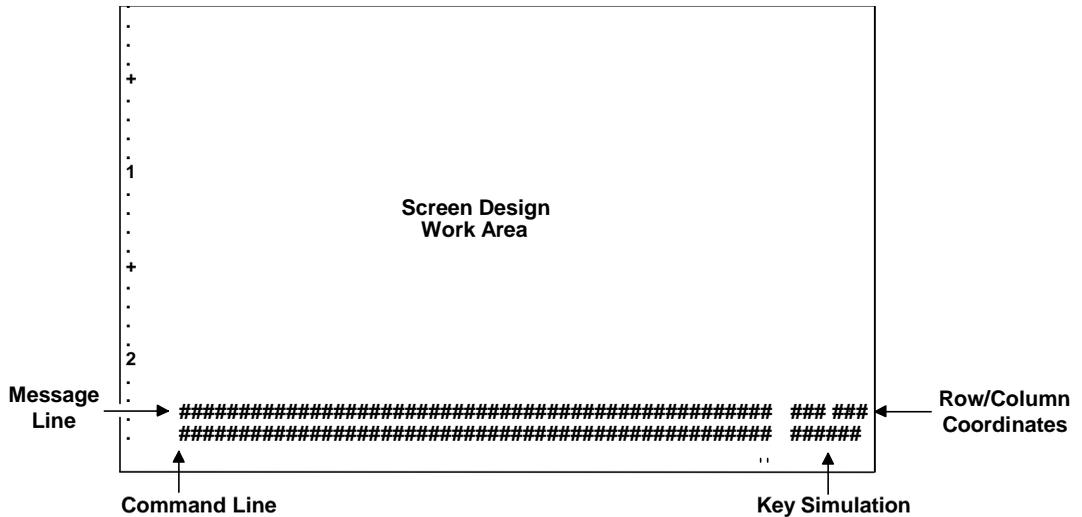
The screen design work area, shown in the following figure, is the screen MANTIS returns when you select the Create or Update a Screen option from the Screen Design Facility menu. This section describes the screen design work area and its reserved fields.

If you are creating a new screen, use the screen design work area to type in the heading and data fields to define your screen. If you are updating a screen, you must first fetch the screen from your library using Library Functions (see “[Using Library Functions](#)” on page 102). Once you fetch the screen and select Option 1, Create or Update a Screen, the screen in the following figure displays in your work area.

MANTIS reserves the following areas of the screen design work area:

- ◆ Row scale line (the first three columns of the screen design work area).
- ◆ Message field for system messages.
- ◆ Command line for command entry.
- ◆ Row and column coordinates field.
- ◆ Key simulation field.

These fields are illustrated in the following figure and described in the table following the figure:



The following table describes the reserved fields on the screen design work area:

Field	Length	Description
Message	Terminal width minus 10 columns	Displays system messages.
Row/Column coordinates	3 bytes for each	Displays current row and column coordinates of the upper-left corner of the screen design.
Command line	Terminal width less 8 columns	Provides field for entering commands.
Key simulation field	6 bytes	Provides field for entering function keys if your terminal does not have them.

The row and column scale lines (when displayed) indicate the current row and column position within the work area. These scale lines change to reflect your position as you move around the work area. To modify row and column scrolling increments, issue the DEFAULTS command. (See “[Defining heading and data fields](#)” on page 66 for information on screen design commands.)

### **General considerations**

- ◆ In the Screen Design Facility, row and column coordinates appear automatically only when you display a completed screen design that is outside the boundaries of the terminal.
- ◆ Blank spaces fill the displayed screen up to the last 20 columns. The last 20 columns on the screen are empty (“filled” with nulls) to allow you the flexibility of inserting fields in your design. When you position data or heading fields in this null area, you must insert required blanks using the space bar. If you use the PF keys to copy or move a field into this area, you do not need to insert blanks.
- ◆ The column scale line does not automatically appear on the screen. You can insert and remove the column scale line by pressing PF3. (See “[Editing screen designs](#)” on page 55 for information of PF keys available in the screen design work area.)

## Defining screen and field domains

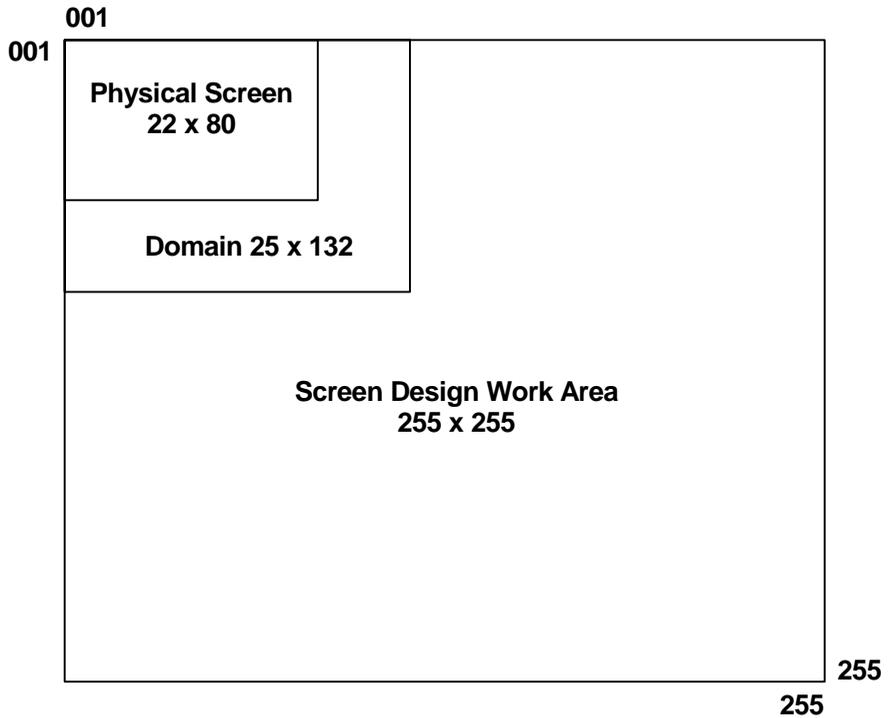
A domain is the space occupied by a defined screen or field. Domains ensure the screen and field definitions (including attributes and repeat specifications) you make during screen design are retained until you modify them. The Screen Design Facility has two types of domains:

- ◆ **Screen domain.** Size of your screen design (logical display).
- ◆ **Field domain.** Invisible column that extends one character position on either side of every defined field.

### Screen domains

A screen domain defaults to the size of the terminal screen you are using. To change the default, enter the DEFAULTS command on the command line. (See “[Defining heading and data fields](#)” on page 66 for details on using the DEFAULTS command.) MANTIS provides a “defaults screen” for you to modify. If you forget to change the domain defaults using the DEFAULTS command, you can modify them when you save the screen using the Library Functions (see “[Using Library Functions](#)” on page 102).

The relationship between the terminal and the screen domain is shown in the following figure:



When you change the screen domain, MANTIS saves the new specification(s) with your screen design. This means MANTIS correctly displays screen designs on a terminal screen that is larger or smaller than the actual design.

## Using Window Mode to move around a large screen design

The screen design work area provides a work space of 255 rows by 255 columns. The screen design work area is also called the logical display to distinguish it from the physical screen. Because the physical screen is much smaller than the available work area, you can use screen design window mode to move around a logical screen design that is larger than your physical screen.

To access window mode, tab to the key simulation field, type a *w* and press ENTER.

To reposition the physical screen, perform the following:

1. Overtyping row and column values (located in the lower-right corner of your screen) with new values and pressing ENTER. For example, enter 20 40 to scroll to row 20, column 40.
2. Overtyping row and column values with displacement values (+ or - in the first character position and the displacement value in the following character positions) and pressing ENTER. For example, enter +10 -20 to scroll down 10 rows and left 20 columns.
3. Overtyping row and column values with incremental values (in the first position and the incremental value in the following position), then pressing a PF key. For example, enter i20 i80 to scroll:
  - ◆ Down 20 rows when you press PF8
  - ◆ Up 20 rows when you press PF7
  - ◆ Left 80 columns when you press PF10
  - ◆ Right 80 columns when you press PF11

- To scroll using default values, press one of the window mode PF keys in the following table:

PF key	Function
PF7 / PF19	Scroll the screen UP 10 lines.
PF8 / PF20	Scroll the screen DOWN 10 lines.
PF9 / PF21	End window mode.
PF10 / PF22	Scroll the screen LEFT 20 columns.
PF11 / PF23	Scroll the screen RIGHT 20 columns.
PF12 / PF24	Move to origin (row 1, column 1).

The Screen Design commands, CLEAR, NEW, DEFAULTS, and so on, do not work when you are in window mode. (See “[Defining heading and data fields](#)” on page 66 for information on the Screen Design commands.) The preceding table lists the window mode PF keys.

Window operations available during a screen design session are not the same as the window mode available when a map set is converted from a program. For more information on using window mode when conversing maps, refer to [MANTIS Language, OS/390, VSE/ESA](#), P39-5002.

## Field domains

A field domain is the invisible 1-character column on either side of a defined field. For example, if you defined a 4-byte data field beginning at row 3, column 3, the field domain begins at column 2 and ends at column 7 as shown in the following screen illustration:

```

. . .+ . . .1 . . .+ . . .2 . . .+ . . .3 . . .+ . . .4 . . .+ . . .5 . . .+ . . .6 . . .+ . . .7 . . .+ . . .
.
.   ####
.
+
.
.
.
.
1
.
.
.
.
+
.
.
.
.
2
.
.
ASP026A:'ENTER' to update, HELP for instructions, CANCEL to terminate

```

Once you define a field, you can move it and still retain the attributes and repeat specifications. If you use the Screen Design Facility commands to move or copy a field, MANTIS retains the field definition no matter where you locate the field (see [“Defining heading and data fields”](#) on page 66).

When you move a defined field by adding/deleting spaces, MANTIS retains the field definition (including attributes and repeat specifications) as long as one character remains within the domain. If you move a field entirely out of the domain, MANTIS does not retain the field definition.

When you move a defined field into the domain of another defined field using insert and delete (for example if you insert blank spaces in front of a field that move it into the domain of another field), the field you are moving will assume the field definition (including attributes and repeat specifications) of the field previously at the new location.



---

There is no row domain for a field in the Screen Design Facility. To retain a field definition when you move a row to another line, use PF4.

---

## Editing screen designs

The Screen Design Facility provides PF keys and commands to help you edit and move around your screen design. The following table lists the available PF keys and describes how they work. The next table lists the screen design commands followed by detailed command descriptions.

PF key	Function	Description
PF1 / PF13	Insert a line	<p>If the cursor is in position 1 of any field (except the last field on the line) MANTIS inserts a full line from the cursor position.</p> <p>If the cursor is in position 1 of the last field on the line, MANTIS inserts a full line immediately before this field.</p> <p>If the cursor is in any position other than the first position, MANTIS inserts a full line immediately after the field where the cursor is positioned.</p> <p>All fields to the right of the cursor move down one line in the design, including those outside of the window boundary and on the following lines. This occurs as long as line 255 does not contain any fields.</p>

PF key	Function	Description
PF2 / PF14	Delete a line	<p>If the cursor is in position 1 of the line, MANTIS deletes that line. MANTIS deletes all fields to the right of the cursor, including those fields outside the window boundary up to, but not including, the corresponding cursor position on the next line.</p> <pre> ...+...1...+...2...+...3...+ . ##### . ##### . ##### + If the cursor appears as below: ...+...1...+...2...+ . ##### . a      b . ##### + c      d MANTIS calculates a cursor domain from the current cursor position to the corresponding cursor position in field c. MANTIS deletes from the cursor position through fields b and c. (MANTIS deletes all of field c since it begins within the cursor domain, in other words, right from the current cursor position to the corresponding cursor position.) When you press PF2 the result is: ...+...1...+...2. . _ ##### .      d </pre>
PF3 / PF15	Insert, move, or delete the column scale line	<p>Place the cursor on the line where you want the column scale line to appear and press PF3/PF15. The column scale line overlays the data that was displayed on this line. You can clear the line from the screen by pressing PF3/PF15 again. The data that was under the scale line reappears.</p>

PF key	Function	Description
PF4 / PF16	Move a field	Position the cursor in the field you want to move and press PF4/PF16. Move the cursor to where the first character of the moved field should appear and press PF4/PF16 again. The field, along with its attribute information, moves to the new position. If you try to move a field that is too long to fit within the 255-column limit, MANTIS moves the field, but truncates the overflow.
PF5 / PF17	Copy a field	Position the cursor in the field you want to copy and press PF5/PF17. Move the cursor the position where the first character of the copied field should appear and press PF5/PF17 again. The field, along with attribute information, is copied. If you try to copy a field that is longer than 255 columns, MANTIS copies the field, but truncates the overflow.
PF6 / PF18	Delete a field	Position the cursor in the field you want to delete and press PF6/PF18.
PF7 / PF19	Scroll screen up	Scroll the screen up 10 lines. The column scale line maintains its physical display position on the screen.
PF8 / PF20	Scroll screen down	Scroll the screen down 10 lines. The column scale line maintains its physical display position on the screen.
PF9 / PF21	Display or remove the row scale line	Display the row scale line in column 2. The screen design moves two positions to the right. Press PF9/PF21 again to remove the row scale line. The screen design moves left two positions.
PF10/PF22	Scroll screen left	Scroll the screen left 20 columns. The row scale line maintains its physical position on the screen.
PF11/PF23	Scroll screen right	Scroll the screen right 20 columns. The row scale line maintains its physical position on the screen.
PF12/PF24	Return window to origin	Moves window to origin (row 1, column 1). Both row and column scale lines maintain their physical positions on the screen.



If you return to the Screen Design Facility to reposition a field on a screen, the attributes for that field are retained as long as you use the PF keys to move it. If you use the Insert key to add spaces, the moved field assumes the same attributes if it is located within the old domain of the field. (See “[Field domains](#)” on page 53 for more information about field domains.)

You can also perform editing functions by entering commands on the command line. (See “Using the screen design work area” on page 46 for a description of the command line.) The following table lists the Screen Design Facility commands:

Command	Description
CLEAR	Clears the current screen design from the work area.
COPY	Copies a single line or a range of lines.
DEFAULTS	Displays the default row and column domains and allows you to update them.
DELETE	Deletes a single line or a series of lines.
HELP	Displays help prompters for PF keys and commands.
INSERT	Inserts a single line or a series of lines.
MOVE	Moves a single line or a series of lines.
NEW	Clears the current screen design from the work area.

## **CLEAR**

Use CLEAR to clear the current screen design from the screen design work area.

---

## **CLEAR**

---

### **Considerations**

- ◆ If you issue CLEAR and have not saved the screen design using Library Functions, MANTIS returns a blank screen, deleting all design work you have done.
- ◆ If you issue CLEAR and have saved the screen design using Library Functions MANTIS returns a blank screen and deletes all design work you have done since the last time you saved it.
- ◆ The CLEAR command is functionally identical to the NEW command.

## COPY

Use COPY to copy a single line or a range of lines to a specific location.

---

**COPY** *line1*[,*line2*],*line3*

---

---

### *line1*

**Description** *Required.* Specifies the line number of the first line you want to copy.

---

### *line2*

**Description** *Optional.* Specifies the line number of the last line in a range. Defaults to L1.

---

### *line3*

**Description** *Required.* Indicates the line number where the first copied line should appear.

### General consideration

All fields that were defined on and after line 3 are moved (*line2* - *line1* + 1) lines down in the design. There must be (*line2* - *line1* + 1) blank lines at the end of the screen design work area.

**Example** C 1,3,6 Copies lines 1 through 3 (inclusive) to line 6. Line 6 becomes line 9. Lines 1 through 3 will appear in two locations after you issue the COPY command. If you want to move lines 1 through 3 to a new location and remove them from their current location, use the MOVE command.

## DEFAULTS

Use the DEFAULTS command to display and alter the default row and column domains for fields on your screen design, alter the blank fill character or the mask character, and update the scrolling increments for your screen design session.

### DEFAULTS

When you enter DEFAULTS, MANTIS displays a boxed prompt (shown below). From this prompt you can alter the row and column domains default, the blank fill character default, the mask character default and the row and column scrolling increments.

```

+-----+
| Screen Design Row Domain ..... : 22 : |
| ----- Column Domain ..... : 80 : |
| ----- Blank Fill Character .... : | : |
| ----- Mask Character ..... : # : |
| Screen Paint Row Scrolling Increment .. : 10 : |
| ----- Column Scrolling Increment : 20 : |
+-----+
.
.
.
.
+
.
.
.
.
2
.
.
ASP030A:Modify the settings by overtyping and hit 'ENTER'

```

### General consideration

Any changes you make to the scrolling increments apply only to the current screen design session. If you alter the blank fill character or the mask character, MANTIS saves the change with your edit profile.

## DELETE

Use the DELETE command to delete a single line or a series of lines.

---

**DELETE** *line1*[,*line2*]

---

---

### *line1*

**Description**    *Required.* Specifies the line number of the first line you want to delete.

**Example**        D 3    Deletes line 3.

---

### *line2*

**Description**    *Optional.* Specifies the line number of the last line you want to delete.

**Examples**        D 3,10    Deletes lines 3 through 10.

                  D 7,6    Deletes lines 7 and 6.

### General consideration

All fields that exist on and after *line1* + *line2* are moved up *line2* - *line1* lines. If *line1* is greater than *line2*, MANTIS deletes the lines, starting with *line2* and ending with *line1*.

## HELP

Use the HELP command to display help prompts for PF keys and screen design commands.

---

**HELP**

---

## INSERT

Use the INSERT command to insert a single line or a series of lines.

---

**INSERT** *line1*[,*n*]

---

---

### *line1*

**Description**    *Required.* Specifies the line number where you want the first blank line to appear.

---

### *n*

**Description**    *Optional.* Indicates number of blank lines to insert. Defaults to 1.

### General consideration

All fields that exist on and after *line1* are moved down *n* lines. There must be at least *n* blank lines at the end of the screen design work area.

**Example**        I 10,5    Inserts five blank lines, starting on line 10. Line 10 moves to line 15.

## MOVE

Use the MOVE command to move a single line or a range of lines to a specific location.

---

### MOVE *line1*[,*line2*],*line3*

---

---

#### *line1*

**Description**     *Required.* Specifies the line number of the first line you want to move.

---

#### *line2*

**Description**     *Optional.* Specifies the line number of the last line in a range.

**Default**         L1

---

#### *line3*

**Description**     *Required.* Indicates the line number where the first moved line should appear.

#### General considerations

- ◆ Fields defined in lines *line1* through *line2* will appear before *line3*. There must be (*line2* - *line1* + 1) blank lines at the end of the screen design work area.
- ◆ Lines *line1* through *line2* will be blank after you issue the MOVE command. If you want to repeat the occurrence of a field, use the COPY command.

**Example**         M 10,13,25   Moves lines 10 through 13 *before* line 25. Any lines that appear between *line2* (or *line1* with a single line) and *line3* move up or down (*line2* - *line1* + 1) lines.

## NEW

Use the NEW command to clear the current screen design from the screen design work area.

---

## NEW

---

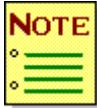
### Considerations

- ◆ If you issue NEW and *have not* saved the screen design using Library Functions, MANTIS returns a blank screen, deleting all design work you have done.
- ◆ If you issue NEW and *have* saved the screen design using Library Functions, MANTIS returns a blank screen and deletes all design work you have done since the last time you saved it.
- ◆ The NEW command is functionally identical to the CLEAR command.



## General considerations

- ◆ You can create a screen design with a maximum size of 255 rows by 255 columns. See “[Defining screen and field domains](#)” on page 49 for information on moving around a screen design (logical display) that is larger than the physical terminal.
- ◆ The current screen design (whether it is new or existing) will remain in the work area until you remove it using the NEW or CLEAR commands, fetch another screen design from the library, or exit from the Screen Design Facility.
- ◆ Remember to press ENTER to transmit the data after creating or updating a screen design. (If you use PF keys to scroll around your logical display, data is also transmitted when you press a PF key.)



---

**Warning:** If you press PF1, the CANCEL key, or the CLEAR key before pressing ENTER to transmit the data you entered, you will lose the entered data.

---

The following sections explain how to define heading and data fields.

## Defining heading fields

To define heading fields, select the Create or Update a Screen option from the Screen Design Facility menu (see “[Screen Design Facility menu](#)” on page 42) by typing a 1 in the selection field and pressing ENTER, or by pressing PF1. MANTIS returns the screen design work area (see the figure in “[Using the screen design work area](#)” on page 46). If you are updating a screen design you must first fetch the screen from your library before selecting option 1, Create or Update a Screen. (See “[Using Library Functions](#)” on page 102 for more information on fetching screens using the Library Functions.)



## General considerations

- ◆ The default blank fill character is a vertical bar ( | ). You can change the default blank fill character using the DEFAULTS command (see “[Defining heading and data fields](#)” on page 66) or in the Library Functions option of the Screen Design Facility.
- ◆ Using a blank fill character allows you to supply a single attribute (e.g., color) to an entire heading at once.
- ◆ To delete a heading field, erase it using the space bar or press the Erase EOF key (MANTIS erases all fields on the line from the cursor to the end of the line on the physical terminal). You can also use PF6 or the DELETE line command. (See “[Defining heading and data fields](#)” on page 66 for PF key and command descriptions.)
- ◆ For a repeating heading field, enter only the first occurrence. Indicate repeat occurrences (specifying horizontal or vertical repeats) by using the Update Field Specifications option (see “[Updating field specifications](#)” on page 73) or the Update repeat specifications option (see “[Updating repeat specifications](#)” on page 95).

After you finish typing in the heading fields, you can start entering data fields or you can press ENTER to temporarily store your heading field definitions. To permanently save your screen design use Library Functions. Press the CANCEL key to return to the Screen Design Facility menu and select the Library Functions option. (See “[Using Library Functions](#)” on page 102 for information on using the Library Functions.)



Notice that MANTIS requires blank spaces between data fields instead of vertical bars (|). Specify auto skip as an attribute of each field to cause the cursor to skip automatically to the next unprotected field after the user types information in a field. (See “[Updating field specifications](#)” on page 73.) If a heading field (including a single blank fill character) or another field follows the field by exactly one space, MANTIS will automatically skip to the next field.

### General considerations

- ◆ Enter only the first occurrence of a data field for which you are going to specify horizontal or vertical repeats. Indicate repeat occurrences by using the Update Field Specifications option (see “[Updating field specifications](#)” on page 73) or the Update repeat specifications option (see “[Updating repeat specifications](#)” on page 95).
- ◆ The maximum number of unique fields allowed on a screen varies depending on the size of the fields. The number and size requirements must be within the constraints of a MANTIS program. Those constraints are as follows:
  - 2048 user words (symbolic names) per program (including those defined within complex variables used in the MANTIS program).
  - 64K program vocabulary per program.
  - 64K data area per program.
- ◆ When a program uses the screen, the data field defined across the bottom of the screen can display help messages, error messages or any other useful information. You can also use the SHOW statement to display messages in the next-to-last line.

After you finish defining data fields, press ENTER to temporarily save the data. To permanently save your screen design, use Library Functions. Press the CANCEL key to return to the Screen Design Facility menu and select the Library Functions option. (See “[Using Library Functions](#)” on page 102 for information on using the Library Functions.)

## Edit characters and edit masks

MANTIS provides edit characters and edit masks to give you flexible formatting capabilities for numeric data fields. MANTIS uses edit characters and edit masks with numeric data fields only.

**Edit characters.** Edit masks allow you to format numeric fields to display data in a certain way. Edit masks are mainly used for formatting output fields. For example, if you want to display a list of check amounts in a column, use the edit mask `###,###.##`. This edit mask displays the amounts in the right-justified format:

```
      123.48  
    1,245.78  
  22,587.33
```

Edit characters display only when a user enters data in the numeric field. For example, if you want a field to display a dollar amount, use the dollar sign (\$) as an edit character. When a user enters numbers in the field, the edit character will display; otherwise it remains hidden.

You can use any character as an edit character except the mask character (#). For example, you can use the slash character (/) to separate the month, day, and year: `##/##/##`. (See “[MANTIS character set](#)” on page 33 for information on the MANTIS character set.)

See “[Using edit masks to format numeric fields](#)” on page 561 for information on the different types of edit characters and edit masks and how to use them. You can also use the `FORMAT` statement in programming mode to experiment with edit masks until you obtain the desired results. Refer to [MANTIS Language, OS/390, VSE/ESA, P39-5002](#), for information on the `FORMAT` statement.

## Updating field specifications

Each heading and data field on a screen design has specific attributes or characteristics which you need to define. Field attributes include:

- ◆ Field name
- ◆ Field length
- ◆ Row and column number where the field begins
- ◆ Number of vertical and horizontal repeats

You can define other attributes for each field; this section describes all available attributes.

You can use the following PF keys when defining or altering attributes using the Update Field Specifications option. PF keys are particularly helpful when you are defining or altering attributes for large screen designs.

PF key	Function
PF1/PF13	Selects the first field on the screen.
PF2/PF14	Selects the next field (field following the last processed field) on the screen.
PF3/PF15	Presents undefined fields for attribute update one at a time. Cancel the function by pressing the CANCEL key.
PF4/PF16	Selects the last field on the screen.
PF5/PF17	Selects the previous field (field before the last processed field).

PF key	Function
PF6/PF18	<p>Selects from a field table. MANTIS lists the fields in row/column order. Page through the list using the following PF keys:</p> <p>PF7/PF19—previous page</p> <p>PF8/PF20—next page</p> <p>PF12/PF24—return to page 1</p> <p>CANCEL—cancel</p> <p>PF9/PF21—help information</p> <p>Marks a field for update by placing an <i>S</i> in the selection column. You can also mark a range of fields by placing an <i>R</i> in the first and last fields in the range. Ranges can cross multiple pages. You can mark more than one individual field or field range for update. When you press ENTER, all marked fields are presented one at a time for update. (If you place an <i>S</i> next to a field that is in the middle of the specified range of fields, MANTIS displays the field marked with the <i>S</i> first, then displays all of the fields in the range.) When you update all marked fields or when you press the CANCEL key, MANTIS redisplay the field list with an asterisk (*) next to all selected fields. If you are processing repeat specifications and all fields in the range have an equal number of horizontal and/or vertical repeats, MANTIS displays a single screen for updating all fields (see “<a href="#">Updating repeat specifications</a>” on page 95).</p>
PF7/PF19	<p>Selects a range of fields to be processed one at a time. Position the cursor in the first field of the range and press PF7/PF19. Position the cursor in the last field of the range and press PF7/PF19 again. MANTIS presents each field in sequence for update.</p>
PF8/PF20	<p>Switches between Update Field Specifications (define attributes) and Repeat Field Specifications (specify horizontal and vertical repeats).</p>



When you select a field, MANTIS highlights the field and displays a window for you to define field specifications. This window lists the current (or default) attribute and repeat specifications. MANTIS automatically displays the row/column coordinates, the length of the field and the default values for the attributes, as shown in the following screen illustration:

```

                                B|U|R|R|Y'S
                                C|U|S|T|O|M|E|R|R|E|P|O|R|T

CUSTOMER| ||||| |CUSTOMER| ||||| |BRANCH| ||||| |CREDIT| ||||| |CREDIT
NUMBER| ||||| |NAME| ||||| |NUMBER| ||||| |RATING| ||||| |LIMIT

#####      #####          ###          ##          $#####

+-----+
| Field Name : cust_number                : Length : 6      :
|                                         : Row/Column : 7   3   :
| Data Type : TXT : Intensity : NOR : Cursor : N :
| Protected : N : Auto Skip : Y : Uppercase : n :
| Blinking  : N : Reverse Video : N : Highlight : N :
| Color     : NO : Modified Tag : N : Detectable : N :
| Box      : L. N U. N O. N R. N : SO/SI : N :
| Repeats  : V. 14 1 H. : Extended Edit : N :
+-----+

ASP030A:Modify the settings by overtyping and hit 'ENTER'

```

You need to define the remaining attributes. The following lists the example attribute specifications for the CUSTOMER NUMBER field as shown in the preceding screen illustration:

**Field Name.** CUST\_NUMBER. (Note that the parts of the symbolic name are connected by an underline character so MANTIS interprets them as one name.)

**Repeats (V. 14 1).** This indicates you want 14 additional vertical occurrences of the field. The 1 indicates you want the repeats single-spaced. (You can also specify repeats using the Update repeats specifications option from the Screen Design Facility menu—see [“Updating repeat specifications”](#) on page 95).

Accept the default values for the other attributes by pressing ENTER. MANTIS highlights the field you just defined.

## General considerations

- ◆ To request online HELP information, enter the HELP command on the command line. A prompter appears which details the PF key functions as well as the commands you can enter. You can also enter `HELPATTRIBUTES` on the command line for a help prompter describing the attribute specifications.
- ◆ If a selected field is outside the window of your physical terminal, MANTIS moves the window so you can view the field you are updating. When you are simultaneously assigning repeat specifications for a range of fields, MANTIS displays and highlights as many of the fields as possible. (See “[Updating repeat specifications](#)” on page 95 for information on assigning repeat specifications.)
- ◆ A screen design field can be assigned any of the listed display attributes; however, some attributes will be ignored when a map is conversed if the physical terminal does not support such features (color, blinking, outlining, and so on). Under normal circumstances, MANTIS determines which features the physical terminal supports during the initialization process. Consult your Master User if an attribute does not take effect.

The field descriptions on the following pages apply to the Update Field Specifications window (shown in the previous screen illustration).

---

## Field Name

**Description**     *Required* for data fields. *Not required* for heading fields. Contains the name of the data field.

**Format**            1–30 alphanumeric characters, beginning with a letter

### Considerations

- ◆ You can assign names to data fields only. For heading fields, Field Name contains NOT REQUIRED.
- ◆ MANTIS builds only one data area for each field. Data for each field is stored and retrieved in a unique location rather than being moved from screen to file (or interface) or from file (or interface) to screen. When you use the same field names in screen, file, and interface design, you are referencing the same storage area.
- ◆ If you want to move data directly from a screen to a file or an interface, specify field names that correspond exactly with the field names specified in your file design, TOTAL file view, external file view, and interface design phases.
- ◆ If you want two or more data fields on a screen to display the same information, give the fields the same field name and the same attributes.
- ◆ Any nonheading field that you do not define will exist in the screen definition, but cannot be referenced from a MANTIS program.

---

## Length

**Description** *Not required.* Specifies the length of the data field. MANTIS automatically supplies the length of the selected field based on the mask characters you entered.

**Consideration** You can alter the length on this screen but the length displayed in this field will not change until you press the CANCEL key and reenter the Update Field Specifications window.

---

## Row/Column

**Description** *Display.* Shows the selected field's row/column position.

---

## Data Type

**Description** *Required.* Indicates whether the field contains text, numeric or Kanji (DBCS) data. MANTIS automatically supplies the data type for heading fields (HED).

**Default** TEXT

**Options** T Text

N Numeric

K Kanji

**Consideration** MANTIS automatically designates fields containing edit masks as numeric fields.

## Intensity

<b>Description</b>	<i>Optional.</i> Specifies whether the field will be normal, bright, or hidden.
<b>Default</b>	NORMAL
<b>Options</b>	B Bright H Hidden N Normal

### Considerations

- ◆ Hidden fields are often used for passwords; bright fields are often used for headings, key fields, and error messages.
- ◆ You can also set this attribute in a program using the ATTRIBUTE statement. Refer to *MANTIS Language, OS/390, VSE/ESA, P39-5002*, for information on using the ATTRIBUTE statement.

---

## Cursor

<b>Description</b>	<i>Optional.</i> Indicates whether MANTIS should automatically position the cursor in the field when you converse the screen.
<b>Default</b>	<u>N</u> O
<b>Options</b>	<u>Y</u> ES <u>N</u> O

### Considerations

- ◆ If you set the Cursor field to Y for a single field, MANTIS positions the cursor in the field when you converse the screen.
- ◆ If you set the Cursor field to Y for more than one field, MANTIS positions the cursor in the first field displayed (left-to-right, top-to-bottom order).
- ◆ If no fields have the Cursor set to Y, the hardware automatically positions the cursor at the first unprotected field.
- ◆ You can also set this attribute in a program using the ATTRIBUTE statement. Refer to *MANTIS Language, OS/390, VSE/ESA, P39-5002*, for information on using the ATTRIBUTE statement.

---

## Protected

**Description** *Optional.* Indicates whether the field will be protected (read-only) or unprotected (available for data entry).

**Default** NO

**Options** YES

NO

### Considerations

- ◆ If you want to protect the field, position the cursor over the N in NO and enter Y (YES).
- ◆ MANTIS automatically protects heading fields.
- ◆ You can also set this attribute in a program using the ATTRIBUTE statement. Refer to *MANTIS Language, OS/390, VSE/ESA, P39-5002*, for information on using the ATTRIBUTE statement.

---

## Auto Skip

**Restriction** This attribute applies to data text fields only.

**Description** *Optional.* Indicates whether the cursor will skip automatically to the next unprotected data field when a user fills the current field.

**Default** YES

**Options** YES

NO

**Consideration** The Auto Skip attribute is functionally identical to a following blank fill character, but uses less storage than a blank fill character.

## Uppercase

<b>Restriction</b>	This attribute applies to data entry text fields only.
<b>Description</b>	<i>Optional.</i> Specifies whether MANTIS should translate a data entry text field to uppercase or leave it in lowercase (“as is”) form.
<b>Default</b>	<u>YES</u>
<b>Options</b>	<u>YES</u> <u>NO</u>

### Considerations

- ◆ Uppercase and lowercase support is valid for input only. MANTIS always transfers text fields to and from files, databases, and interfaces as you enter them.
- ◆ You can also set this attribute using the ATTRIBUTE statement, which overrides the Screen Design setting. UPPERCASE=YES is equivalent to ATTRIBUTE(map,field)="UPP". UPPERCASE=NO is equivalent to ATTRIBUTE(map,field)="LOW". Refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002, for information on using the ATTRIBUTE statement.
- ◆ This attribute can also be forced or disabled by the Master User. Refer to *MANTIS Administration, OS/390, VSE/ESA*, P39-5005, for information on Master User functions.

---

## Blinking

<b>Restriction</b>	This attribute is available only on terminals that support blinking.
<b>Description</b>	<i>Optional.</i> Indicates whether the data in the field will be blinking.
<b>Default</b>	<u>NO</u>
<b>Options</b>	<u>YES</u> <u>NO</u>

**Consideration** You can also set this attribute in a program using the ATTRIBUTE statement. Refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002, for information on using the ATTRIBUTE statement.

---

## Reverse Video

- Restriction** This attribute is available only on terminals that support reverse video.
- Description** *Optional.* Indicates whether foreground and background colors will reverse.
- Default** NO
- Options** YES  
NO
- Consideration** You can also set this attribute in a program using the ATTRIBUTE statement. Refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002, for information on using the ATTRIBUTE statement.

---

## Highlight

- Restriction** This attribute is available only on terminals that support highlighting.
- Description** *Optional.* Indicates whether the field will be highlighted.
- Default** NO
- Options** YES  
NO
- Consideration** You can also set this attribute in a program using the ATTRIBUTE statement. Refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002, for information on using the ATTRIBUTE statement.

## Color

<b>Restriction</b>	This attribute is available only on terminals that support color.
<b>Description</b>	<i>Optional.</i> Indicates the color of your display, if your terminal supports color.
<b>Default</b>	<u>N</u> O
<b>Options</b>	<u>B</u> LU Blue <u>T</u> UR Turquoise <u>R</u> ED Red <u>N</u> EU Neutral <u>G</u> RE Green <u>Y</u> EL Yellow <u>P</u> IN Pink

**Consideration** You can also set this attribute in a program using the ATTRIBUTE statement. Refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002, for information on using the ATTRIBUTE statement.

---

## Modified Tag

<b>Description</b>	<i>Optional.</i> Indicates whether the field has been modified.
<b>Default</b>	<u>N</u> O
<b>Options</b>	<u>Y</u> ES <u>N</u> O

### Considerations

- ◆ If you specify YES, MANTIS always marks the field as modified when you converse the screen, whether or not you modified it.
- ◆ You can also set this attribute using the ATTRIBUTE statement. Refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002, for information on using the ATTRIBUTE statement.

---

**Detectable**

**Restriction** This attribute is supported only on terminals with pen-detectable capabilities.

**Description** *Optional.* Indicates whether a field will be pen-detectable.

**Default** NO

**Options** YES  
NO

**Consideration** You can also set this attribute in a program using the ATTRIBUTE statement. Refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002, for information on using the ATTRIBUTE statement.

---

**Box**

**Restriction** This attribute is available only on terminals that support boxing.

**Description** *Optional.* Indicates whether a field will be outlined with a box.

**Default** NO

YES First position Left Vertical Bar (L.)

YES Second position Underline (U.)

YES Third position Overline (O.)

YES Fourth position Right Vertical Bar (R.)

**Consideration** You can also set this attribute in a program using the ATTRIBUTE statement. Refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002, for information on using the ATTRIBUTE statement.

## SO/SI

<b>Restriction</b>	The SO/SI attribute is available for DBCS support terminals only.
<b>Description</b>	<i>Optional.</i> Indicates whether DBCS (Double Byte Character Set) characters and EBCDIC characters will reside concurrently in a text variable (mixed-data type support).
<b>Default</b>	<u>N</u> O
<b>Options</b>	<u>Y</u> ES <u>N</u> O

### Considerations

- ◆ If you specify YES for this attribute, you can embed SO (shift out) and SI (shift in) characters in the variable to indicate whether DBCS or EBCDIC characters are present.
- ◆ You can only specify mixed-data type support for text data fields and screen design headings.
- ◆ You can also set mixed data support in programming mode using the ATTRIBUTE statement. Refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002, for more information.

---

## Repeats

**Description** *Optional.* Specifies the number of vertical (V.) and horizontal (H.) repeats and by how many rows or columns.

**Options** V First position. Indicates the number of additional occurrences of the field, not the total number of occurrences—default vertical repeats = 0.

Second position. Indicates the spacing between repeated rows (1 = single-spacing, 2 = double-spacing, and so on).

H First position. Indicates number of additional occurrences of the field, not the total number of occurrences.

Second position. Indicates the spacing you want between repeated columns, from the start of the first field to the start of the desired location of the next repeat. (e.g., if you want to repeat a 3-character field with 2 characters between fields, the column displacement would be five columns.)

## Considerations

- ◆ MANTIS provides a feature called dynamic repeats. This provides a way for screens with vertical repeat specifications to dynamically adjust to fit the terminal at run time. You can use this feature by specifying a vertical repeat specification of 255 in the appropriate field(s) in the screen. For example, if you define a field on the very first row of a screen and specify a vertical repeat of 255 with a displacement of 1, the dimension on a 3278 MOD-2 will be 22. Remember, MANTIS reserves the last two lines unless specifically overridden.
- ◆ There is no dynamic repeats feature for horizontal specifications. That is, you cannot define a field with 255 horizontal repeats. However, you can define a single text field with a length of 255 by indicating one mask character (#) on the screen and overtyping the length attribute with 255. The defined field width then adjusts to the terminal width.
- ◆ You can repeat numeric fields in both directions; however, text and DBCS fields can only repeat in one direction.

- ◆ You can wrap horizontal occurrences of a field to achieve the appearance of a 2-dimensional text array. For example, you can define horizontal repeats as 10 occurrences with a displacement value of 40 for a screen domain of 80 columns for the following fields. The result is shown in the following screen illustration:

```
NAME          ADDRESS          NAME          ADDRESS
#####
#####
#####
#####
#####
#####
#####
```



---

### Required

<b>Description</b>	<i>Optional.</i> Indicates whether users must enter data in the field.
<b>Default</b>	<u>N</u> O
<b>Options</b>	<u>Y</u> ES <u>N</u> O

---

### Default Display

<b>Description</b>	<i>Optional.</i> Indicates whether the field should show a default value on the initial display of the screen. Provide the actual value in line 1 of the Extended Edit Data window.
<b>Default</b>	<u>N</u> O
<b>Options</b>	<u>Y</u> ES <u>N</u> O

### Considerations

- ◆ If you set this attribute to NO but specify a default value, the field will appear empty (if it was not initialized by the program) on the initial display of the screen. If you do not enter a default value on line 1 of the Extended Edit Data window (or if you clear it), MANTIS sets the field to the default value on input. This value will appear on subsequent displays of the screen (unless it is modified).

---

**Fill**

**Description** *Optional.* Specifies whether to require users to fill the entire field when they enter data.

**Default** NO

**Options** YES

NO

---

1-

2-

3-

**Description** *Optional.* Specifies the extended edit values you want associated with the field.

**Options** Line 1 Default value for field.

Line 2 Low-range check (lowest value the user can enter).

Line 3 High-range check (highest value the user can enter).

**Consideration** If you do not complete one or more of these entries, MANTIS automatically assumes you do not want that particular extended edit attribute associated with the field.

## Listing field specifications

Once you have defined all of the attributes for the fields on a screen, you can verify them by selecting the List Field Specifications option from the Screen Design Facility menu. To do so, type a 3 in the selection field and press ENTER, or press PF3. MANTIS returns the Attribute Listing screen shown in the following screen illustration:

Attribute Listing	
CUST_NUMBER	( 7 , 3 ) , 6 , TXT , UPP , UNP , AUT
CUST_NAME	( 7 , 12 ) , 20 , TXT , UPP , UNP , AUT
BRCH_NUMBER_CUST	( 7 , 37 ) , 4 , TXT , UPP , UNP , AUT
CUST_CREDIT_RAT	( 7 , 52 ) , 2 , TXT , UPP , UNP , AUT
CUST_CREDIT_LIM	( 7 , 59 ) , 6 , NUM , MAS , UNP , AUT
MESSAGE	( 22 , 2 ) , 77 , TXT , UPP , PRO , BRI , AUT

The Attribute Listing screen displays:

- ◆ Data field names
- ◆ Row/column coordinates
- ◆ Field length
- ◆ Attribute specifications

(If you have not specified a field name, \*\* NOT DEFINED \*\* appears as the name.) You can use this option any time during the screen design process to verify or review the field specifications.

The Attribute Listing screen displays the following attribute settings in an abbreviated 3-character form:

Data Type:	<u>NUMERIC/KANJI/HEADING/TEXT/MASKED</u>
Intensity:	<u>BRIGHT/NORMAL/HIDDEN</u>
Cursor:	<u>CURSOR</u>
Protected:	<u>PROTECTED/UNPROTECTED</u>
Auto Skip:	<u>AUTOSKIP</u>
Uppercase	<u>UPPERCASE</u>
Blinking:	<u>BLINK</u>
Reverse Video:	<u>REVERSE VIDEO</u>
Highlight	<u>HIGHLIGHT</u>
Color:	<u>NEUTRAL / BLUE / PINK / GREEN / TURQUOISE / RED / YELLOW / NO COLOR</u>
Modified Tag:	<u>MODIFIED</u>
Detectable:	<u>DETECTABLE</u>
Box:	<u>LEFT BAR/RIGHT BAR/OVERLINE/</u>
SO/SI:	<u>MIXED-DATA TYPE</u>
Extended Edit:	<u>REQUIRED/DEFAULT VALUE/FILL/RANGE CHECK</u>

### General considerations

- ◆ MANTIS supplies the following:
  - Masked attribute for those data fields with characters other than #.
  - Box attribute when left bar, right bar, overline, and underline are all specified for the field.
- ◆ MANTIS ignores the following attributes if the current terminal does not support them:
  - Blinking
  - Reverse video
  - Highlight
  - Color
  - Detectable
  - Box

You can view field attributes on this screen, but you cannot alter them. Press the CANCEL key to return to the Screen Design Facility menu (see “[Screen Design Facility menu](#)” on page 42).



Select the field you want to define or update in one of the following ways:

- ◆ Enter the field name on the command line and press ENTER.
- ◆ Place the cursor on the field you want to update and press ENTER. (The cursor can be placed anywhere within the field.)
- ◆ Use one of the PF keys listed in the table in “Updating field specifications” on page 73.

When you select a field, MANTIS highlights it and displays a boxed prompt as shown in the following screen illustration. This prompt lists the current (or default) attribute and repeat specifications.

```

                                B|U|R|R|Y'S
                                C|U|S|T|O|M|E|R|R|E|P|O|R|T

CUSTOMER| ||||| |CUSTOMER| ||||| |BRANCH| ||||| |CREDIT| || |CREDIT
NUMBER| ||||| |NAME| ||||| |NUMBER| ||||| |RATING| || |LIMIT
#####  #####  #####  ##  $#####

+-----+
| ASP004           Update Repeat Specification |
|                                                     |
|           Number of Vertical Repeats . : ### :   |
|           Vertical Displacement ..... : ### :   |
|           Number of Horizontal Repeats : ### :   |
|           Horizontal Displacement .... : ### :   |
|                                                     |
+-----+
ASP030A:Modify the settings by overtyping and hit 'ENTER'
    
```

You can repeat numeric fields in both directions; however, text and DBCS fields can repeat in only one direction. Enter your data for the Update repeat specifications fields as described in the field descriptions on the following pages.

---

## Number of Vertical Repeats

- Description** *Optional.* Indicates the number of additional vertical occurrences of the field you want on your screen, not the total number of occurrences.
- Default** 0
- Consideration** If you want to fill the entire physical screen with vertical repeats, specify 255. The variable will then have a number of repeats that fit on the screen. A program can use the SIZE function to determine the current dimensions.

---

## Vertical Displacement

- Description** *Optional.* Indicates the spacing you want between repeated lines
- Options**
- 1 Single-spacing
  - 2 Double-spacing
  - 3 Triple-spacing, and so on

---

## Number of Horizontal Repeats

- Description** *Optional.* Indicates the number of additional horizontal occurrences of the field you want on your screen, not the total number of occurrences.
- Default** 0

---

## Horizontal Displacement

- Description** *Optional.* Indicates the spacing you want between repeated columns, from the start of the first field to the start of the desired location. (e.g., if you want to repeat a 3-character field with two characters between fields, the column displacement would be five columns.)
- Consideration** MANTIS wraps extra horizontal occurrences of a field to the next line as long as they fit within the screen domain. MANTIS no longer breaks a field when wrapping. If the occurrence of the field does not fit within the width of the screen, MANTIS moves the entire field to the next line. (See [“Updating field specifications”](#) on page 73 for an example of wrapping horizontal fields.)

After you enter your repeat specifications, press ENTER. To return to the Screen Design Facility menu, press the CANCEL key.

## Listing repeat specifications

Once you have defined repeat specifications for your screen, you can verify them by selecting the List repeat specifications option from the Screen Design Facility menu by typing a 5 in the selection field and pressing ENTER, or by pressing PF5. MANTIS returns the Repeat Specification screen shown below.

Repeat Specification			
ASP058I:CUST_NUMBER	occurs	15 displacement	1 vertical
ASP058I:CUST_NAME	occurs	15 displacement	1 vertical
ASP058I:BRCH_NUMBER_CUST	occurs	15 displacement	1 vertical
ASP058I:CUST_CREDIT_RAT	occurs	15 displacement	1 vertical
ASP058I:CUST_CREDIT_LIM	occurs	15 displacement	1 vertical

The Repeat Specifications list displays all horizontal and vertical repeat specifications in the screen. This list indicates the total number of occurrences (15 in this example), and the spacing between occurrences (1 in this example). This list also displays the type of displacement, vertical or horizontal (vertical in this example). (If you have not specified a field name, **\*\*NOT DEFINED\*\*** appears as the name.)

You can use this function any time during the screen design process. To return to the Screen Design Facility menu (see [“Screen Design Facility menu”](#) on page 42), press the CANCEL key.



If your screen display is larger than your physical terminal, you can scroll around the Display Completed Design screen in one of three ways:

- ◆ Use the PF keys as specified in the message line and in the following table. The default increments are 10 rows and 20 columns.

You can change the scrolling increment associated with the standard PF keys by typing the letter *i* in the first position of the row/column coordinates field, followed by the scrolling values you want. The existing values on your display remain unchanged. The next time you press a PF key, MANTIS uses the new value. These increments apply only to the current design session.

- ◆ Overtyping the current row/column coordinates with the specific location where the display should begin. MANTIS displays these coordinates in the lower-right corner of the screen.
- ◆ Use + or - increments. Provide a displacement character by typing + or - in the first position of the row/column coordinates field, followed by the number of rows and/or columns you want to scroll. MANTIS adjusts the existing values by the displacement amount that you provide.
- ◆ When you scroll to the maximum position in the logical display, MANTIS does not wrap to the beginning. To return to row 1, column 1, press PF12.

The following table lists and describes the PF keys available in the Display Completed Design option:

PF key	Function
PF6/PF18	Return to Screen Design Facility menu.
PF7/PF19	Scroll the screen up.
PF8/PF20	Scroll the screen down.
PF9/PF21	Exit window mode.
PF10/PF22	Scroll the screen left.
PF11/PF23	Scroll the screen right.
PF12/PF24	Return window to origin (row 1, column 1).

### General considerations

- ◆ You can use the Display Completed Design option to test tab settings by checking that fields that should be protected are in fact correctly specified (tab positions exist only at the beginning of unprotected fields). You can test cursor positioning, keystrokes, and so on, without going into programming mode.
- ◆ You can suppress the last two lines on a displayed screen and extend default vertical repeats by specifying the Full Display Function in Library Functions (see “[Using Library Functions](#)” on page 102). If you specify Full Display, error messages will not display at the bottom of your screen.

After viewing your completed screen design, you need to save or replace it in your library using Library Functions. Press the CANCEL key to return to the Screen Design Facility menu and select the Library Functions option (see “[Using Library Functions](#)” on page 102).

## Using Library Functions

Use the Library Functions option to save new screen designs and to replace, fetch, and delete existing screen designs. You can also update map-level flags and the row/column domain from this option.

Select the Library Functions option from the Screen Design Facility menu by typing a 7 in the selection field and pressing ENTER or by pressing PF7. MANTIS returns the Screen Design Library Facility menu as shown in the following screen illustration:

```

ASP002                                M A N T I S

                                Screen Design Library Facility

Name of screen ... :                               :
Password ..... :                               :
Description ..... :                               :

Map domain ..... : 22 80 : (Row,Column)
Blank fill character ... : | : Mask character ..... : # :
Sound alarm ..... : N : Full display ..... : N :
Protect bottom line ... : N : Opaque map ..... : N :

                                Save ..... 1
                                Replace ..... 2
                                Fetch ..... 3
                                Delete ..... 4
                                Terminate ..... CANCEL

                                : :

```

If you are performing a function on a screen that was fetched (opened) or previously saved or replaced, the name and description of that screen appears. If you are saving a new screen, enter data as described in the field descriptions on the following pages.

When you complete a library function, MANTIS returns to the Screen Design Facility menu and displays a message in the lower left corner of the screen confirming your action.

The following field descriptions apply to the Screen Design Library Facility screen (see the preceding screen illustration).

---

## Name of screen

**Description** *Required.* Specifies the name of the screen you want to access.

**Format** 1–30 alphanumeric characters (You can specify up to 33 characters if you specify a user name and screen name.)

### Considerations

- ◆ If the screen is in another user's library, you can fetch it by specifying the name of the user in whose library it resides, followed by a colon and the screen name, as follows:

`user-name:screen-name`

If the screen is in your library, specify only the screen name.

- ◆ MANTIS always translates this field to uppercase, regardless of whether your terminal supports lowercase characters.

---

## Password

**Description** *Required* if you are: (1) deleting a screen that was originally saved with a password, or (2) replacing a screen that was originally saved with a password. *Optional* if you are fetching, saving or replacing a screen.

**Format** 1–16 alphanumeric characters

**Consideration** If your terminal supports lowercase, you can specify a password using lowercase characters.

---

## Description

**Description** *Required* to save a new screen design. *Optional* for all other functions. Provides a description of the screen being accessed.

**Format** 1–48 alphanumeric characters

### Considerations

- ◆ If you are updating an existing screen design, MANTIS displays the existing screen description.
- ◆ You can change a screen description by typing over it, then replacing the screen.
- ◆ If your terminal supports lowercase, you can specify a description using lowercase characters.
- ◆ This description displays on directory listings.

---

## Map domain

**Description** *Optional*. Specifies the maximum row and column coordinates for the current screen domain.

**Default** Dimensions of the current terminal

**Consideration** If you try to save or replace a screen with fields outside of the screen domain, MANTIS returns an error message.

---

## Blank fill character

**Description**    *Protected.* Specifies the character you choose for the blank fill character.

**Default**        Vertical bar (|)

### Considerations

- ◆ You cannot change the blank fill character definition from the Screen Design Library Facility menu. To alter the blank fill character default, use the DEFAULTS command (see “[Defining heading and data fields](#)” on page 66).
- ◆ You can also set this attribute using the ATTRIBUTE statement in programming mode. Refer to [MANTIS Language, OS/390, VSE/ESA](#), P39-5002, for more information.

---

## Sound alarm

**Description**    *Optional.* Indicates whether you want MANTIS to sound an alarm each time you converse the screen.

**Default**        NO

**Options**        YES

NO

## Protect bottom line

<b>Description</b>	<i>Optional.</i> Indicates whether you want MANTIS to protect the bottom line of the screen (command line and Key Simulation field).
<b>Default</b>	<u>N</u> O
<b>Options</b>	<u>Y</u> ES <u>N</u> O

### Considerations

- ◆ You can protect only the command line and Key Simulation field from input with the Protect Bottom Line attribute in Library Functions. This attribute has no effect if you specify the FULL DISPLAY attribute.
- ◆ If you specify Yes for the Protect bottom line attribute:
  - You cannot enter window mode. Therefore, you may not want to specify this attribute for a screen that is larger than the physical display.
  - You should ensure that your programs do not cause CONVERSE loops when you are using this facility since you cannot enter the KILL command.
  - You cannot supply unformatted data (using the OBTAIN statement) when the map is conversed.
  - You cannot use the Key Simulation field, which could be a problem if the application might run on a terminal that does not support PF keys.

---

## Mask character

<b>Description</b>	<i>Protected.</i> Specifies the character you choose to use as the mask character to identify fields.
<b>Default</b>	# Mask character

### Considerations

- ◆ You cannot change the mask character definition from the Screen Design Library Facility menu. To alter the mask character default, use the DEFAULTS command (see [“Defining heading and data fields”](#) on page 66).
- ◆ Your Master User may have set a new system wide default for this value.

---

**Full display**

**Description** *Optional.* Indicates whether you want MANTIS to expand the screen size to the dimensions of the current terminal, including the bottom two lines of the screen.

**Default** NO

**Options** YES

NO

**Consideration** If you set this option to YES:

- ◆ MANTIS will not allow you to enter data in any of the reserved fields since none of them display.
- ◆ MANTIS highlights errors, but does not display an error message.
- ◆ You cannot initiate window mode (but you can specify window mode in your program with the CONVERSE statement).
- ◆ You should ensure that your programs do not cause CONVERSE loops when you are using this attribute because you cannot enter the KILL command.
- ◆ You cannot supply unformatted data (using the OBTAIN statement) when the map is conversed.
- ◆ You will be unable to use the Key Simulation field, which would be a problem if the application might run on a terminal that does not support PF keys.

## Opaque map

**Description**     *Optional.* Indicates whether or not a screen (map) will be opaque (rather than transparent) when it is conversed.

**Default**            NO

**Options**            YES

NO

### Considerations

- ◆ You can only set this attribute from the Screen Design Library Facility menu. You cannot set the attribute using the ATTRIBUTE statement. Fields from maps already in the map set and within the domain of an opaque map are not displayed.
- ◆ Do not specify repeating fields of 255 in a screen (map) that will be opaque.
- ◆ When a field on an opaque map is two positions from the left or right of the map domain, one character in the corresponding position on the underlying map will display through the opaque map, due to the 3270 handling of attribute characters. If you have this problem with an opaque map, either extend the heading fields left or right with blank fill characters (e.g., |); or shift the data or heading fields left or right one position.
- ◆ You can also add a border, for example, using asterisks (\*) or dashes and vertical bars (- and |), to outline the opaque map.

You can execute the following actions from the Screen Design Library Facility menu by typing the number of the action in the selection field or pressing the corresponding PF key:

Action	Description
Save	Saves a new screen design from the current work area in your library. (If a screen by this name already exists in your library, use Replace.)
Replace	Replaces a screen in your library with an updated version currently in the work area.  MANTIS asks you to confirm replacing a 4.2 screen in the new 5.x format. (If you are updating and replacing a screen you created with MANTIS 4.2, you must make sure you will not want to use this screen with a 4.2 cluster. Once you replace the 4.2 screen under MANTIS 5.x, MANTIS automatically converts the screen to the new format. You cannot CONVERSE a 5.x screen under MANTIS 4.2.)
Fetch	Retrieves a screen from a library and places it in your work area.  If the screen is from your library, enter only the screen name.  If the screen is in another user library, you can access it by specifying the name of the other user followed by a colon (:) and the screen name, as follows: <i>user-name:screen-name</i>  The screen must be in a MANTIS 4.2 or newer format. MANTIS 4.0 screens must be converted to MANTIS 4.2.
Delete	Deletes a screen from your library. MANTIS will ask you to confirm your deletion.

After you save, replace, fetch, or delete a screen, MANTIS returns to the Screen Design Facility menu. The current screen remains in your work area until you:

- ◆ Issue the CLEAR or NEW line command
- ◆ Fetch another screen
- ◆ Exit from the Screen Design Facility

## Using the Directory of Screens

Use the Directory of Screens option to display an alphabetic listing of all existing screen designs. This list includes the screen name, password, format (new or old), and description.

Select the Directory of Screens option from the Screen Design Facility menu (see “[Screen Design Facility menu](#)” on page 42) by typing an 8 in the selection field and pressing ENTER, or by pressing PF8. MANTIS returns the screen shown in the following screen illustration:

```
DIR003
TEST
-----Name----- Password----- Fmt -----Description-----
BURRYSSCREEN1      USERNAME      OLD  CUSTOMER REPORT SCREEN
BURRYSSCREEN2      USERNAME      NEW  NEW CUSTOMER ENTRY SCREEN
BURRYSSCREEN3      USERNAME      NEW  HELP PROMPTER
```

## General considerations

- ◆ You can view the listing, but you cannot alter it. If you want to print the Directory List, use the Directory Facility (see “[Listing MANTIS entities using the Directory Facility](#)” on page 326).
- ◆ You can position the directory list at a specific point (repoint option) by entering 1–30 alphanumeric characters (representing a screen name or the first part of a screen name) on the bottom line of the screen. When you press ENTER, the directory will begin with the screen name on or alphabetically after the entered characters.
- ◆ To display a particular range of screen names, enter a Starting Name and an Ending Name, separated by a colon, in the bottom-left corner of the screen (e.g., AUX:SCREEN).
- ◆ If you want to search for a set of screens whose names correspond to a particular pattern of characters, use the wildcard characters as follows:
  - \* represents an indefinite number of characters. For example, \*2\* will display a directory list of all screens whose names contain a 2.
  - ? represents a single character. PROG??? designates a screen (or screens) whose name begins with PROG and ends with any three characters.

Enter either parameter in the lower-left corner of the directory list.

The following field descriptions apply to the Directory of Screens list (see the preceding screen illustration).

---

## Name

**Description** *Display.* Shows the names of each screen in the library up to the first 16 characters.

**Consideration** MANTIS screens may have names up to 30 characters in length. To view the entire name, enter window mode by moving the cursor to the bottom-right corner of the Directory List screen, typing a *w* and pressing ENTER. Press PF9 to exit window mode. (If you are printing the directory list, the extended list for screen names is automatically printed.)

---

## Description

**Description** *Display.* Shows the description of each screen in the library up to the limit of the physical terminal screen.

**Consideration** You can use window mode to view descriptions that extend beyond the limit of the physical screen. To view the entire description, enter Window Mode by moving the cursor to the bottom-right corner of the Directory List screen, typing a *w* and pressing ENTER. (If you are printing the Directory List, the extended list for screen descriptions is automatically printed.) Once you are in Window Mode, however, you cannot reposition yourself in the Directory List. Use PF9 to exit from window mode. MANTIS redisplay the Directory List and you can use the reposition option to reposition the screen.

---

## Fmt

**Description** *Display.* Indicates whether a screen design is in the new, old, or unsupported format.

**Options** NEW MANTIS 5.x format

OLD MANTIS 4.2 format

R40 Screen format not supported (pre-MANTIS 4.2 format)

**Consideration** Screens created using MANTIS 5.x are stored in a new internal format. If you update and replace a screen you created with MANTIS 4.2, it is automatically converted to the new format. Before you convert a 4.2 screen, make sure you will not want to use it with a 4.2 cluster. You cannot converse MANTIS 5.x screens with MANTIS 4.2.

## **Printing the completed design**

Use the Print Completed Design option to obtain a hard copy of your current screen design. You can return to the Screen Design Facility menu at any time during the screen design phase and select this option. MANTIS routes the current screen design to the designated printer.



# 3

## Designing file views

Use the file view design facilities to create, save, update, and maintain MANTIS (internal) file views, TOTAL file views, and external file views. A file view contains detailed information about the contents and format of the data stored in a file and allows you to control access to a file by password protecting certain functions performed on the file data.



---

If you are not authorized to create file views, the facilities may not be included on your MANTIS Facility Selection Menu.

---

The following table provides a brief description and section reference for each File View Design Facility option:

This option	Allows you to	Section
Design a MANTIS file view	Create and maintain MANTIS file views to ensure data security and independence by monitoring access to information in a file.	“Designing MANTIS file views” on page 117.
Design a TOTAL file view	Ensure data security and independence by specifying the type of access an individual user has to data in a TOTAL file and what data he/she can access.	“Designing TOTAL file views” on page 141.
Design an external file view	Ensure data security and independence by specifying the type of access an individual user has to data in an external file and what data he/she can access.	“Designing external file views” on page 160.

This chapter provides examples of how to create a MANTIS file view, a TOTAL file view and an external file view. If you are performing update or maintenance functions, refer to the appropriate section or information as needed.



**Lowercase support:** If your terminal supports lowercase, you can enter file descriptions and access passwords using lowercase characters for MANTIS file views, TOTAL file views, and external file views.

---

## Designing MANTIS file views

To create or update a MANTIS (internal) file view, select the Design a MANTIS File View option from the MANTIS Facility Selection Menu (see “MANTIS Facility Selection Menu” on page 21) by entering the option number in the selection field and press ENTER. MANTIS returns the File Design Facility menu as shown in the following screen illustration:

```
MFV001                                M A N T I S

                                     File Design Facility

Create or update file profiles ..... 1
Update record layout ..... 2
Library functions ..... 3
Directory of file profiles ..... 4
Print completed design ..... 5
Terminate this facility ..... CANCEL

                                     :  :
```

The File Design Facility menu presents the options in the order you perform them when you create a new MANTIS file view. If you are updating a file view, first select the Library functions option to fetch the file view from your library (see “Using Library Functions” on page 102, then update the information as desired).

The following table provides a brief description of and section references for the File Design Facility menu options:

Option	Description	Section
Create or update file profiles	Create a new MANTIS file view or update an existing one.	“Creating or updating a file profile” on page 119.
Update record layout	Create a new record layout or update an existing one.	“Updating record layouts” on page 125.
Library functions	Save, replace, fetch, or delete MANTIS file views.	“Using the Library Functions” on page 134.
Directory of file profiles	Display a list of all MANTIS file views in your library.	“Using the Directory of File Profiles” on page 138.
Print completed design	Print your current record layout.	“Printing the completed design” on page 140.

You can move among the File Design Facility menu options listed above without losing the file view design currently in your work area.



**Warning:** You must save your file view or any updates via the Library Functions (see “Using the Library Functions” on page 134) before exiting from the File Design Facility. If you attempt to exit from the facility without saving current changes, MANTIS asks you to confirm your exit. If you exit without saving, you lose your file design (if it is new) or any changes you have made since you last saved the design.

## Creating or updating a file profile

Select Create or update file profiles from the File Design Facility menu (see “[Designing MANTIS file views](#)” on page 117) by typing a 1 in the selection field and pressing ENTER or by pressing PF1. MANTIS returns the File Design Facility screen shown in the following screen illustration:

```

MFV002                                M A N T I S

                                File Design Facility

Name and description of file ..... :           :
:                                     :           :
Associated record layout :                 :           :
Password for viewing ..... :                 :           :
Password for altering ..... :                 :           :
Password for deleting/inserting ..... :         :           :
Status ..... :                             :           :

Internal file code ..... Dec:           Hex:
Last profile update date ..... : YYYY/MM/DD :
Last profile update time ..... :           :
Element count ..... :                     :
Byte Count ..... :                       :

```

If you are creating a new MANTIS file, enter the data as described in the field descriptions on the following pages.

If you are updating a MANTIS file, you must first fetch the file using Library Functions. Then, when you select Create or update file profiles, MANTIS displays the fetched file in your work area.

The following field descriptions apply to the File Design Facility screen (see the previous screen illustration):

---

### Name and description of view

- Description** *Required.* Specifies: (1) the name of your file view design in the first field, and (2) the description of your file view design in the second field.
- Format** *name* (first field) 1–16 alphanumeric character name  
*description* (second field) 1–58 character alphanumeric description. The description may contain blank and special characters.
- Consideration** If your terminal supports lowercase, you can enter the file description using lowercase characters, although MANTIS stores file names in uppercase.

---

### Associated record layout

- Description** *Optional.* Indicates: (1) the name of the file containing the record layout that you want your file to use, and (2) the user name for the file.
- Format** *user-name:file-name*  
1–16 alphanumeric characters for *file-name*  
1–16 alphanumeric characters for *user-name*
- Default** (for user name) currently signed-on user

### Considerations

- ◆ If you are using an existing record layout for a file, you do not need to redefine the record layout.
- ◆ Do not delete the associated record layout while any file profiles using the record layout remain active. Do not change the associated record layout while it is being used by another file profile.
- ◆ If you do not specify an associated record layout, or if you are going to create an associated record layout, leave the field blank. (Do not enter NONE or MANTIS will search for a file named NONE.)

---

## Password for viewing

**Description** *Optional.* Indicates that programs using this password can view records, but not alter, insert, or delete them.

**Format** 1–16 alphanumeric characters

### Considerations

- ◆ If you do not specify this password, you must specify a password for altering or a password for deleting/inserting.
- ◆ If your terminal supports lowercase, you can specify a password using lowercase characters.

---

## Password for altering

**Description** *Optional.* Indicates that programs using this password may view or alter records, but not insert or delete them.

**Format** 1–16 alphanumeric characters

### Considerations

- ◆ If you do not specify a password for altering, you must specify a 1 for viewing or for deleting/inserting.
- ◆ If your terminal supports lowercase, you can specify a password using lowercase characters.

---

## Password for deleting/inserting

**Description** *Optional.* Indicates that programs using this password can view, alter, and delete/insert records.

**Format** 1–16 alphanumeric character password

**Consideration** If your terminal supports lowercase, you can specify a password using lowercase characters.

## Status

**Description** *Required* if the file will be used by programs. If so, you must enter ACTIVE in this field.

**Consideration** You must enter ACTIVE in your program exactly as it appears here (either uppercase or lowercase). If you enter ACTIVE either preceded or followed by a blank or any other status, MANTIS prohibits access to this file.

---

## Internal file code      Dec:

**Description** *Optional.* Specifies the file code in decimal value.

**Format** 16–999

### Considerations

- ◆ If you assign a decimal file code on the Create or Update File Profile screen, MANTIS will not validate the code until you save the file profile using the Library Functions screen.
- ◆ See the Internal File Code, Dec: field description in [“Using Library Functions”](#) on page 102.

---

## Internal file code      Hex:

**Description** *Display.* Shows the file code that MANTIS assigned when the file was created.

**Consideration** The internal file code is provided as an aid if the MANTIS split SETPRAY is used. The Systems Administrator normally uses this information. MANTIS does not update the internal file code until you save the file view.

---

## Last profile update date

**Description** *Display.* Shows the date the file profile was last modified. MANTIS maintains this field.

**Consideration** MANTIS will not update this field until you save or replace the file view.

## Element count

**Description** *Display.* Specifies the current number of elements in the file view. MANTIS maintains this field.

### Considerations

- ◆ MANTIS will not update this field until you save or replace the file view.
- ◆ If the file view was created prior to release 5.4, perform the following:
  - Go to the Update Record Layouts option (see “[Updating record layouts](#)” on page 125).
  - View the element layout.
  - Replace the file view so MANTIS can calculate and store the counts.

## Byte count

**Description** *Display.* Specifies the maximum number of bytes possible in a record. MANTIS maintains this field.

### Considerations

- ◆ See the considerations for the Size field in “[Updating record layouts](#)” on page 125 for more information on how MANTIS completes the maximum record length.
- ◆ MANTIS will not update this field until you save or replace the file view.
- ◆ For a file view created prior to Release 5.4, perform the following:
  - Go to the Update Record Layouts option (see “[Updating record layouts](#)” on page 125)
  - View the element layout
  - Replace the file view in order for the counts to be calculated and stored

Enter the appropriate data for your file design and press ENTER. MANTIS accepts your file design and returns you to the File Design Facility menu (see the screen illustration earlier in this section). If you did not specify an associated record layout for the file profile, you need to create a new record layout before you can save the file profile (see “[Updating record layouts](#)” on page 125).

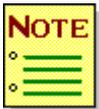
## Updating record layouts

Use the Update record layout function to create or update the record layout for a file. A record layout provides the format in which MANTIS stores and transmits file data. The record layout for a file can contain up to 64 fields. Each page of the record layout displays 16 fields.

When you select Update record layout from the File Design Facility menu (see “[Designing MANTIS file views](#)” on page 117), MANTIS returns the MANTIS Record Layout Definition screen as shown in the following illustration:

```

MFV003                      MANTIS Record Layout Definition                      YYYY/MM/DD
Name: nnnn                                                            HH:MM:SS
Page 1                      Element Count                      Size 32
Element  -----Name-----  Data-type  Dimensions  ----Attributes----
- - - - -                    - - - - -
                                     (Use PF1 - PF4 TO Page; Use Cancel TO Exit)
    
```



**NOTE** Underline characters represent the built-in tabs for this function.

If you are updating a file profile or returning to this function after performing other functions, your current record layout displays. (You must first fetch the file using Library Functions.)

To create a new record layout, enter the record layout data as described in the field descriptions on the following pages.

The following field descriptions apply to the MANTIS Record Layout Definition screen (see the previous screen illustration):

---

**Name**

**Description** *Display.* Shows the name of the file you are defining.

**Consideration** You must specify the file name using the Create or Update a File Profile option or in Library Functions.

---

**Date and Time**

**Description** *Display.* Shows the current date and time.

**Format** DATE is displayed as *YYYY/MM/DD* and Time as *HH:MM:SS*.

---

**Page**

**Description** *Optional.* Indicates which page of the record layout is currently displaying.

**Default** 1

**Consideration** To page through your record layout, use PF1–PF4, or type the number of the page (1–4) you want to view over the current page number and press ENTER.

## Element Count

**Description** *Display.* Shows the total number of elements currently in your record layout.

**Consideration** The element limit is 64 elements per file.

---

## Size

**Description** *Display.* Shows the current record length in bytes.

**Consideration** Record length is determined by totaling 32 characters for all of the key field(s) as follows:

- ◆ 9 characters for each occurrence of a non-key BIG element.
- ◆ 5 characters for each occurrence of a non-key SMALL element.
- ◆ Length plus 1 character for each occurrence of a non-key TEXT element.
- ◆ Twice the length plus 1 character for each occurrence of a non-key KANJI element.

## Element

**Description**     *Required.* Indicates (1) the action you want to take with the element definitions on the screen, and (2) the line number on which you want the action to take place.

**Options**            First tab position:

A   Alter this line—key the new information over the existing fields.

I   Insert this line.

D   Delete this line.

Second tab position:    Number of the line to be altered, inserted, or deleted.

## Considerations

- ◆ Key field(s) must be the first element(s) in your record layout.
- ◆ Key fields must be contiguous. The sum of all key fields must be equal to or less than 32K where:
  - 4K for each SMALL variable
  - 8K for each BIG variable
  - Number of characters for each TEXT variable
  - Twice the number of characters for each KANJI variable
- ◆ You can insert one or more elements between two existing elements—for example, between elements 4 and 5, by inserting the new element as line 4 and press ENTER. MANTIS rennumbers the new element as line 5, the original line 5 as line 6, 6 as 7, and so on. You can insert before element 1 by using element 0.
- ◆ If you delete an element during an update, MANTIS will renumber all subsequent element numbers.
- ◆ You can add fields to the end of a file at any time. However, if you add other fields or change field dimension or data-type when records already exist for a file, you might corrupt the data.

---

**Name**

**Description** *Optional.* Specifies name of the element.

**Format** 1–16 alphanumeric characters

---

**Data-type**

**Description** *Optional.* Specifies the type of data the element contains.

**Options** TEXT All alphanumeric fields (requires that you enter a length under dimensions or accept the default of 16).

BIG A numeric field of up to 14 significant digits (necessary when using decimals).

SMALL A numeric field of up to 6 significant digits (normally an integer field).

KANJI A DBCS data field.

## Dimensions

**Description** *Optional.* Indicates the length of a text or Kanji (DBCS) field, or the number of occurrences of this field in an array.

**Options** TEXT

KANJI (DBCS)

First tab: Maximum number of characters in the field or the number of occurrences of the field in an array. Possible values 1–255.

Second tab: Maximum number of characters in each occurrence of the field or the number of occurrences in an array. Possible values 1–254.

NUMERIC

First tab: Number of rows in a 2-dimensional array. Possible values 1–255.

Second tab: Specify number of columns in a 2-dimensional array or number of occurrences in a 1-dimensional array. Possible values 1–255.

**Consideration** Key fields cannot be arrays. See the following table for samples of data types and various dimension specifications.

The following table provides samples of various data types and dimension specifications that can exist in the record layout of a file.

Data type	Dimensions	Description
T or K	$n$	A single text or Kanji (DBCS) field of $n$ characters in length. You can specify the length at either tab position.
T or K	$m$ $n$	A text or Kanji (DBCS) array of $m$ entries, each entry having a character length of $n$ .
S or B		A single numeric field.
S or B	$n$	A numeric array (vector) of $n$ entries. You can specify the number of entries in the table in either tab position.
S or B	$m$ $n$	A numeric array (or matrix) with $m$ rows and $n$ columns.

---

## Attributes

- Description** *Required* for one of your elements, which you must specify as KEY (see Options below). Indicates the type of attribute the element contains.
- Options** KEY Indicates the elements by which MANTIS orders and accesses the records in the file. The total length of KEY elements cannot exceed 32 characters. You can specify KEY on any contiguous elements which follow, as long as the total length does not exceed 32 characters for all keyed elements. You must specify KEY first in the layout.
- SCRAMBLE Indicates that MANTIS should scramble the information for storage and unscramble it to be read by a program. Specify SCRAMBLE only on new elements. If you specify SCRAMBLE on an existing element, the data will be lost with no means of recovery.
- Consideration** You can assign only one attribute to an element (e.g., an element cannot be both a key element and scrambled).

An example record layout and instructions on how to enter the first element, CUST\_NUMBER. Use Tab to move to new tab positions on the screen and follow the steps below. The following screen illustration shows the record layout:

Mantis Record Layout Definition				YYYY/MM/DD
Name: NNNN				HH:MM:SS
Page 1	Element Count		Size 32	
Element	-----Name-----	Data-type	Dimensions	----Attributes----
i 1	cust_number	t	6	k
i 2	cust_name	t	20	
i 3	cust_address	t	20	
i 4	cust_city	t	13	
i 5	cust_state	t	2	
i 6	cust_zip_code	s		
i 7	cust_class	t	2	
i 8	cust_credit_rat	t	2	
i 9	cust_credit_lim	s		s
i 10	cust_comments	t	25	
i 11	brch_number_cust	t	4	

(Use PF1 - PF4 To page; Use CANCEL To Exit)

1. Move to the first tab position under Element and type I for a new line. You can also perform alter and delete functions on the element.
2. Tab to the second position under Element and type 1 to indicate line number. Tab to the Name field and type in CUST\_NUMBER.
3. Tab to the Data Type field and type T to indicate data is in TEXT form. You can also specify BIG, SMALL or KANJI.
4. Tab to the Dimensions field and type 6 to indicate the length of the field should be six characters.
5. Tab to the Attribute field and type K to indicate that CUST\_NUMBER is the element by which the file is ordered and accessed.
6. Repeat these steps for each record layout definition.

## General considerations

- ◆ Supply dimensions for Text and Kanji (DBCS) fields, and for Numeric arrays only. BIG and SMALL automatically specify the length of a numeric field.
- ◆ We supply the attribute S (scramble) to indicate that MANTIS should store the data in a field in a scrambled order for security purposes (see CUST\_CREDIT\_LIM in the preceding screen illustration). When the program accesses the file, MANTIS displays the data in the correct format.

After you enter all record layout data for a file, press ENTER to store the record layout definition. MANTIS temporarily stores the data in your work area and automatically updates the element count and size. To permanently save the file, use the Library Functions. Press the CANCEL key to return to the File Design Facility menu.

## Using the Library Functions

Use the Library Functions option to save, replace, fetch, and delete file profiles. Select the Library Functions option from the File Design Facility menu (see “**Designing MANTIS file views**” on page 117) by typing a 3 in the selection field and pressing ENTER or by pressing PF3. MANTIS returns the File Design Library Facility menu, shown in the following screen illustration:

```
MFV004                                M A N T I S

                                     File Design Library Facility

Name of file ..... :                :
Internal file code ..... Dec:      Hex:

      Save ..... 1
      Replace ..... 2
      Fetch ..... 3
      Delete ..... 4
      Terminate ..... CANCEL

                                :      :
```

If you are performing functions on an existing file profile (one that you already fetched into your work area), MANTIS displays the name of the file. To save a new file, supply the name of the file, type a 1 in the selection field, and press ENTER (or press PF1).

---

**Name of file**

**Description**    *Required.* Specifies the name of the file.

**Format**            1–16 alphanumeric characters

---

**Internal file code            Dec:**

**Description**    *Optional.* Specifies the file code in decimal value.

**Default**            An unused decimal value MANTIS assigns

**Options**            16–999

**Considerations**

- ◆ If you do not assign a file code, MANTIS assigns one for you when you save the file. MANTIS displays this file code when you reenter the Library Functions.
- ◆ You cannot use any number under 16 or over 999. MANTIS reserves these codes for its own use.

- ◆ If you select a file code already in use, MANTIS displays the MANTIS FILE MAP CODE DISPLAY screen when you save the file:

USR004	MANTIS FILE MAP CODE DISPLAY										YYYY/MM/DD HH:MM:SS
DEC	0	1	2	3	4	5	6	7	8	9	
0	0000	0001	0002	0003	0004	0005	0006	0007	0008	0009	
10	000A	000B	000C	000D	000E	000F	0010	0011	0012	0013	
20		0015	0016	0017	0018		001A	001B	001C		
30											
40											
50											
60											
70											
80											
90											

UTYFM2A:Press ENTER to continue; PF3 or CANCEL to exit

This screen shows all the decimal values that are currently in use. Review this screen, determine a file code that is not in use, then exit this screen and fill in the Dec (decimal) field with an unused file code.

- ◆ You can only assign a file code the first time you save the file; you cannot change a file code once assigned.
- ◆ If you replace, fetch or delete a file in Library functions, MANTIS ignores anything you enter in the Internal file code field. When you reconverse the file, MANTIS displays the correct file code.

---

**Internal file code                      Hex:**

**Description**     *Display.* Shows the file code MANTIS assigned when the file was initially saved.

**Consideration** The internal file code is provided as an aid if the MANTIS split SETPRAY is used. The Systems Administrator normally uses this information. The internal file code is not updated until the file view is saved.

You can execute the following actions from the File Design Library Facility menu by typing the number of the action (shown in the screen illustration at the beginning of this section) in the selection field and pressing ENTER or by pressing the corresponding PF key.

**Save.** Saves new file profiles and record layouts in your library. Use this function only when the file does not already exist in your library.

**Replace.** Replaces a file design in your library with an updated version currently in your work area.

**Fetch.** Retrieves a file design from your library and places it in your work area.

**Delete.** Deletes a file design from your library. MANTIS asks you to confirm the deletion. (Note: When you delete the file design, MANTIS deletes all associated records. Before you delete a file, make sure that no other file uses the same record layout as the file you are deleting. If another file does reference a file that you deleted, no one can use the file until you define a correct record layout.)

When the action you specified is complete, MANTIS exits to the File Design Facility menu (see “[Designing MANTIS file views](#)” on page 117), and displays a confirmation message in the lower left corner of the screen. Press the CANCEL key to exit from the File Design Library Facility and return to the File Design Facility menu without completing a library function.

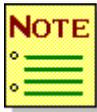
## Using the Directory of File Profiles

Use the Directory of File Profiles option to display an alphabetic listing of all existing file profiles. To display the list, select the Directory of File Profiles option from the File Design Facility menu by typing a 4 in the selection field and pressing ENTER or by pressing PF4. MANTIS displays the Directory of MANTIS Files screen shown in the following screen illustration:

DIR002	Directory of MANTIS Files		YYYY/MM/DD
USER			HH:MM:SS
-----Name-----	-----Status-----	-----Description-----	
BURRYS FILE1	ACTIVE	BURRYS CUSTOMER INFORMATION FILE	
STATE CODE	ACTIVE	STATE CODE FILE	

## General considerations

- ◆ You can view the list, but you cannot change it. If you want to print the list, use the Directory Facility. (See “[Listing MANTIS entities using the Directory Facility](#)” on page 326 for information on using the Directory Facility.) Passwords are not displayed on the Directory of MANTIS files list.
- ◆ If the list of MANTIS files is long and you want to reposition the list starting at a different file name, position your cursor in the bottom, left-hand corner of your screen and do the following:
  1. In the bottom-left corner of the screen, enter 1–16 characters of the file name from which you want to start the list.
  2. Press ENTER.
- ◆ To display a particular range of file names, enter a Starting Name and an Ending Name, separated by a colon (e.g., AUX:FILE), in the bottom-left corner of the screen.



---

When specifying a range of files, you cannot use the wildcard characters described below.

---

- ◆ If you want to search for a set of files whose names correspond to a particular pattern of characters, use the wildcard characters, the asterisk (\*) and the question mark (?), as follows:
  - \* Represents an indefinite number of characters. For example, \*2\* displays a Directory List of all files whose names contain a 2.
  - ? Represents a single character. PROG??? designates a file (or files) whose name begins with PROG and ends with any three characters.

Enter either parameter in the lower-left corner of the Directory List.

After viewing your list of file profiles, press ENTER. If you are in the middle of multiple pages, ENTER will scroll you to the next page and so on, until you reach the last page. Once you reach the last page or if you are viewing a single page, pressing ENTER returns you to the File Design Facility menu (see “[Designing MANTIS file views](#)” on page 117). Use PA1 to return directly to the MANTIS Facility Selection Menu or press the CANCEL key if you wish to exit before the end of the listing.

## **Printing the completed design**

Use the Print Completed Design option to obtain a hard copy of your current record layout. To do so, type a 5 in the selection field and press ENTER or press PF5. MANTIS routes the current record layout to a designated printer. You can use this option to print a record layout at any time during the file design process.

## Designing TOTAL file views

You can design file views for TOTAL files (defined in your TOTAL DBMOD) or for SUPRA PDM files (defined in your SUPRA Directory) using the TOTAL File View Design Facility. A file view contains detailed information about the contents and format of the data stored in a file and allows you to monitor and control access to that data by password protecting certain functions performed on the file data.

By controlling access to the data in a file, you can ensure greater data security and independence. Ideally, you should not include any data in the file view that is not necessary for program execution. This insulates the data from any changes (e.g., inadvertent program errors) to data fields that are not essential to the program.

Three separate passwords are provided so you can assign READ, UPDATE, or DELETE/INSERT access to file data associated with TOTAL views. Three separate passwords are provided for each option. For example, if a user needs to look at the data in a file, but not update it, you can assign a READ password to that file.

If you have a file containing fields A, B, C, D, and E:

A	B	C	D	E
---	---	---	---	---

**File record**

and you want to create a file view that enables another user to see fields A, C, and D, but not B and E, create the file view as:

A	*****	C	D	*****
---	-------	---	---	-------

**File view**

The person using the file view is then not aware that field B and E exist. The user sees the file record as:

A	C	D
---	---	---

**File record through the file view**

## TOTAL File View Design Facility menu

Access the TOTAL File View Design Facility from the MANTIS Facility Selection Menu (see “[Designing MANTIS file views](#)” on page 117) by typing the Design a TOTAL File View option number in the selection field and pressing ENTER. MANTIS returns the TOTAL File View Design Facility menu shown in the following screen illustration:

```
                M A N T I S

                TOTAL File View Design Facility

                Create or update views ..... 1
                Update view layout ..... 2
                Library functions ..... 3
                Directory of views ..... 4
                Print completed view ..... 5
                List allowed TOTAL files ..... 6
                Terminate this facility ..... CANCEL

                :      :
```

You can move among the TOTAL File View Design Facility menu options listed above without losing the file view design currently in your work area.



---

**Warning:** You must save your file view design or any updates via the Library Functions (see “[Using the Library Functions](#)” on page 155) before exiting from the facility. If you try to exit without saving current changes, MANTIS asks you to confirm your exit. If you exit without saving, you lose your file design (if newly created) or any changes you made since you last saved the design.

---

The following table provides a brief description of and section references for the TOTAL File View Design Facility menu options:

This option	Allows you to	Section
Create or update views	Create a new file view or updates an existing one.	“Creating or updating views” on page 144.
Update view layout	Create a new view layout or updates an existing one.	“Updating a view layout” on page 149.
Library functions	Save, replace, fetch or delete TOTAL file views.	“Using the Library Functions” on page 155.
Directory of views	Display a list of all TOTAL file views in your library.	“Using the Directory of Views” on page 157.
Print completed view	Print a copy of your current TOTAL view layout.	“Printing the completed view” on page 159.
List allowed TOTAL files	Display a list of files available to you.	“Listing allowed TOTAL files” on page 159.

The TOTAL File View Design Facility menu presents the options in the order that you perform them to create a new TOTAL file view. If you are updating a TOTAL file view, first select Library Functions to fetch the file view, then refer to the appropriate section or information as listed in the preceding table.

## Creating or updating views

Use the Create or Update Views option to create or update TOTAL and SUPRA PDM files. Select the option from the TOTAL File View Design Facility menu (see “TOTAL File View Design Facility menu” on page 142) by typing a 1 in the selection field and pressing ENTER or by pressing PF1. MANTIS returns the TOTAL File View Design Facility screen shown in the following screen illustration:

```

M A N T I S

TOTAL File View Design Facility

Name and description of view ..... :
:
TOTAL file name ..... :
Password for viewing ..... :
" altering ..... :
" deleting/inserting ..... :
Status ..... :
Linkage path for access (VE files only) . :
Reference variable name " . :
Record code " . :
Last alteration date ..... :
" time ..... :
```

If you are creating a new TOTAL file view, enter the information as described in the field descriptions on the following pages.

If you are updating a TOTAL file, you must first fetch the file using Library functions. Then, when you select Create or update views, MANTIS displays the fetched file in your work area. Change the information as you require using the following field descriptions.

---

## Name and description of view

**Description** *Required.* Specifies: (1) the name of your file view design in the first field, and (2) the description of your file view design in the second field.

**Format** *name* (first field) 1–16 alphanumeric character name

*description* (second field) 1–58 character alphanumeric description. The description can contain blank and special characters.

### Considerations

- ◆ MANTIS displays the description in the Directory of TOTAL File Views.
- ◆ If your terminal supports lowercase, you can specify a description using lowercase characters.

---

## TOTAL file name

**Description** *Required.* Specifies the TOTAL or SUPRA PDM file that the file view is referencing.

**Format** 4-character TOTAL or SUPRA PDM file name

### Considerations

- ◆ The TOTAL file must currently exist in your TOTAL database descriptor module (DBMOD) or SUPRA Directory to which MANTIS has access.
- ◆ Multiple views can reference the same TOTAL/SUPRA PDM file.

---

## Password for viewing

**Description** *Optional.* Indicates that programs using this password can view records, but not alter, insert, or delete them.

**Format** 1–16 alphanumeric characters

### Considerations

- ◆ If you do not specify this password, you must specify a password for altering or a password for deleting/inserting.
- ◆ If your terminal supports lowercase, you can specify a password using lowercase characters.

---

### Password for altering

**Description** *Optional.* Indicates that programs using this password may view or alter records, but not insert or delete them.

**Format** 1–16 alphanumeric characters

**Considerations**

- ◆ If you do not specify a password for altering, you must specify a 1 for viewing or for deleting/inserting.
- ◆ If your terminal supports lowercase, you can specify a password using lowercase characters.

---

### Password for deleting/inserting

**Description** *Optional.* Indicates that programs using this password can view, alter, and delete/insert records.

**Format** 1–16 alphanumeric character password

**Consideration** If your terminal supports lowercase, you can specify a password using lowercase characters.

---

### Status

**Description** *Optional.* Specifies the status of the file.

**Consideration** You must specify ACTIVE if the file will be accessible through this view. If you enter anything other than ACTIVE, programs will not be able to use the file.

---

### Linkage path for access (variable entry files only)

**Description** *Required.* Specifies which linkage path MANTIS will use to retrieve, alter, delete, or insert records in a variable entry file.

**Consideration** You are limited to one linkage path access for a particular view of a TOTAL or SUPRA PDM variable entry file. In the definition of the view layout (see [“Updating a view layout”](#) on page 149), you need to enter the TOTAL key element name(s) associated with this linkage path.

---

**Reference variable name (variable entry files only)**

**Description**     *Required.* Specifies the variable name MANTIS creates when the TOTAL or SUPRA PDM view is processed (via the TOTAL statement).

**Consideration** The TEXT variable created will be processed by the TOTAL statement like any other data variable defined in the same view. (It can have a prefix and multiple buffers.)

---

**Record code (variable entry files only)**

**Description**     *Required.* Specifies the record code you want associated with this TOTAL view.

**Considerations**

- ◆ If a code is not specified, MANTIS disregards the record code and retrieves all records associated with the specified linkage path.
- ◆ If a code is specified, MANTIS selects TOTAL or SUPRA PDM records that match the specified record code and disregards all others.
- ◆ During update or insertion, MANTIS enforces the specified record code. Therefore, you do not have to concern yourself with record codes in your program.

---

**Last alteration date and time**

**Description**     *Display.* Shows the date and time updates were made to the TOTAL view.

The following example creates a TOTAL file view for a TOTAL single-entry (SE) file named INVT. The file view is named INVENTORY\_VIEW and described appropriately. The TOTAL File Name being referenced is the INVT file. (Remember, you cannot create a file view unless the referenced TOTAL file is defined in the TOTAL DBMOD or SUPRA Directory, and MANTIS has access to the file.) Different passwords are assigned for each level of access to the data in the INVT file. The Status is ACTIVE, enabling a MANTIS program using this view to proceed with the intended access. The data is entered at the TOTAL File View Design Facility screen as shown in the following screen illustration:

```

M A N T I S

TOTAL File View Design Facility

Name and description of view ..... : inventory_view  :
: INVT - inventory primary file      :
TOTAL file name ..... : invt :
Password for viewing ..... : look          :
"      altering ..... : change        :
"      deleting/inserting ..... : remove        :
Status ..... : active          :
Linkage path for access (VE files only) . :              :
Reference variable name      "      . :              :
Record code                   "      . :              :
Last alteration date ..... :              :
"      time ..... :              :
```

The remaining fields do not apply to this example. Pressing ENTER temporarily stores the view and returns to the TOTAL File View Design Facility menu. Now you are ready to create the view layout.

## Updating a view layout

A file view layout specifies which elements of a file are referenced through a file view and how they are referenced. Select the Update View Layout option from the TOTAL File View Design Facility menu by typing a 2 in the selection field and pressing ENTER or by pressing PF2. MANTIS returns the Total File View Layout Definition screen shown in the following screen illustration:

Page 1		TOTAL File View Layout Definition					YYYY/MM/DD		
Name:		Element Count					HH:MM:SS		
-----M A N T I S-----			-----T O T A L-----						
Act	Name	Type	Element	Format	Sign	Dec	Length	Dimension	Attribute
-	-		-	-	-	-	-	-	-

(Use PF1 - PF12 to Page; Use CANCEL to Exit)

If you update an existing view layout or returning to this function after performing other functions, the TOTAL file view currently in your work area displays on the screen.

Enter your data as described in the field descriptions on the following pages. Use the built-in tabs (indicated in the preceding screen illustration) to move from field to field and the Alter, Insert, and Delete line commands to make the necessary changes. (See the field descriptions that follow for information on using these commands.)

---

## Page

**Description** *Optional.* Specifies the page number of the view layout.

**Options** 1–12

**Consideration** Use PF1–PF12 to page through your TOTAL file view layout, or type the new page number (1–12) over the current page number and press ENTER.

---

## Name

**Description** *Display.* Shows the name of the TOTAL view currently in your work area.

**Consideration** The name of the file is set in Create or update a file or Library functions.

---

## Date and Time

**Description** *Display.* Shows the current date and time.

**Format** DATE is displayed as *YYYY/MM/DD* and Time as *HH:MM:SS*.

---

## Element count

**Description** *Display.* Shows the total number of elements currently in your TOTAL view layout. The maximum number of elements allowed is 192.

**Consideration** Element Count is a display field only and cannot be changed.

---

## Act

**Description** *Required.* Indicates the action you want to take with the element definitions on the screen.

**Options** A Alter this line—key the new information over the existing fields

I Insert this line

D Delete this line

---

**Name**

**Description** *Required.* Specifies the name you want assigned to the element.

**Format** 1–16 alphanumeric characters

---

**Type**

**Description** *Display.* Shows the data type as BIG, SMALL, TEXT, or KANJI, depending on the format you specify.

**Consideration** MANTIS determines the Type based on the information you specify in the Format and Length:

- ◆ A Format of PACKED with a Length greater than 9 bytes and with no decimals will have a Type of TEXT, unless NUM2TXT is set to “N” in the MANTIS Customization Module.
  - ◆ A Format of ZONED with a Length greater than 16 bytes and with no decimals will have a Type of TEXT, unless NUM2TXT is set to “N” in the MANTIS Customization Module.
- 

**Element**

**Description** *Required.* Specifies the name of a TOTAL or SUPRA PDM element.

**Format** 1–8 alphanumeric characters

**Consideration** This element must currently exist in your TOTAL DBMOD/SUPRA Directory.

---

**Format**

**Description** *Required.* Indicates the format in which the data is stored in TOTAL.

**Options**

PACKED Packed decimal

ZONED Zoned (unpacked) decimal

BINARY Binary (halfword or fullword)

FLOAT Floating point

TEXT Text (character string)

KANJI Kanji (DBCS) data

## Sign

<b>Description</b>	<i>Optional.</i> Indicates whether PACKED, ZONED, or BINARY fields are signed.
<b>Default</b>	NO
<b>Options</b>	<u>N</u> O <u>Y</u> ES

---

## Dec

<b>Description</b>	<i>Required.</i> Specifies the number of decimal places for PACKED, ZONED, and BINARY numeric fields.
<b>Default</b>	0
<b>Options</b>	0–10
<b>Consideration</b>	The number of decimal places cannot exceed the number of digits in the field.

---

## Length

<b>Description</b>	<i>Display.</i> Shows the length of the specified data field as found in the TOTAL DBMOD or SUPRA Directory.
<b>Consideration</b>	Each FORMAT type has a unique maximum length (e.g., if TEXT, the maximum is 254 characters). In the TOTAL DBMOD or SUPRA Directory, you must redefine existing TOTAL or SUPRA fields that are greater than 254K as multiple fields or as subdefined fields.

---

## Dimensions

<b>Description</b>	<i>Required.</i> Specifies the dimension of a simple array for MANTIS and external variables.
<b>Options</b>	1–255
<b>Default</b>	MANTIS automatically adjusts the length field to the TOTAL element field length divided by the dimension.
<b>Consideration</b>	If the TOTAL statement stipulates multiple buffering, an additional level of dimension is generated. Do not use multiple buffering in the TOTAL statement if a TEXT field will have a dimension greater than 1, because TEXT fields can only be single dimensional arrays.

---

## Attribute

**Description**     *Optional.* Indicates the type of attribute the element contains.

**Options**            KEY can be a key element of a TOTAL single-entry file. For variable-entry files, the key can be an element associated with the link path defined earlier in the TOTAL File View Design Facility.

If MANTIS determines the element is a key or part of key, it automatically defines this field as KEY.

SCRAMBLE causes MANTIS to scramble the information for storage and unscramble it when read by a program. Key fields cannot be scrambled.

Do not use SCRAMBLE if a non-MANTIS programs will be accessing the data through TOTAL/SUPRA PDM.




---

Use SCRAMBLE only on new elements. If you use SCRAMBLE on existing data, the data will be lost with no means of recovery.

---

The following example defines a file view layout for a TOTAL file view called INVENTORY\_VIEW. INVENTORY\_VIEW accesses a TOTAL file, INVT, that contains the following items:

```

MASTER-DATA:
INVTROOT=8
INVTCTRL=6   item number (key)
INVTDESC=30  item description
INVTCOST=5   item cost (zoned)
INVTPRIC=5   item price (zoned)
INVTONHD=4   items on hand (binary)
INVTORDR=4   items on order (binary)
INVTLKCO=8   link to customer order
INVTLKPO=8   link to purchase order
END-DATA:

```

Each item in the file that INVENTORY\_VIEW references is entered as a variable NAME. Each name in a view layout must correspond to one entire TOTAL element. (You cannot subdefine TOTAL elements in a TOTAL view.) In the following screen illustration, you find information on the item number and description, the price of the item and whether the item is in stock or on order:

```

                                MANTIS
                                Total File View Layout Definition          YYYY/MM/DD
Page 1                                                                    HH:MM:SS
Name: INVENTORY_VIEW                                                    Element Count
-----M A N T I S-----T O T A L-----
Act  Name                Type Element   Format Sign Dec Length Dimension Attribute
i    item_number         invtctrl t
i    description         invtdesc t
i    cost                invtcost z          2
i    price              invtpric z          2
i    items_on_hand      invtonhd b          y
i    items_on_order     invtordr b          y

                                (USE PF1 - PF12 TO PAGE; USE CANCEL TO EXIT)

```

Press ENTER to temporarily store the TOTAL view layout definition. To return to the TOTAL File View Design Facility menu, press the CANCEL key.

## Using the Library Functions

Use the Library Functions option to save, replace, fetch, or delete TOTAL file views. Select the Library functions option from the TOTAL File View Design Facility menu by typing a 3 in the selection field and pressing ENTER or by pressing PF3. MANTIS returns the TOTAL File View Design Library Facility menu shown in the following screen illustration:

```

M A N T I S

TOTAL File View Design Library Facility

Name of view ..... :

Save ..... 1
Replace ..... 2
Fetch ..... 3
Delete ..... 4
Terminate ..... CANCEL

:

```

If a TOTAL file view design is currently in your work area, the name of the design displays. If you are saving a new view, supply the name of the view (as described below), type a 1 in the selection field and press ENTER (or press PF1). If you are updating a file view you must first fetch it. You can then perform the necessary functions on the view.

## Name of view

**Description**     *Required.* Identifies the file view you want to save, fetch, replace, or delete.

**Format**            1–16 alphanumeric character name to save a new file view; an existing file view name to perform fetch, replace, or delete actions

You can execute the following actions from the TOTAL File View Design Library Facility menu by typing the number of the action (shown in the preceding screen illustration) in the selection field and pressing ENTER or by pressing the corresponding PF key.

- |         |  |
|---------|--|
| Save    | Saves new file views and view layouts in your library. Use this function only when the file view does not already exist in your library. |
| Replace | Replaces a file design in your library with the updated version currently in your work area.   |
| Fetch   | Retrieves a file view design from your library and places it in your work area.  |
| Delete  | Deletes a file view design from your library. MANTIS asks you to confirm the deletion.   |

When the action you specified is complete, MANTIS exits to the TOTAL File View Design Facility menu and displays a confirmation message in the lower left corner of the screen. Press the CANCEL key to exit from the TOTAL File View Design Library Facility (see the preceding screen illustration) and return to the MANTIS Facility Selection Menu without completing a library function.

## Using the Directory of Views

Use the Directory of Views option to display a listing of all your TOTAL file views. Select the Directory of views option from the TOTAL File View Design Facility menu by typing a 4 in the selection field and pressing ENTER or by pressing PF4. MANTIS returns the Directory of Total File Views screen shown in the following screen illustration:

Directory of TOTAL File Views		
DIR002		YYYY/MM/DD
USER		HH:MM:SS
-----Name-----	----Status----	-----Description-----
INVENTORY_VIEW	ACTIVE	TOTAL INVENTORY FILE VIEW

### General considerations

- ◆ You can view the directory, but you cannot change it. If you want to print the list, use the Directory Facility. (See “Listing MANTIS entities using the Directory Facility” on page 326 for information on using the Directory Facility.) Notice that passwords do not display on the Directory of TOTAL File Views list.
- ◆ If a long list of TOTAL or SUPRA PDM files displays on the directory and you want to reposition the list starting at a different file name, do the following:
  1. In the bottom-left corner of the screen, enter 1–16 characters of the file name from which you want to list the files .
  2. Press ENTER.
- ◆ To display a particular range of file view names, enter a Starting Name and an Ending Name, separated by a colon (e.g., AUX:FILE), in the bottom-left corner of the screen.
- ◆ If you want to search for a set of file views whose names correspond to a particular pattern of characters, use the wildcard characters, the asterisk (\*) and the question mark (?), as follows:
  - \* Represents an indefinite number of characters. For example, \*2\* displays a Directory List of all files whose names contain a 2.
  - ? Represents a single character. PROG??? designates a file (or files) whose name begins with PROG and ends with any three characters.

Enter either parameter in the lower left corner of the Directory List.

After viewing the list of file views, press ENTER. If you are in the middle of multiple pages, ENTER will scroll you to the next page and so on, until you reach the last page. Once you reach the last page or if you are viewing a single page, pressing ENTER returns you to the TOTAL File View Design Facility menu. You can exit the listing and return to the TOTAL File View Design Facility menu at any time by pressing the CANCEL key. Press PA1 to return to the MANTIS Facility Selection Menu.

## Printing the completed view

Use the Print Completed View option to obtain a hard copy of the TOTAL view currently in your work area. Select the Print Completed View option from the TOTAL File View Design Facility menu by typing a 5 in the selection field and pressing ENTER or by pressing PF5. The file view design in your work area will be routed to the designated printer. You can print a TOTAL file view design at any time during the file view design phase.

## Listing allowed TOTAL files

Use the List Allowed TOTAL Files option to find out which TOTAL or SUPRA PDM files are available to you. To do so, type a 6 in the selection field and press ENTER, or press PF6. MANTIS returns the Allowed TOTAL Files screen shown in the following screen illustration:

```
TOV005      USER                M A N T I S                YYYY/MM/DD HH:MM:SS
                                     Allowed TOTAL Files
ALL
```

This screen can list up to 100 file view names. If you are allowed to design TOTAL views for all of the files in the system, the word ALL appears in the first position as shown above. (Your Master User established this list.)

Press the CANCEL key to exit to the TOTAL File View Design Facility menu.

## Designing external file views

You can design file views for external files by using the External File View Design Facility. A file view contains detailed information about the contents and format of the data stored in a file and allows you to monitor and control access to that data by password protecting certain functions performed on the file data.

Successful use of MANTIS external file views requires that the file definitions are consistent among VSAM, CICS, and MANTIS. Incorrect results (such as SIZE errors) may result if the file definitions do not match for such functions as maximum record size, and fixed or variable length among VSAM, CICS, and MANTIS.

By controlling access to the data in a file, you can ensure greater data security and independence. Ideally, you should not include any data that is not necessary for program execution in a file view. The program is then completely insulated from any changes (e.g., inadvertent program errors) that may occur to data fields that are not essential to the program.

Three separate passwords are provided so can assign READ, UPDATE, or DELETE/INSERT access to file data associated with external files. For example, if a user needs to look at the data in a file, but not update it, you can assign a READ password to that file.

If you have a file containing fields A, B, C, D, and E:

A	B	C	D	E
---	---	---	---	---

**File record**

and you want to create a file view that enables another user to see fields A, C, and D, but not B and E, you would create the file view as:

A	*****	C	D	*****
---	-------	---	---	-------

**File view**

The person using the file view is then not aware that fields B and E exist but sees the file record as:

A	C	D
---	---	---

**File record through the file view**

## External File View Design Facility menu

Use the External File View Design Facility to create a new external file view or personal computer file, or update the definition of an existing file view. Access this facility from the MANTIS Facility Selection Menu (see “MANTIS Facility Selection Menu” on page 21) by typing the corresponding option number in the selection field and pressing ENTER. MANTIS returns the External File View Design Facility menu as shown in the following screen illustration:

```
EXV001                                M A N T I S

                                     External File View Design Facility

Create or update file views ..... 1
Update file view layout ..... 2
Library functions ..... 3
Directory of file views ..... 4
Print completed design ..... 5
List allowed external files ..... 6
Terminate this facility ..... CANCEL

                                     :  :
```

You can move among the External File Design Facility menu options listed above without losing the file view design currently in your work area.



---

**Warning:** You must save your file view or any updates via the Library Functions (see “Using the Library Functions” on page 189) before exiting from the External File Design Facility. If you try to exit from the facility without saving current changes, MANTIS will ask you to confirm your exit. If you exit without saving, you lose your file design (if it’s new) or any changes you have made since you last saved the design.

---

The following table provides a description of and section references for the External File View Design Facility menu options:

This option	Allows you to	See
Create or update file views	Create a new file view or update an existing one.	“ <a href="#">Creating or updating a file view</a> ” on page 164
Update file view layout	Create a new view layout or update an existing one.	“ <a href="#">Updating a file view layout</a> ” on page 173
Library functions	Save, replaces, fetch, or delete file views.	“ <a href="#">Using the Library Functions</a> ” on page 189
Directory of file views	Display a list of all file views in your library.	“ <a href="#">Using the Directory of File Views</a> ” on page 191
Print completed design	Print a hard copy of your current view layout.	“ <a href="#">Printing the completed design</a> ” on page 193
List allowed external files	Display a list of allowed file views.	“ <a href="#">Listing allowed external files</a> ” on page 193

The External File View Design Facility menu presents the options in the order you perform them to create a new external file view. If you are performing update or maintenance functions, first select Library Functions to fetch or open the file view (see “[Using the Library Functions](#)” on page 189), then refer to the appropriate information.

## Creating or updating a file view

Use the Create or Update File Views option to create a new external file view or to update an existing one. To select the option from the External File View Design Facility menu (see “[External File View Design Facility menu](#)” on page 162 ) type a 1 in the selection field and press ENTER, or press PF1. MANTIS returns the File View Access screen shown in the following screen illustration:

```

EXV002                                M A N T I S

                                File View Access
Name and description of access ..... :
:
External name ..... :

Password for viewing ..... :
" altering ..... :
" deleting/inserting ..... :
Status ..... :
Indexed, sequential, or numbered ..... :
Access method ..... :
Maximum record size ..... :
Fixed or variable length ..... :
Reference variable name ..... :
Occurrence controlling element ..... :
First occurring element ..... :
Last profile update date ..... :
" " " time ..... :
SAP Information: SAP-Release      Comp  Rec-ID  Type  :
    
```

If you are updating an external file, you must first fetch the file using Library Functions. Then, when you select Create or update file view, MANTIS displays the fetched file in your work area.

Enter the data as described in the field descriptions on the following pages.

---

## Name and description of access

**Description** *Required.* Specifies the name and description of your file view design.

**Format** 1–16 alphanumeric character name and a 1–58 alphanumeric character description. The description can contain blank and special characters.

### Considerations

- ◆ The description displays when you access the Directory of External File Views.
- ◆ If your terminal supports lowercase, you can specify a description using lowercase characters.

---

## External name

**Description** Specifies the name by which this file is known to the TP system.

**Format** DOS CICS Enter a 1–7 character FCT name (DLBL name for batch)

MVS CICS Enter a 1–8 character FCT name (DD name for batch)

PC files Enter a 1–30 character name

IMS/DC Enter a 1–8 character DBD name for simulated file

---

## Password for viewing

**Description** *Optional.* Indicates that programs using this password can view records, but not alter, insert, or delete them.

**Format** 1–16 alphanumeric characters

### Considerations

- ◆ If you do not specify this password, you must specify a password for altering or a password for deleting/inserting.
- ◆ If your terminal supports lowercase, you can specify a password using lowercase characters.

---

### Password for altering

**Description** *Optional.* Indicates that programs using this password may view or alter records, but not insert or delete them.

**Format** 1–16 alphanumeric characters

#### Considerations

- ◆ If you do not specify a password for altering, you must specify a 1 for viewing or for deleting/inserting.
- ◆ If your terminal supports lowercase, you can specify a password using lowercase characters.

---

### Password for deleting/inserting

**Description** *Optional.* Indicates that programs using this password can view, alter, and delete/insert records.

**Format** 1–16 alphanumeric character password

**Consideration** If your terminal supports lowercase, you can specify a password using lowercase characters.

---

### Status

**Description** *Optional.* Specifies the status of the file.

**Consideration** You must specify ACTIVE for the status of the file. If you enter anything other than ACTIVE, MANTIS programs cannot use the file.

---

## Indexed, sequential or numbered

**Description**    *Required.* Specifies the file type of the referenced file.

**Options**        VSAM files:

INDEXED    KSDS (Key Sequenced Data Set or secondary index file,  
IMS/DC simulated file)

SEQUENTIAL    ESDS (Entry Sequenced Data Set)

NUMBERED    RRDS (Relative Record Data Set)

PC files:

NUMBERED    DIRECT files (BASIC only)

SEQUENTIAL    SEQUENTIAL files (DIF or BASIC selected on personal  
computer at run time.)

**Consideration** For Sequential and Numbered files, you can use file profile passwords in the ACCESS statement to recreate or append to a file on the PC, depending on system requirements. The following table lists considerations for using the ACCESS statement with PC files:

PC file type	ACCESS password	Comments	Functions allowed	File pointer*
SEQUENTIAL	VIEW	File must already exist.	GET	BOF
	ALTER	File must already exist.	GET	BOF
	INSERT/ DELETE	File will be recreated when the first GET or INSERT is issued. INSERT places records at the end of the file.	GET INSERT	BOF EOF
NUMBERED	VIEW	File must already exist.	GET	BOF
	ALTER	File must already exist.	GET	BOF
			UPDATE/ INSERT/ DELETE	Refer Refer Refer
	INSERT/ DELETE	File will be recreated when the first GET, INSERT, UPDATE or DELETE is issued.	GET UPDATE/ INSERT/ DELETE	BOF Refer
			DELETE	

\*BOF—Beginning of file, EOF—End of file, Refer—As determined by the value in the reference variable

**Access method**

**Description** *Required.* Designates the type and location of the external files.

**Options** V External VSAM files (mainframe)

P External personal computer (PC) files

---

## Maximum record size

**Description**     *Required.* Indicates the length of physical records in this file.

### Considerations

- ◆ It is very important to specify the correct value since MANTIS also uses this parameter to check the accuracy of the subsequent file view layout definition.
- ◆ For external fixed-length records, enter the actual record length defined for the file.
- ◆ For external variable-length records, enter the maximum record length to be stored in this file.
- ◆ You can enter a maximum value of 18000 for external files. The record size should reflect only the data length and should not include the record length prefix.
- ◆ For PC NUMBERED files you must specify the exact record length. For PC SEQUENTIAL files, MANTIS ignores this field.

---

## Fixed or variable length

**Restriction**     VSAM or IMS/DC simulated VSAM files only.

**Description**     *Required.* Indicates whether the records in an external file are fixed-length or variable-length.

**Options**         F Fixed-length records  
                      V Variable-length records

## Reference variable name

**Description** *Required* for sequential or numbered files. *Optional* for indexed files. Specifies a record identification for sequential or numbered files. This identification is necessary because no key is defined for these files (as is the case for indexed files).

### Consideration

- ◆ The reference variable is a standard BIG numeric field. MANTIS allocates it (together with all the other variables defined in the file view layout) during the processing of the ACCESS statement. This variable has the same multiple buffer allocation and prefixing requirements as all other variables defined in the file view.
- ◆ The reference variable contains the Relative Byte Address (RBA) for sequential files, or the Relative Record Number (RRN) for numbered files. Refer to the descriptions of the get, update, insert, and delete statements in *MANTIS Language, OS/390, VSE/ESA*, P39-5002, for an explanation of reference variable usage during MANTIS program execution.

---

## Occurrence controlling element (VSAM, LEASY, ISAM only)

**Restriction** Variable-length records only.

**Description** *Required* only for external variable-length files. Specifies the name of the array-controlling element defined in the file view layout that determines the record length.

**Consideration** See “[Defining variable-length record](#)” on page 185 for more information on defining variable-length records.

---

## First occurring element (VSAM, LEASY, ISAM only)

**Description** *Required* if you are using the Occurrence Controlling Element field. Defines the first occurring element in the current file view layout.

**Consideration** Use this field only with the Occurrence Controlling field. It indicates the first element that is part of an occurring data structure or the array name (if not part of a data structure) used by MANTIS to determine the record length.

## Last profile update date and time

**Description**     *Display.* Shows the date and the time of updates to the file view.

Press ENTER to temporarily store your data. MANTIS automatically returns to the External File View Design Facility menu.



---

For information on using the External File Design Facility with SAP, refer to *MANTIS SAP Facility, OS/390, VSE/ESA*, P39-7000.

---

The example in the following screen illustration creates an external file view for a VSAM KSDS file that contains variable-length records. Each record accommodates up to 20 invoice items. The name of the file view is INVOICES and it is a master file containing all company invoices. The external file referenced is INVOICE file. Different passwords are assigned for file access. The status is ACTIVE, enabling a MANTIS program using this view to proceed with the intended access. The file type is indexed (VSAM KSDS) and the records are variable-length. The maximum length of each record is 342K, excluding the record length field (which MANTIS handles for you). The occurrence controlling element and the first occurring element are named and must be later defined on the File View Layout Definition screen:

```

EXV002                                M A N T I S

                                File View Access
Name and description of access ..... : invoices      :
: company invoice file                :             :
External name .....                  : invoices    :

Password for viewing .....           : look        :
"      altering .....                 : change     :
"      deleting/inserting .....      : remove     :
Status .....                         : active     :
Indexed, sequential, or numbered ..... : i          :
Access method .....                  : v          :
Maximum record size .....            : 342        :
Fixed or variable length .....       : v          :
Reference variable name .....        :            :
Occurrence controlling element ..... : number-of-items :
First occurring element .....        : item       :
Last profile update date .....       :            :
"      "      "      time .....     :            :
SAP Information: SAP-Release          Comp  Rec-ID  Type  :

```

Press ENTER to store the data. MANTIS automatically returns to the External File View Design Facility menu. The next step in creating this view is creating the view layouts (see [“Updating a file view layout”](#) on page 173).

## Updating a file view layout

A file view layout specifies which elements a file view can reference and how the file view will reference those elements. To create or update a file view layout, select the Update File View Layout option from the External File View Design Facility menu by typing a 2 in the selection field and pressing ENTER or by pressing Pf2. MANTIS returns the File View Layout Definition screen shown in the following screen illustration:

```

EXV003 Page 1 File View Layout Definition YYYY/MM/DD
Name: Element count HH:MM:SS
-----MANTIS-----EXTERNALFILE-----
Name Type Position Format Length Sign Dec Dim Offset Attribute
- - - - - - - - - - -

```

(Use PF1 - PF16 to page; use CANCEL to exit)

If you are creating a new external file view layout, enter the data as described in the field descriptions on the following pages.

If you are updating an external file view layout, you must first fetch the file using Library Functions.

Enter the data for your view layout as described in the field descriptions on the following pages. Use the built-in tabs (indicated in the preceding screen illustration) to move from field to field and use the Alter, Insert, and Delete line commands to make the necessary changes. (See the field descriptions that follow for information on using these commands.)

Insert fields at the File View Layout Definition screen (see the preceding screen illustration) as described in the following field descriptions.

---

### Page

**Description** *Optional.* Shows the page of the view layout currently displaying.

**Consideration** Use PF1–PF16 to page through the file view layout, or type the new page number (1–16) over the current page number and press ENTER.

---

### Name

**Description** *Display.* Shows the name of the file view currently in your work area.

---

### Date and Time

**Description** *Display.* Shows the current date and time.

**Format** DATE is displayed as *YYYY/MM/DD* and Time as *HH:MM:SS*.

---

### Element count

**Description** *Display.* Shows the total number of elements currently in your file view layout.

**Consideration** MANTIS allows a maximum of 254 elements.

---

**Action (field name does not display on-screen)**

**Description**     *Required.* Indicates the action you want to take with the file view layout definition.

**Options**

- A Alter this line—key the new information over the existing fields
- I Insert this line
- D Delete this line

**Considerations**

- ◆ If the external file is defined as a PC SEQUENTIAL file, all new fields you inserted appear at the top of the list regardless of where they were inserted.
- ◆ When you issue an INSERT in programming mode, MANTIS adds fields that are not defined in the File View Design Facility with spaces. This may produce incorrect results when the missing fields are defined as numeric in other programs. Simply defining the field as the proper data type and not referencing it will set the field to 0. For more information, refer to the INSERT command in *MANTIS Language, OS/390, VSE/ESA*, P39-5002.
- ◆ When inserting fields into a layout where fields are already defined, if you do not supply a starting position and it is not the last field defined, MANTIS will not automatically recalculate the starting positions of the fields. If you want those positions to be recalculated, enter CACLPOS in the lower left-hand corner of the screen. If the fields in the view are not contiguous, enter the starting positions of each of the fields.

---

## Name

**Description** *Required.* Specifies the name you want to assign to the element.

**Format** 1–16 alphanumeric characters

---

## Type

**Description** *Display.* Specifies the data type as BIG, SMALL, TEXT, or KANJI depending on the format you specify.

**Consideration** MANTIS determines the Type based on the information you specify in the Format and Length:

- ◆ A Format of PACKED with a Length greater than 9 bytes and with no decimals will have a Type of TEXT, unless NUM2TXT is set to “N” in the MANTIS Customization Module.
  - ◆ A Format of ZONED with a Length greater than 16 bytes and with no decimals will have a Type of TEXT, unless NUM2TXT is set to “N” in the MANTIS Customization Module.
- 

## Position

**Description** *Optional.* Indicates the position (relative to 1) of this field within the file record.

### Considerations

- ◆ For variable-length records, do not count the record length prefix. For example, the first data byte of variable records has a position of 1.
- ◆ For PC SEQUENTIAL files, this field has no meaning as MANTIS positions elements in the order that they are entered into the file design.
- ◆ If you do not specify this field, MANTIS uses the next available record position as calculated based on the preceding field lengths.
- ◆ To have MANTIS recalculate the field positions, enter CALCPOS in the lower left-hand corner.
- ◆ If you are defining fields with Dimensions and Offset, then review the field position and ensure that it reflects the desired structure.

---

**Format**

**Description**    *Required.* Indicates the data storage format.

**Options**        VSAM Files:

P Packed decimal

Z Zoned (unpacked) decimal

B Binary (halfword or fullword , allowed values 4K or 8K)

E Floating point (allowed values 4K or 8K)

I Text (character string)

K Kanji (DBCS) data

PC Files:

E Floating point (allowed values 4K or 8K)

B Binary, 1- or 2-bytes integers (4K allowed for PC Contact Release 2.1 and above)

I Text (character string, maximum 255)

Z Zoned (unpacked) decimal

**Consideration** MANTIS assigns an element type of TEXT if you specify:

- ◆ A format of PACKED with a length greater than 8 bytes and no decimals
- ◆ A format of ZONED with a length greater than 15 bytes and no decimals

---

### Length

**Description**    *Required.* Indicates the length, in bytes, of the field on the file.

**Options**        1–254

---

### Sign

**Description**    *Optional.* Indicates whether the PACKED, ZONED, or BINARY fields are signed.

**Default**        NO

**Options**        YES

NO

### Considerations

- ◆ Only enter YES if PACKED, ZONED, and BINARY fields are signed.
  - ◆ For PC files, enter YES to indicate that BINARY fields are signed.
- 

### Dec

**Description**    *Optional.* Specifies the number of decimal places for PACKED, ZONED, and BINARY numeric fields.

**Default**        0 Zero

**Options**        0–10

### Considerations

- ◆ For external files MANTIS allows a maximum of 10 decimal places. The number of decimal places cannot exceed the number of digits in the field.
- ◆ For PC files, specify the number of decimal places for ZONED numeric fields. The maximum number of decimal places is 10. The number of decimal places cannot exceed the number of digits in the field.

---

## Dim

**Description** *Optional.* Specifies the dimension of a field (the number of times it occurs).

**Options** 1–255

### Consideration

- ◆ When executing the ACCESS statement, MANTIS allocates the variables specified in this file view as single occurrence fields if the DIM value is less than 2, or as an array if the DIM value is 2 or greater. The dimension of the allocated array is equal to the value supplied here.
- ◆ If the ACCESS statement stipulates multiple buffering, MANTIS generates an additional level of dimension. You should not use multiple buffering in the ACCESS statement if a TEXT field will have a dimension greater than 1, as TEXT fields can only be single-dimensional arrays.

---

## Offset

**Restriction** Applies to external and NUMBERED PC files only.

**Description** *Optional.* Indicates that a field is part of a data structure that is also a part of an array.

**Default** Length of the field

### Considerations

- ◆ The occurrence of such a field in the block of data is at an interval (offset) equal to the length of the data structure.
- ◆ Only enter a value in this field for variables that are also part of arrays (DIM value greater than 1). You cannot specify a value smaller than the LENGTH field.
- ◆ See “[Defining external data structures and arrays](#)” on page 183 for more information on data structures and arrays.

## Attribute

**Description**     *Optional.* Indicates the type of attribute the element contains.

**Options**         K Key (External INDEXED files only)

S Scramble

### Considerations

- ◆ Do not specify KEY for SEQUENTIAL and NUMBERED files or for PC files.
  - ◆ You can also specify SCRAMBLE for both external and PC files. This causes MANTIS to scramble the information for storage and unscramble it when read by a program. Key fields may not be scrambled.
- Use SCRAMBLE only on new elements. If you use SCRAMBLE on existing data, the data will be lost with no means of recovery.
- ◆ If non-MANTIS programs need to access the field, do not scramble it.
  - ◆ If you have a key field that is defined and also subdefined, specify the KEY attribute on the full key field and not on the subdefined key fields.

Press ENTER to temporarily store your file view layout. To permanently store a view layout, use the Library Functions (see “Using the Library Functions” on page 189). If you try to exit the External File View Design Facility without saving your changes, MANTIS asks you to confirm. Press the CANCEL key to return to the MANTIS Facility Selection Menu.

The following example file view layout specifies which elements a file view references and how the view references them. One method for defining data fields is to first define all the fields that are in the record, then store the complete view in the library. Later, for each subset of the complete view, fetch the original file view design and delete any field that is not required for the current file view. Using this method, you ensure a greater degree of accuracy for each defined field as well as consistency throughout your applications. The data fields are defined as shown in the following screen illustration:

EXV003 Page 1		File View Layout Definition						YYYY/MM/DD	
Name:		Element count						HH:MM:SS	
-----MANTIS-----		-----EXTERNAL FILE-----							
Name	Type	Position	Format	Length	Sign	Dec	Dim	Offset	Attribute
i customer		1	z	6					k
i del_address		7	t	30			3	30	
i billing_amount		97	p	4	y				
i number_of_items		101	b	2					
i item		103	t	6			20	12	
i quantity		109	b	2	y		20	12	
i price		111	p	4	y	2	20	12	

(Use PF1 - PF16 to Page; Use CANCEL to exit)

After entering the data for the fields, press ENTER. MANTIS stores the data and returns the view layout definition with the data for Page, Element Count, and Type fields completed. MANTIS also completes the Format and Attribute fields, as shown in the following screen illustration:

```

EXV003 Page 1 File View Layout Definition YYY/YY/MM/DD
Name: Element count HH:MM:SS
-----M A N T I S----- -E X T E R N A L F I L E-----
Name Type Position Format Length Sign Dec Dim Offset Attribute
CUSTOMER BIG 1 ZONED 6 KEY
DEL_ADDRESS TEXT 7 TEXT 30 3 30
BILLING_AMOUNT BIG 97 PACKED 4 YES
NUMBER_OF_ITEMS SMALL 101 BINARY 2
ITEM TEXT 103 TEXT 6 20 12
QUANTITY SMALL 109 BINARY 2 YES 20 12
PRICE BIG 111 PACKED 4 YES 2 20 12

(Use PF1 - PF16 to Page; Use CANCEL to exit)
    
```

Use the Alter, Insert, and Delete line commands to make any additional changes to the view layout and press ENTER. Press the CANCEL key to return to the External File View Design Facility menu.

## Defining external data structures and arrays

You can define a data structure, an array, or a combination of both through the file view layout. For example, the following is a COBOL record definition of company invoices:

```

01 INVOICES.
   03 CUSTOMER                PIC 9(6).
   03 DEL-ADDRESS              PIC X(30)    OCCURS 3 TIMES.
   03 BILLING-AMOUNT           PIC S9(7)    COMP-3.
   03 INVOICE-LINES.
       05 ITEM                  PIC X(6).
       05 QUANTITY              PIC S999    COMP.
       05 PRICE                 PIC S9(5)V99 COMP-3.
    
```

To define the same invoice record in MANTIS, enter the data on the File View Layout Definition screen as shown in the following screen illustration:

EXV003 Page 1		File View Layout Definition						YYYY/MM/DD	
Name:		Element count						HH:MM:SS	
-----MANTIS-----		-----EXTERNAL FILE-----							
Name	Type	Position	Format	Length	Sign	Dec	Dim	Offset	Attribute
i customer		1	z	6					k
i del_address		7	t	30			3	30	
i billing_amount		97	p	4	y				
i item		101	t	6		20	12		
i quantity		109	b	2	y	20	12		
i price		111	p	4	y	2	20	12	

(Use PF1 - PF16 to Page; Use CANCEL to exit)

In the COBOL definition, the two variables, INVOICES and INVOICE-LINES, have not been specified in the file view layout since they represent data structures and not individual fields.

Change the hyphen in the COBOL variable BILLING-AMOUNT to an underscore ( \_ ) in the MANTIS definition BILLING\_AMOUNT. (MANTIS variables can only be composed of letters, digits, and underscores.) See “[Overview of MANTIS facilities](#)” on page 19 for more information on naming variables.

The following screen illustration shows the expanded INVOICES record:

EXV003 Page 1	File View Layout	Definition	Element count	YYYY/MM/DD
Name:				HH:MM:SS
-----M A N T I S-----	-----E X T E R N A L F I L E-----			
Name	Type	Position	Format	Length
CUSTOMER	BIG	1	ZONED	6
DEL_ADDRESS	TEXT	7	TEXT	30
BILLING_AMOUNT	BIG	97	PACKED	4
ITEM	TEXT	101	TEXT	6
QUANTITY	SMALL	107	BINARY	2
PRICE	BIG	109	PACKED	4
			Sign	Dec
				2
			Dim	Offset
			3	30
			20	12
			20	12
			20	12
			Attribute	KEY

(Use PF1 - PF16 to Page; Use CANCEL to exit)

The ADDRESS is 30 bytes long and occurs three times. Since each occurrence is 30 bytes from the start of the previous one, the OFFSET is 30.

The ITEM, QUANTITY, and PRICE elements each occur 20 times. However, all of them are a part of the data structure INVOICE-LINES. The occurrence of each of these elements is every 12 bytes (the sum of lengths for ITEM, QUANTITY, and PRICE—6, 2, and 4, respectively). The OFFSET for all of them is 12. The new INVOICE record allows for 20 separate items and is 340 bytes long.

Press ENTER to temporarily store the definition. Press the CANCEL key returns to the External File View Design Facility menu.

## Defining variable-length record

This section uses the example INVOICE record defined in “[Defining external data structures and arrays](#)” on page 183. This record is 340 bytes long. Assuming that on the average each invoice contains only three items and that the records are of the fixed-length type, there are 204 bytes of wasted space on each record. To overcome such a waste, many users prefer using the variable-length type records. In this case, make each record long enough only to contain the meaningful invoice information.

To change a fixed-length record to a variable-length record, you need to create another field, NUMBER-OF-ITEMS. This field will determine the number of times the data structure INVOICE-LINES actually occurs. The adjusted COBOL definition is:

```
01  INVOICES .
03  CUSTOMER                PIC 9(6) .
03  DEL-ADDRESS             PIC X(30)      OCCURS 3 TIMES .
03  BILLING-AMOUNT         PIC S9(7)      COMP-3 .
03  NUMBER-OF-ITEMS        PIC 999        COMP .
03  INVOICE-LINES          OCCURS 20 TIMES
                                DEPENDING ON NUMBER-OF-ITEMS .
05  ITEM                   PIC X(6) .
05  QUANTITY               PIC S999      COMP .
05  PRICE                  PIC S9(5)V99  COMP-3 .
```

The File View Layout Definition for a variable-length record is shown in the following screen illustration:

EXV003 Page 1		File View Layout Definition						YYYY/MM/DD	
Name:		Element count						HH:MM:SS	
-----M A N T I S-----	-----E X T E R N A L F I L E-----								
Name	Type	Position	Format	Length	Sign	Dec	Dim	Offset	Attribute
CUSTOMER	BIG	1	ZONED	6					KEY
DEL_ADDRESS	TEXT	7	TEXT	30			3	30	
BILLING_AMOUNT	BIG	97	PACKED	4	YES				
NUMBER_OF_ITEMS	SMALL	101	BINARY	2					
ITEM	TEXT	103	TEXT	6			20	12	
QUANTITY	SMALL	109	BINARY	2	YES		20	12	
PRICE	BIG	111	PACKED	4	YES	2	20	12	

(Use PF1 - PF16 to Page; Use CANCEL to exit)

An additional field, NUMBER\_OF\_ITEMS, has been defined. This is the Occurrence Controlling Element mentioned in “[Creating or updating a file view](#)” on page 164. ITEM is the First Occurring Element.

Before writing the record to the external file, MANTIS checks the contents of the NUMBER\_OF\_ITEMS variable before outputting ITEM, QUANTITY, and PRICE. MANTIS adjusts the length of the record to reflect the number of invoice items. Similarly, when reading the record, MANTIS first checks the contents of the Occurrence Controlling Element before deciding how many times to expect the dependent elements.

Sometimes the variable-length records do not have a variable-length array that can be used to adjust the record length at the end. When storing such records, MANTIS assumes that the record length is the sum of the position and the field length of the last element in the File View Layout Definition.

Not all variable-length records fit so neatly into definitions. Many installations use the variable-length technique to store different types of records in the same file. Each record type, in such cases, has a different layout and length. MANTIS can still retrieve and update such combinations of records, if you define a separate file view for each record type.

To return to the File View Design Facility menu, press the CANCEL key.

## Defining BASIC or DIF type data structure and arrays

You can define a data structure, an array or a combination of both for BASIC or DIF files through the file view layout. The file view layout definition looks the same for both BASIC and DIF files, since PC CONTACT formats data into BASIC and DIF file types at the PC level. In this example, assume that you have the following record definition of company invoices:

CUSTOMER	TEXT	6 BYTES	
BILLING AMOUNT	FLOAT	7 BYTES	2 DEC
ITEM	TEXT	6 BYTES	
QUANTITY	BINARY	3 BYTES	
PRICE	FLOAT	7 BYTES	2 DEC

To define this invoice record using the file view layout, you enter the data shown in the following screen illustration:

```

EXV003 Page 1          File View Layout Definition          YYYY/MM/DD
Name:                  Element count                      HH:MM:SS

-----MANTIS-----  -----EXTERNALFILE-----
      Name           Type   Position Format Length Sign Dec  Dim Offset Attribute
i customer          1     t     6
i billing_amount    7     f     4
i item              11    t     6
i quantity          17    b     2     y
i price             19    f     8

(Use PF1 - PF16 To Page; Use CANCEL to exit)
    
```

To expand the record, add a delivery address field, allowing more than one item to appear on the invoice:

CUSTOMER	TEXT	6 BYTES	
DEL_ADDRESS	TEXT	30 BYTES	
BILLING_AMOUNT	FLOAT	7 BYTES	2 DEC
ITEM	TEXT	6 BYTES	
QUANTITY	BINARY	3 BYTES	
PRICE	FLOAT	7 BYTES	2 DEC

The expanded INVOICES\_PC record using the file view is shown in the following screen illustration:

EXV003 Page 1		File View Layout Definition				YYYY/MM/DD			
Name:		Element count				HH:MM:SS			
-----M A N T I S-----		-----E X T E R N A L F I L E-----							
Name	Type	Position	Format	Length	Sign	Dec	Dim	Offset	Attribute
CUSTOMER	TEXT	1	TEXT	6					
DEL ADDRESS	TEXT	7	TEXT	30			3	30	
BILLING_AMOUNT	SMALL	97	FLOAT	4					
ITEM	TEXT	101	TEXT	6			20	16	
QUANTITY	SMALL	107	BINARY	2	YES		20	16	
PRICE	BIG	109	FLOAT	8			20	16	

(Use PF1 - PF16 to Page; Use CANCEL to exit)

The address is 30 bytes long and occurs three times. The new INVOICES\_PC record allows for 20 separate items and is 340 bytes long.

To return to the External File View Design Facility menu, press the CANCEL key.

## Using the Library Functions

Use the Library Functions option to save, replace, fetch, and delete external file views. Select this option from the External File View Design Facility menu by typing a 3 in the selection field and pressing ENTER or by pressing PF3. MANTIS returns the External File View Library Facility menu shown in the following screen illustration:

```

EXV004                                M A N T I S

                                     External File View Library Facility

Name of file view ..... :           :

Save ..... 1
Replace ..... 2
Fetch ..... 3
Delete ..... 4
Terminate ..... CANCEL

                                     :   :

```

If an external file view design is currently in your work area, the name of the design displays. Save the file view design by typing a 1 in the selection field and pressing ENTER or by pressing PF1.

To update an existing file view design you must first fetch it. You can then perform the necessary functions on the view. Field descriptions for this screen are on the following pages.

---

### Name of file view

**Description**    *Required.* Identifies the file view you want to save, fetch, replace or delete.

**Format**        1–16 alphanumeric character name to save a new file view; an existing file view name to perform fetch, replace or delete actions

You can execute the following actions from the External File View Library Facility menu by typing the number of the action (shown in the preceding screen illustration) in the selection field and pressing ENTER or by pressing the corresponding PF key.

- |         |   |
|---------|---|
| Save    | Saves new file views and view layouts in your library. Use this function only when the file view does not already exist in your library.  |
| Replace | Replaces a file view design in your library with an updated version currently in your work area.  |
| Fetch   | Retrieves a file view design from your library and places it in your work area.   |
| Delete  | Deletes a file view design from your library. MANTIS asks you to confirm the deletion. When you delete the file view design, MANTIS deletes all associated layouts. (Note: Before you delete a file view design, make sure no other file view uses the same record layout. If so, no one can use the file view until you design a new record layout.) |

When the action you specify is complete, MANTIS exits to the External File View Design Facility menu and displays a confirmation message in the lower-left corner of the screen. Press the CANCEL key to exit from the External File View Library Facility (see the preceding screen illustration) and return to the External File View Design Facility menu without completing a library function.

## Using the Directory of File Views

Use the Directory of File Views option to display an alphabetic listing of all existing external file views. Select the Directory of File Views option from the External File View Design Facility menu by typing a 4 in the selection field and pressing ENTER or by pressing PF4. MANTIS returns the Directory of External File Views screen shown in the following screen illustration:

DIR002	Directory of External Files		YYYY/MM/DD
TEST			HH:MM:SS
-----Name-----	-----Status-----	-----Description-----	
INVOICES	ACTIVE	MASTER FILE OF ALL COMPANY INVOICES	

### General considerations

- ◆ You can view the directory, but you cannot change it. If you want to print the list, use the Directory Facility. (See “[Listing MANTIS entities using the Directory Facility](#)” on page 326 for information on using the Directory Facility.) Notice that passwords do not display on the Directory of External File Views list.
- ◆ If the list of External file views is long and you want to reposition the list starting at a different file name, do the following:
  1. In the bottom-left corner of the screen, enter 1–16 characters of the file name from which you want to start the list .
  2. Press ENTER.
- ◆ To display a particular range of file view names, enter a Starting Name and an Ending Name, separated by a colon (e.g., AUX:FILE), in the bottom-left corner of the screen.
- ◆ If you want to search for a set of file views whose names correspond to a particular pattern of characters, use the wildcard characters, the asterisk (\*), and the question mark (?) as follows:
  - \* Represents an indefinite number of characters. For example, \*2\* displays a Directory List of all files whose names contain a 2.
  - ? Represents a single character. PROG??? designates a file (or files) whose name begins with PROG and ends with any three characters.

Enter either parameter in the lower-left corner of the Directory List.

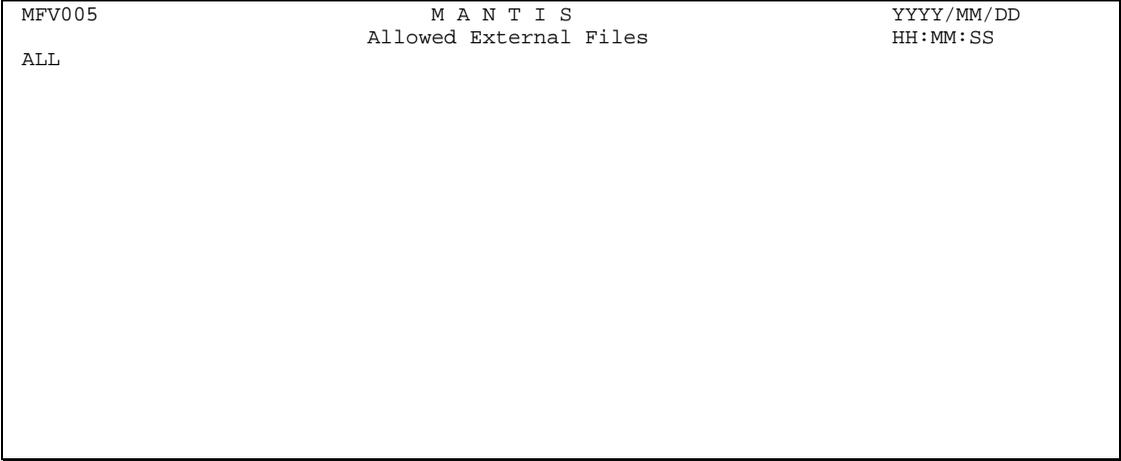
After viewing the list of file views, press ENTER. If you are in the middle of multiple pages, ENTER will scroll you to the next page and so on, until you reach the last page. Once you reach the last page or if you are viewing a single page, pressing ENTER returns you to the External File View Design Facility menu (see “[External File View Design Facility menu](#)” on page 162). You can exit the directory and return to the External File View Design Facility menu at any time by pressing the CANCEL key. Press PA1 to return to the MANTIS Facility Selection Menu.

## Printing the completed design

Use the Print Completed Design option to obtain a hard copy of your current file view. You can return to the External File View Design Facility menu at any time during the file view design phase and select the Print Completed Design option by typing a 5 in the Selection field and pressing ENTER or by pressing PF5. This routes the current file view design screen and any associated file view layout screens to your designated printer.

## Listing allowed external files

Your Master User can restrict user access to external file names to prevent access to confidential information (like payroll, marketing, or privileged research data). To find out which files are available to you, select the List Allowed External Files option from the External File View Design Facility menu by typing a 6 in the selection field and pressing ENTER or by pressing PF6. MANTIS returns Allowed External Files screen shown in the following screen illustration:



MANTIS can list up to 100 file names on this screen. Since personal computer file names can be 30 characters long, up to 40 personal computer files are listed on each screen. If you are allowed to design file views for all of the files in the system, the word ALL appears in the very first position as shown above.

Press the CANCEL key or ENTER to exit from this facility and to return to the External File View Design Facility menu.



# 4

## Designing prompters

You can use prompters to present online help information to users. This includes online help for programs, files and screens. You can also use prompters to document certain aspects of company policy or procedure.

### Prompter Design Facility menu

To access the Prompter Design Facility, select the Design a Prompter option from the MANTIS Facility Selection Menu (see “[MANTIS Facility Selection Menu](#)” on page 21) by the typing the option number in the selection field and pressing ENTER.

MANTIS returns the Prompter Design Facility menu shown in the following screen illustration:

```
PRD001                                M A N T I S

                                Prompter Design Facility

Create or update a prompter ..... 1
Set tabs ..... 2
Library functions ..... 3
Directory of prompters ..... 4
Display completed design ..... 5
Print completed design ..... 6
Terminate this facility ..... CANCEL

                                :  :
```

You can move among the Prompter Design Facility menu options without losing the prompter design currently in your work area.

The following table provides a brief description of and section references for the Prompter Design Facility menu options:

This option	Allows you to	See
Set tabs	Set tabs to specific format positions.	"Setting tabs" on page 199
Create or update a prompter	Create a new prompter or updates an existing one.	"Creating or updating a prompter" on page 202
Library functions	Save, replace, fetch or delete prompter designs.	"Using the Library Functions" on page 207
Directory of prompters	Display a list of all prompter designs in your library.	"Using the Directory of Prompters" on page 210
Display completed design	Display a completed prompter design.	"Displaying the completed design" on page 212
Print completed design	Print a hard copy of a prompter design.	"Printing the completed design" on page 212

This chapter reflects the steps you take to create a new prompter. To update an existing prompter, you must first fetch the prompter design from your library using Library functions (see "Using the Library Functions" on page 207), then select the options as needed from the Prompter Design Facility menu.

### General considerations

- ◆ A prompter allows up to 80 lines of text. The current prompter length displays in the top-right corner of the screen: `LINES=n` (see “[Creating or updating a prompter](#)” on page 202). Each screen displays 20 lines of the prompter so you can have up to 4 pages of text per prompter.
- ◆ If your terminal provides lowercase support for text characters, MANTIS accepts the text you enter in a prompter as you enter it (any combination of uppercase and lowercase characters).



---

You can determine the case for input text only. Once you save a prompter with text entered in lowercase or forced uppercase, the only way to alter the prompter display is to rekey the text. For example, if you design and save a help prompter with lowercase characters, and you later decide you want the help prompter to display with all uppercase letters, you must select the Create or Update a Prompter option and type over the text.

---

- ◆ If your terminal supports lowercase, you can enter the description and password for a prompter using lowercase characters at the Prompter Design Facility menu. The description entered here becomes the title the prompter displays (see “[Using the Library Functions](#)” on page 207).
- ◆ If your terminal *does not* support lowercase, MANTIS translates all text to uppercase regardless of how you enter it.

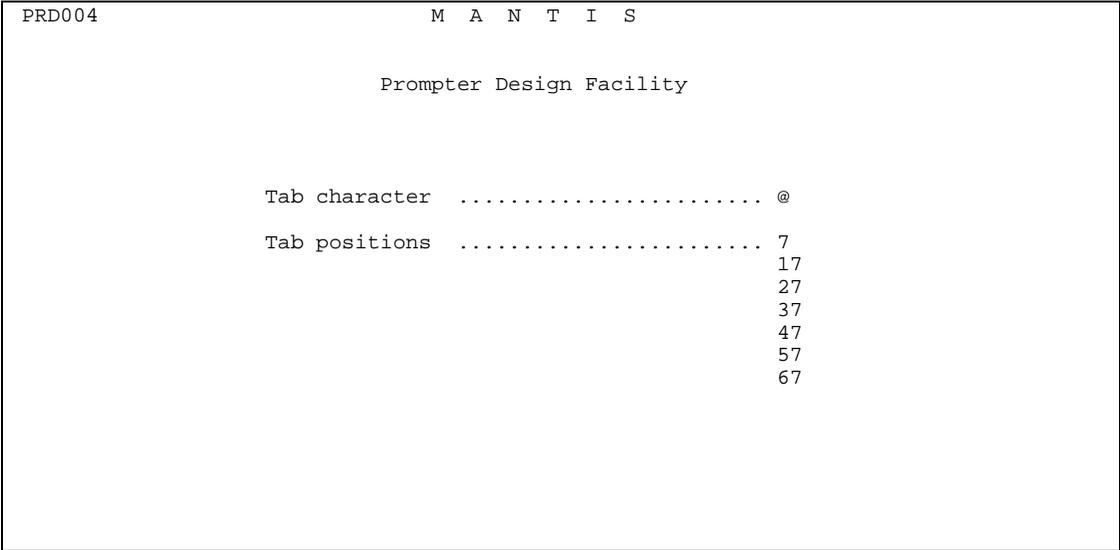
Save your new prompter design or updates using the Library Functions option before exiting from the Prompter Design Facility. (See “[Using the Library Functions](#)” on page 207 for information on using the Library Functions.) If you try to exit from the facility without saving current changes, MANTIS asks you to confirm your exit.

# Setting tabs

Use the Set Tabs option to:

- ◆ Change the default tab character
- ◆ Change the default tab positions to reflect the format you need for your prompter design

Select the Set Tabs option from the Prompter Design Facility menu by typing a 2 in the selection field and pressing ENTER or by pressing PF2. MANTIS returns the screen shown in the following screen illustration:



Set these options as described in the field descriptions on the following pages.

---

### Tab character

**Description**    *Optional.* Indicates the character that will represent a tab position.

**Default**        @    At sign

#### Considerations

- ◆ You can designate any character in the MANTIS character set as a tab character. (See “[MANTIS character set](#)” on page 33 for the MANTIS character set.)
- ◆ Overtyping the default tab character with the character you are using.

---

### Tab positions

**Description**    Indicates the columns in which you set tabs.

**Default**        7, 17, 27, 37, 47, 57, and 67

#### Considerations

- ◆ The default tab settings are displayed on the Set Tabs screen.
- ◆ Overtyping the defaults with the tab settings you require. (You can designate up to 7.)
- ◆ Use ERASE EOF to remove any unwanted tab position entries from the screen.

The fields have been set as follows:

- ◆ The new tab character is a slash character (/);
- ◆ The new tab positions are 29 and 57.

An example of tab settings for a new prompter design are shown in the following screen illustration:

```
PRD004                                M A N T I S

                                     Prompter Design Facility

Tab character ..... /
Tab positions ..... 29
                                     57
```

After you type in your tab character and tab positions (or, if you want to accept the default settings), press ENTER. MANTIS accepts your changes and returns you to the Prompter Design Facility menu (see the screen illustration at the beginning of this section).

## Creating or updating a prompter

The Create or Update a Prompter option allows you to create a new prompter design or update a prompter design. To create a new prompter, first set tab character and tab positions as your design requires. (See “[Setting tabs](#)” on page 199 for information on setting these fields.) If you are updating a prompter, you need to fetch it using Library Functions (see “[Using the Library Functions](#)” on page 207).

Select the Create or Update a Prompter option from the Prompter Design Facility menu (see “[Setting tabs](#)” on page 199) by typing a 1 in the selection field and pressing ENTER or by pressing PF1. MANTIS returns the prompter design work area shown in the following screen illustration:

```
PRD003 Page 1          MANTIS Prompter Design Facility          Lines =
....|.@..1....|.@..2....|.@..3....|.@..4....|.@..5....|.@..6....|.@..7....|..
```

The scale line across the top of the prompter design work area reflects the tab settings specified for the prompter design currently in the work area. This example shows the default settings. The @ (at sign) is the default tab character and it displays at the default tab positions at columns 7, 17, 27, 37, 47, 57 and 67.

You can manipulate information in the prompter design work area using the A (Alter), I (Insert), and D (Delete) action indicators. Enter these indicators in the first tab position (see the following screen illustration) of the row you want to alter, insert, or delete. You enter the actual text for a prompter beginning in the second tab position. The action indicators work as follows:

A Alters the line on which the A indicator appears. Type an A in the first tab position, key the new text over the existing text, and press ENTER.

I Inserts a new line on a blank line or between existing lines.

To insert a new line on a blank line, type an I in the first tab position and the new text beginning at the second tab position.

To insert a new line between existing lines:

1. Position your cursor on the existing line that you want your new line to follow.
2. In the first tab position, enter an I.
3. In the second tab position, enter the new line. Although you overtyped the existing line, MANTIS restores it later.
4. Press ENTER.

MANTIS restores the existing line, displays the new line after the existing line, and bumps all other lines one row down.

D Deletes a line. Type a D in the first tab position of the line you want deleted and press ENTER.

The following field descriptions apply to the prompter design work area (see the preceding screen illustration):

---

## Page

**Description** *Optional.* Displays the page number of the prompter in the work area. Prompters can have up to four pages.

**Default** 1

### Considerations

- ◆ To page through the prompter, use PF1–PF4 or type the new page number (1–4) over the number currently in the field and press ENTER.
- ◆ Prompters can have up to four pages with a maximum of 20 lines on each page.

---

## Lines

**Description** *Display.* Shows the total number of lines in the prompter.

The following example creates a new prompter that provides valid state abbreviations for an order-entry application. If a user enters an invalid state code (e.g., O instead of OH for Ohio) MANTIS displays an error message and directs the user to press a help key which returns the State\_Code prompter. The prompter displays a list of the correct state abbreviations.

For this prompter, the tab settings are specified as follows (see “[Setting tabs](#)” on page 199 for information on specifying case and tabs settings):

- ◆ The tab character for the prompter is a slash character (/). There will be three columns on the prompter and the tab character indicates the start of a new column.
- ◆ The three columns on the prompter begin in column 1 (you do not need to specify a tab position for this column), column 30 and column 57.

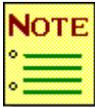
Data for the State\_Code prompter is entered shown in the following screen illustration:

```

PRD003 Page 1                MANTIS Prompter Design Facility                Lines =
....|./..1....|./..2....|./..3....|./..4....|./..5....|./..6....|./..7....|..
i al - alabama/ky - kentucky/nd - north dakota
i ak - alaska/la - louisiana/oh - ohio
i az - arizona/me - maine/ok - oklahoma
i ar - arkansas/md - maryland/or - oregon
i ca - california/ma - massachusetts/pa - pennsylvania
i co - colorado/mi - michigan/ri - rhode island
i ct - connecticut/mn - minnesota/sc - south carolina
i de - delaware/ms - mississippi/sd - south dakota
i dc - district of columbia/mo - missouri/tn - tennessee
i fl - florida/mt - montana/tx - texas
i ga - georgia/ne - nebraska/ut - utah
i hi - hawaii/mv - nevada/vt - vermont
i id - idaho/nh - new hampshire/va - virginia
i il - illinois/nj - new jersey/wa - washington
i in - indiana/nm - new mexico/wv - west virginia
i ia - iowa/ny - new york/wi - wisconsin
i ks - kansas/nc - north carolina/wy - wyoming

```

After you type the data for a prompter design, press ENTER.



**Warning:** If you press the CANCEL key before you press ENTER, all unsaved additions and updates will be lost.

The following screen illustration shows the State\_Code prompter after ENTER is pressed. Notice that wherever a tab character was designated, MANTIS moved the data directly following the tab to the next tab position. Also note that since the terminal does not support lowercase, MANTIS translates the text to uppercase. If the terminal supported lowercase, the text for the prompter would appear as it was originally entered in the preceding screen illustration.



If your terminal supports lowercase, you can determine the case for input text only. Once you save a prompter with text entered in lowercase or forced uppercase, the only way to alter the prompter is to retype it.

```

PRD003 Page 1                MANTIS Prompter Design Facility                Lines =
...|_@.1...|_@.2...|_@.3...|_@.4...|_@.5...|_@.6...|_@.7...|.....
AL - ALABAMA                KY - KENTUCKY                ND - NORTH DAKOTA
AK - ALASKA                 LA - LOUISIANA              OH - OHIO
AZ - ARIZONA                ME - MAINE                  OK - OKLAHOMA
AR - ARKANSAS               MD - MARYLAND              OR - OREGON
CA - CALIFORNIA            MA - MASSACHUTSETTS        PA - PENNSYLVANIA
CO - COLORADO              MI - MICHIGAN              RI - RHODE ISLAND
CT - CONNECTICUT          MN - MINNESOTA             SC - SOUTH CAROLINA
DE - DELAWARE              MS - MISSISSIPPI           SD - SOUTH DAKOTA
DC - DISTRICT OF COLUMBIA  MO - MISSOURI              TN - TENNESSEE
FL - FLORIDA               MT - MONTANA                TX - TEXAS
GA - GEORGIA               NE - NEBRASKA              UT - UTAH
HI - HAWAII                NV - NEVADA                 VT - VERMONT
ID - IDAHO                  NH - NEW HAMPSHIRE         VA - VIRGINIA
IL - ILLINOIS              NJ - NEW JERSEY            WA - WASHINGTON
IN - INDIANA                NM - NEW MEXICO            WV - WEST VIRGINIA
IA - IOWA                  NY - NEW YORK              WI - WISCONSIN
KS - KANSAS                 NC - NORTH CAROLINA        WY - WYOMING
    
```

When you view this prompter through the Display a Prompter Facility on the MANTIS Facility Selection Menu, the prompter text displays along with a centered heading. MANTIS uses the description you provide when you save the prompter (see “Using the Library Functions” on page 207). The scale line and line numbers do not display when you use this facility.

When you display the prompter from a MANTIS program (with the PROMPT statement), the heading field becomes pen detectable (with an attribute of BRIGHT). If you touch this field with a light pen, MANTIS displays the next page of the prompter. Selecting this field simulates pressing ENTER.

## Using the Library Functions

Use the Library Functions option to save, replace, fetch and delete prompter designs. Select the Library Functions option from the Prompter Design Facility menu (see “[Setting tabs](#)” on page 199) by typing a 3 in the selection field and pressing ENTER or by pressing PF3. MANTIS returns the Prompter Design Library Facility menu shown in the following screen illustration.

```

PRD005                                M A N T I S

                                Prompter Design Library Facility

Name and description ..... :           :
:                               :           :
Password ..... :           :           :
Chain to next prompter ..... :           :

                                Save ..... 1
                                Replace ..... 2
                                Fetch ..... 3
                                Delete ..... 4
                                Terminate ..... CANCEL

                                :           :

```

If you have an existing prompter design in your work area, the name and description of that prompter displays. The password does not display. To save a new prompter enter the information as described in the field descriptions on the following pages.

When MANTIS completes the action you specify, it returns to the Prompter Design Facility menu and displays a confirmation message in the lower left-hand corner of the screen.

---

### Name of prompter

- Description** *Required.* Identifies the prompter you want to save, fetch, replace, or delete.
- Format** 1–16 alphanumeric character name to save a new prompter, an existing prompter name to perform replace, fetch, or delete
- Consideration** MANTIS always translates the prompter name to uppercase.

---

### Password

- Description** *Optional* to fetch a prompter, *Required* to replace, save, or delete a prompter. Specifies the password to allow access to this prompter.
- Format** 1–16 alphanumeric characters
- Consideration** If your terminal supports lowercase, you can specify a password using lowercase characters.

---

### Chain to next prompter

- Description** *Optional.* Specifies the prompter that will display automatically when the current prompter is finished.

#### Considerations

- ◆ Use this option when you have more information than can fit in one prompter. (One prompter can have 4 pages, or 80 lines of text.)
- ◆ The prompter name you specify does not have to exist when you are designing your current prompter. If you do not want to chain to another prompter, do not enter NONE or MANTIS will search for a prompter named NONE.
- ◆ You can chain together a maximum of 4 prompters.

---

## Description

**Description**     *Required* to save a new prompter. *Optional* to replace, fetch, or delete a prompter.

**Format**            1–50 alphanumeric characters

## Considerations

- ◆ If you are updating an existing prompter design, MANTIS displays the existing description. You can change the description of a prompter by typing over the existing description and using the Replace option.
- ◆ MANTIS places the description in the Directory of Prompters and uses it as a title whenever you display this prompter. (Since the heading is displayed in bright intensity, it is pen-detectable.)
- ◆ If your terminal supports lowercase, you can enter a description containing lowercase characters.

You can execute the following actions from the Prompter Design Library Facility menu by typing the number of the action in the selection field and pressing ENTER or pressing the corresponding PF key.

Action	Description
Save	Saves new prompter designs in your library. Use this function only when the prompter does not already exist in your library.
Replace	Replaces a prompter design in your library with an updated version currently in your work area.
Fetch	Retrieves a prompter design from your library and places it in your work area.
Delete	Deletes a prompter design from your library. MANTIS asks you to confirm the deletion.

When the action you specified is complete, MANTIS exits to the Prompter Design Facility menu and displays a confirmation message in the lower-left corner of the screen. Press the CANCEL key to exit from the Prompter Design Library Facility (see the screen illustration at the beginning of this section) and return to the Prompter Design Facility menu without completing a library function.

## Using the Directory of Prompters

Use the Directory of Prompters option to display an alphabetic listing of all existing prompter designs. Select the Directory of Prompters option from the Prompter Design Facility menu by typing a 4 in the selection field and pressing ENTER or by pressing PF4. The names and descriptions of all saved prompters display. MANTIS returns the Directory of Prompters screen shown in the following screen illustration:

DIR002	Directory of Prompters		YYYY/MM/DD
USER			HH:MM:SS
-----Name-----	-----Password-----	-----Description-----	
STATE_CODE	USER	STATE CODES	

### General considerations

- ◆ You can view the directory, but you cannot change it. If you want to print the list, use the Directory Facility. (See [“Listing MANTIS entities using the Directory Facility”](#) on page 326 for information on using the Directory Facility.)
- ◆ If the list of prompters is long and you want to reposition the list starting at a different prompter name, do the following:
  1. In the bottom-left corner of the screen, enter 1–16 characters of the prompter name from which you want to start the list .
  2. Press ENTER.

- ◆ To display a particular range of prompter names, enter a Starting Name and an Ending Name, separated by a colon (e.g., AUX:PROMPT), in the bottom-left corner of the screen.
- ◆ If you want to search for a set of prompters whose names correspond to a particular pattern of characters, use the wildcard characters, the asterisk (\*) and the question mark (?), as follows:
  - \* Represents an indefinite number of characters. For example, \*2\* displays a Directory List of all files whose names contain a 2.
  - ? Represents a single character. PROMPT??? designates a prompter (or prompters) whose name begins with PROMPT and ends with any three characters.

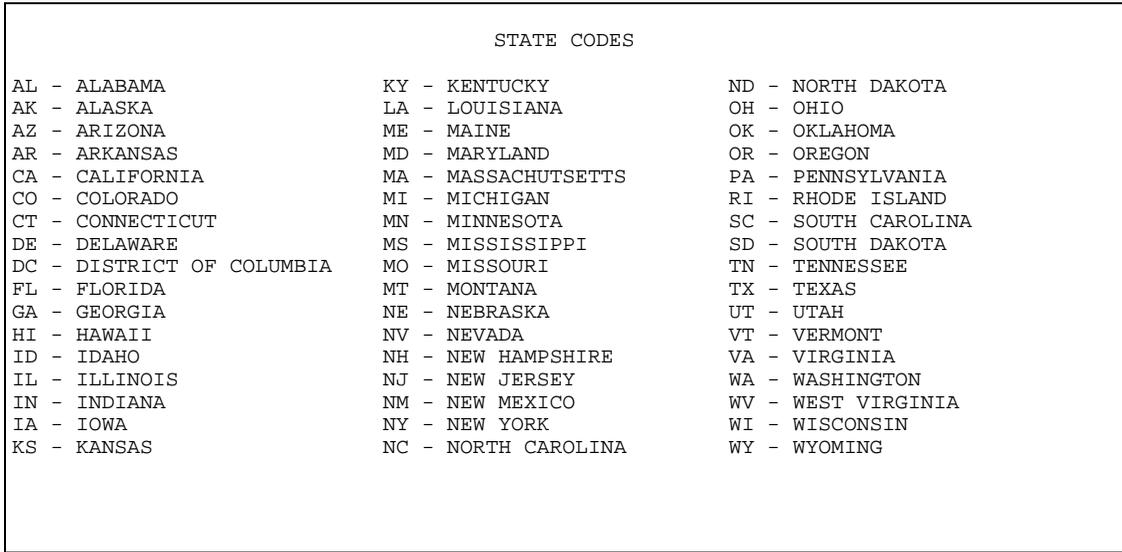
Enter either parameter in the lower-left corner of the Directory List.

After viewing the list of prompters, press ENTER. If you are in the middle of multiple pages, ENTER will scroll you to the next page and so on, until you reach the last page. Once you reach the last page or if you are viewing a single page, pressing ENTER returns you to the Prompter Design Facility menu (see “[Prompter Design Facility menu](#)” on page 195). You can exit the listing and return to the Prompter Design Facility menu at any time by pressing the CANCEL key. To return directly to the MANTIS Facility Selection Menu, press PF1.

---

## Displaying the completed design

To display your finished prompter design, select the Display Completed Design option from the Prompter Design Facility menu by typing a 5 in the selection field and pressing ENTER, or by pressing PF5. MANTIS displays the prompter currently in your work area, as in the example in the following screen illustration:



You can return to the Prompter Design Facility menu at any time during the prompter design phase and select the Display Completed Design option. Press ENTER to view multiple pages of the prompter display. Press the CANCEL key to end the prompter display and return to the Prompter Design Facility menu.

---

## Printing the completed design

Use the Print completed design option to obtain a hard copy of your current prompter design. You can return to the Prompter Design Facility menu at any time during the prompter design phase and select this option by typing a 6 in the selection field and pressing ENTER or by pressing PF6. MANTIS routes the current prompter design to your designated printer.

# 5

## Designing interfaces

The Interface Design Facility allows you to design and save new interface profiles and to update and perform maintenance functions on existing interface profiles. Interfaces allow MANTIS to communicate with programs written in languages other than MANTIS (such as COBOL or ASSEMBLER). MANTIS passes data back and forth through the interface.



---

If you have interfaces designed under previous releases of MANTIS or if you are using the MANTIS DL/I interface (Releases 3.5 and 3.7), see [“Using the Old Interface Design Facility”](#) on page 531 before using the Interface Design Facility.

---

User-written interface programs can access the interface profiles you create via the CALL statement. MANTIS can transfer data to or from programs written in any language following COBOL or Assembler conventions. (For possible restrictions on writing such interfaces, refer to the *CICS/VS Application Programming Guides and Reference Manuals (Command Level)* for your release of CICS.)

The Interface Design Facility allows data conversion via the CALL statement. You must indicate the format in which data is passed (PACKED, ZONED, BINARY, FLOAT, TEXT, or KANJI) between MANTIS and the interface program. MANTIS supplies the data type (TEXT, BIG, SMALL, or KANJI).

## Interface Design Facility menu

To access the Interface Design Facility, select the Design an Interface option from the MANTIS Facility Selection Menu (see “MANTIS Facility Selection Menu” on page 21) by typing the option number in the selection field and pressing ENTER. MANTIS returns the Interface Design Facility menu shown in the following screen illustration:

```
INT001                                M A N T I S

                                     Interface Design Facility

Create or update interface profile ... 1
Update area layout ..... 2
Library functions ..... 3
Directory of interfaces ..... 4
Print completed design ..... 5
Terminate this facility ..... CANCEL

                                     :  :
```

The Interface Design Facility menu presents the options in the order in which you would perform them to create a new interface profile. If you are updating an existing interface profile, select Library Functions to fetch the file from your library (see “Using the Library Functions” on page 229 for information on using Library Functions), then update the information as desired.

The following table provides a brief description of, and section references for, the Interface Design Facility menu options:

This option	Allows you to	See
Create or update interface profile	Create a new interface profile or update an existing one	<a href="#">“Creating or updating an interface profile”</a> on page 216
Update area layout	Create a new area layout or update an existing one	<a href="#">“Updating area layout”</a> on page 220
Library functions	Save, replace, fetch, or delete interface profiles	<a href="#">“Using the Library Functions”</a> on page 229
Directory of interface profiles	View a list of all the interface profiles in your library	<a href="#">“Using the Directory of Interfaces”</a> on page 231
Print completed design	Obtain a hard copy of your current area layout	<a href="#">“Printing the completed design”</a> on page 233

You can move among the Interface Design Facility menu options listed above without losing the interface design currently in your work area. Remember to save your interface design or any updates via Library Functions (see [“Using the Library Functions”](#) on page 229) before exiting from the Interface Design Facility. If you attempt to exit from the facility without saving current changes, MANTIS asks you to confirm your exit.

The five sections listed above discuss the Interface Design Facility menu options; [“Interface program description”](#) on page 233 provides program descriptions and storage requirements. If you are creating a new interface, proceed through the chapter. If you are updating an existing interface design, refer to the sections you need.

## Creating or updating an interface profile

Use the Create or Update Interface Profile option to create a new interface profile or update an existing one. Select the Create or Update Interface Profile option from the Interface Design Facility menu (see “Interface Design Facility menu” on page 214) by typing a 1 in the selection field and pressing ENTER or by pressing PF1. MANTIS returns the Interface Design Facility screen shown in the following screen illustration:

```
INT002                                M A N T I S

                                     Interface Design Facility

Name and Description ..... :
:                               :
Associated area Layout Name .. :
Password for using ..... :
Program to be called ..... :
Status ..... :
```

If you are updating an existing interface profile, have just fetched an interface profile from your library, or are returning to this function after performing another Interface Design Facility function, the interface description currently in your work area displays.

---

Enter the data for your interface design as described in the field descriptions on the following pages.

---

### Name and description of interface

**Description** Name is *Required*, Description is *Optional*. Specifies: (1) the name of your interface in the first field, and (2) the description of your interface in the second field.

**Format** *name* (first field) 1–30 alphanumeric character name  
*description* (second field) 1–58 character alphanumeric description. The description may contain blank and special characters.

### Considerations

- ◆ The description you specify here displays in the Directory of Interfaces (see [“Using the Directory of Interfaces”](#) on page 231).
- ◆ If your terminal supports lowercase, you can specify a description using lowercase characters.

---

### Associated area layout

**Description** *Optional*. Specifies the name of an existing interface if your interface will use an existing area layout.

### Considerations

- ◆ If you are specifying an associated area layout, you do not need to create the area layout for this interface.
- ◆ No one should delete or change the associated interface while the current interface remains active.
- ◆ If you do not want to use the area layout of an existing interface, leave this field blank; do not enter NONE or MANTIS searches for an interface named NONE.

## Password for using

**Description** *Optional.* Specifies the password that will allow access to the interface.

**Format** 1–16 alphanumeric characters

**Consideration** If your terminal supports lowercase, you can specify a password using lowercase characters.

---

## Program to be called

**Description** *Required.* Specifies the name of the program that MANTIS calls when this interface is used.

### Considerations

- ◆ If you do not include the program in the MANTIS Load Module, you must:
  - Define CICS programs in the PPT. (If you write the program in COBOL, you must specify the program as COBOL, since the PPT assumes Assembler.)
  - Define any files the program uses in the FCT.
- ◆ If you do include the program in the MANTIS Load Module, you do not have to define a PPT entry. However, you must specify INCLUDE=interfaces in CSOPCUST.

---

**Status**

**Description** *Optional.* Indicates the status of the program being called by the interface.

**Consideration** Enter ACTIVE. If you enter anything other than ACTIVE (e.g., ACTIVE followed by a blank space), MANTIS prohibits all program access to this interface.

Press ENTER to temporarily store the data. Press the CANCEL key to cancel the entry and return to the Interface Design Facility menu. If you specified an associated area layout for an interface profile, you can proceed directly to Library Functions to save the profile.

The following example defines a new interface, called TESTFACE, and its description and password. This example does not define an associated record layout for the interface. When you use this interface, MANTIS calls a program named USERFACE and the status is ACTIVE shown in the following screen illustration:

```

INT002                                M A N T I S

                                     Interface Design Facility

Name and Description ..... :
: test interface                :
Associated area Layout Name .. :
Password for using ..... : alibaba :
Program to be called ..... : userface :
Status ..... : active           :
```

Press ENTER to temporarily store the data. MANTIS returns to the Interface Design Facility menu. The next step in creating this interface design is creating the area layout (see “[Updating area layout](#)” on page 220).

## Updating area layout

An area layout defines the elements within an interface profile. Use the Update Area Layout option to create a new area layout or update an existing one. An area layout can contain up to 254 fields, each page displays 16 fields.

Use the built-in tabs (indicated below by the underline characters) to move around this screen. Select the Update Area Layout option from the Interface Design Facility menu (see “[Interface Design Facility menu](#)” on page 214) by typing a 2 in the selection field and pressing ENTER or by pressing PF2. MANTIS returns the Interface Area Definition screen as shown in the following screen illustration:

INT003	Page 1	MANTIS Interface Area Definition						YYYY/MM/DD		
Name:		Element count						HH:MM:SS		
-----M A N T I S-----		Element size						-----		
Name	Type	Position	Format	Length	Sign	Dec	Dim	Offset	Attribute	
- -		-	-	-	-	-	-	-	-	

(Use PF1 - PF16 to page; use CANCEL to exit)

If you are updating an existing interface profile or returning to this function after performing some other Interface Design Facility function, the area layout of the interface currently in your work area appears.

---

Enter or update the data for the Interface Area Definition screen as indicated in the field descriptions on the following pages.

---

## Page

**Description** *Optional.* Shows the page number of the view layout currently displaying.

**Default** 1

**Consideration** Use PF1 through PF16 to page through the area layout or type the new page number (1–16) over the current page number and press ENTER.

---

## Name

**Description** *Display.* Shows the name of the interface currently in your work area.

**Consideration** Define the interface name using either the Create or Update an Interface Profile option or the Library Functions option.

---

## Date and Time

**Description** *Display.* Shows the current date and time.

**Format** *YYYY/MM/DD* Specifies the date

*HH:MM:SS* Specifies the time

---

## Element count

**Description** *Display.* Shows the total number of elements currently in your area layout.

**Consideration** The Interface Design Facility sets this field to indicate the current number of fields in the area layout.

---

## Element size

**Description** *Display.* Shows the total length of elements currently in your area layout.

**Consideration** The Interface Design Facility sets this field to indicate the current size of the area layout.

---

---

### Action (field name does not display on-screen)

**Description** *Required.* Specifies the action you want to take with the element.

**Options** A Alter this line with new information typed over the existing fields. (Please note that none of the fields will actually be changed by MANTIS until you enter A.)

I Insert this line.

D Delete this line. If you delete an element during an update, MANTIS will renumber all subsequent element numbers.

---

### Name

**Description** *Required.* Specifies the element name.

**Format** 1–16 alphanumeric characters (with PREFIX if specified)

---

### Type

**Description** *Display.* Shows the data type as BIG, SMALL, TEXT, or KANJI, depending on the format you specify.

**Consideration** MANTIS determines the Type based on the information you specify in the Format and Length:

- ◆ A Format of PACKED with a Length greater than 9 bytes and with no decimals will have a Type of TEXT, unless NUM2TXT is set to “N” in the MANTIS Customization Module.
- ◆ A Format of ZONED with a Length greater than 16 bytes and with no decimals will have a Type of TEXT, unless NUM2TXT is set to “N” in the MANTIS Customization Module.

---

## Position

**Description** *Optional.* Indicates the displacement (relative to 1) of the beginning of this field within the interface area. It is *not* an indication of the relative position of the field (first, second, and so on).

### Considerations

- ◆ If you do not specify a value in this field, MANTIS uses the next available record position (as calculated based on the preceding field lengths).
- ◆ To have MANTIS recalculate the field positions, enter CALCPOS in the lower left-hand corner.
- ◆ If you are defining fields with Dimensions and Offset, then review the field position and ensure that it reflects the desired structure.

---

## Format

**Description** *Required.* Indicates the external format in which MANTIS should transfer the data.

**Options**

- P Packed decimal
- Z Zoned (unpacked) decimal
- B Binary (half word or full word)
- F Floating point (allowed values 4 or 8 bytes)
- T Text (character string)
- K Kanji for DBCS data

**Consideration** MANTIS does not use full word alignment for BIG binary fields.

---

## Length

**Description** *Required.* Indicates the length, in bytes, of the field on the file.

**Options** 1–254

---

## Sign

**Description** *Optional.* Indicates whether PACKED, ZONED, or BINARY fields are signed.

**Default** NO

**Options** NO  
YES

**Dec**

**Description** *Optional.* Specifies the number of decimal places for PACKED, ZONED, and BINARY numeric fields.

**Default** 0

**Options** 0–10

**Considerations**

- ◆ The maximum number of decimal places is 10. The number of decimal places cannot exceed the number of digits in the field.
- ◆ If you supply a value for this field that is too large, MANTIS estimates the correct value.

---

**Dim**

**Description** *Optional.* Specifies the dimension of a field (the number of times it occurs).

**Default** 0

**Options** 1–255

**Considerations**

- ◆ When executing the INTERFACE statement, MANTIS allocates the variables specified in this Interface Area Definition as single occurrence fields if the Dim value is less than 2, or as an array if the Dim value is 2 or greater. The dimension of the allocated array is equal to the value supplied here.
- ◆ If the INTERFACE statement stipulates multiple buffering, MANTIS generates an additional level of dimension at that time. For this reason, you should not use multiple buffering in the INTERFACE statement if a TEXT and KANJI field has its dimension greater than 1. TEXT and KANJI fields can only be single dimensional arrays.

## Offset

**Description** *Optional.* Indicates that a field is part of a data structure that is also a part of an array.

**Default** Length of the field

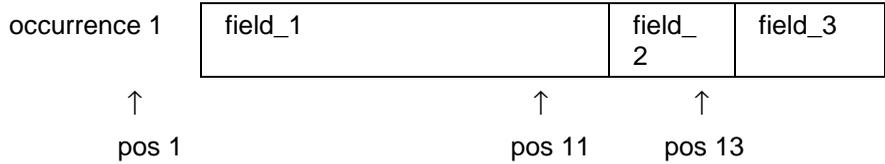
### Considerations

- ◆ The occurrence of such a field in the block of data is at an interval (offset) equal to the length of the data structure. For example, if the offset is specified at 14, the field will occur at intervals of 14 bytes.
- ◆ Enter a value in this field only for variables that are also part of arrays (Dim value greater than 1). The value specified here cannot be smaller than the field length.

**Examples** To define one array with three fields, you could make the following entries:

INT003 Page 1		MANTIS Interface Area Definition						YYYY/MM/DD	
Name:		Element count						HH:MM:SS	
-----M A N T I S-----		----- Element size -----							
Name	Type	Position	Format	Length	Sign	Dec	Dim	Offset	Attribute
field_1		1	TEXT	10			5	16	
field_2		11	BINARY	2			5	16	
field_3		13	PACKED	4			5	16	

This creates the following structure:



To define three arrays, you could make the following entries:

INT003	Page 1	MANTIS Interface Area Definition	YYYY/MM/DD
Name:		Element count	HH:MM:SS
-----M A N T I S-----		Element size	-----
Name	Type	Position	Format Length Sign Dec Dim Offset Attribute
field_1		1	TEXT 10 5 10
field_2		51	BINARY 2 5 2
field_3		61	PACKED 4 5 4

This creates the following structure:

occurrence	1	2	3...4	5
field_1	field_1	field_1	/ /	field_1
field_2	field_2	field_2		field_2
field_3	field_3	field_3		field_3

## Attribute

**Description** *Optional.* Indicates whether the associated element is a SINGLE\_LEVEL element.

## Considerations

- ◆ You can assign SINGLE\_LEVEL to any element. This causes MANTIS to hold the information in the interface area only once regardless of the LEVEL specification in the program's INTERFACE statement. (It does not become an array when LEVEL is used in the INTERFACE statement.)
- ◆ Fields marked SINGLE\_LEVEL are normally used for interface program context between interface calls.

After defining these fields, press ENTER to temporarily store the area layout definition. If you press the CANCEL key or any other key, you will lose the additions and updates. After you press ENTER, press the CANCEL key to return to the Interface Design Facility menu. Then select Library Functions to permanently save or replace the area layout definition.

An example area layout for an interface profile called TESTFACE is shown in the following screen illustration:

```

INT003 Page 1                MANTIS Interface Area Definition                YYYY/MM/DD
Name: TESTFACE                Element count                HH:MM:SS
----MANTIS-----            -----Element size-----
Name      Type  Position Format Length Sign Dec  Dim Offset Attribute
i author_number      t          7
i employee_number    t          5
i project_desc       t         30
i tot_tm_todate      z          5      y
i tot_tm_thmnth      z          5      y
i chrg               p          3          2
i user_ratecode      b          4

```

(Use PF1 - PF16 to page; use CANCEL to exit)

When you press ENTER, MANTIS accepts the data and supplies the Element count, Element size, and internal data types, and expands abbreviations in the Format, Sign, and Dec fields shown in the following screen illustration:

```

INT003 Page 1                MANTIS Interface Area Definition                YYYY/MM/DD
Name: TESTFACE                Element count                            HH:MM:SS
----M A N T I S-----      -----Element size-----
      Name      Type      Position Format Length Sign Dec  Dim Offset Attribute
AUTHOR_NUMBER  TEXT      1       TEXT      7
EMPLOYEE_NUMBER TEXT      8       TEXT      5
PROJECT_DESC   TEXT     13      TEXT     30
TOT_TM_TODATE  SMALL    43      ZONED    5      YES
TOT_TM_THMNTN  SMALL    48      ZONED    5      YES
CHRG           SMALL    53      PACKED   3              2
USER_RATECODE  BIG      56      BINARY   4
    
```

(Use PF1 - PF16 to page; use CANCEL to exit)

Press the CANCEL key to exit from the Area Layout Definition screen and return to the Interface Design Facility menu. MANTIS temporarily saves the interface profile and area layout. If you attempt to exit the Interface Design Facility without saving your interface profile using the Library Functions option (see [“Using the Library Functions”](#) on page 229), MANTIS asks you to confirm your exit.

## Using the Library Functions

Use the Library Functions option to save, replace, fetch and delete interface profile designs. Select the Library Functions option from the Interface Design Facility menu (see “[Interface Design Facility menu](#)” on page 214) by typing a 3 in the selection field and pressing ENTER or by pressing PF3. MANTIS returns the Interface Library Facility menu shown in the following screen illustration:

```

INT004                                M A N T I S

                                Interface Library Facility

Name of interface ..... :

                                Save ..... 1
                                Replace ..... 2
                                Fetch ..... 3
                                Delete ..... 4
                                Terminate ..... CANCEL

                                :
  
```

If you have an interface profile currently in your work area, the name of the design displays. You can then perform the necessary functions (save, replace, delete) on the interface profile. If you want to update an interface profile currently in your library, fetch the profile. Field descriptions for this screen follow.

---

### Name of interface

<b>Description</b>	<i>Required.</i> Identifies the interface profile you want to save, fetch, replace, or delete.
<b>Format</b>	1–16 alphanumeric character name to save a new interface design; an existing interface name to perform fetch, replace, or delete

You can execute the following actions from the Interface Library Facility menu by typing the number of the action in the selection field and pressing ENTER, or pressing the corresponding PF key.

Action	Description
Save	Saves new interface profiles in your library. Use this function only when the interface profile does not already exist in your library. All interfaces will be saved in the new format.
Replace	Replaces an interface profile in your library with an updated version currently in your work area. All interfaces will be replaced in the new format. MANTIS asks you to confirm that you want the old interface replaced with the new. If you want to retain the old interface, you must save the new, converted interface under a different name.
Fetch	Retrieves an interface profile from your library and places it in your work area. If the interface is in an old format, it will be displayed in the new format. Internally, however, it will remain the same until you save or replace it.  A message appears at the bottom of the screen informing you whether the fetched interface is in old or new format. ( <i>Old</i> format means the interface was designed with the Interface Design Facility provided in MANTIS 4.0 and under.) If the interface is in <i>old</i> format, all previous BIG fields will now appear as FLOAT, with a LENGTH of 8. All TEXT fields will remain unchanged. For more information on using the Old Interface Design Facility, see <a href="#">“Using the Old Interface Design Facility”</a> on page 531.
Delete	Deletes an interface profile from your library. MANTIS asks you to confirm the deletion.

When the action you specify is complete, MANTIS exits to the Interface Design Facility menu and displays a confirmation message in the lower left-hand corner of the screen. Press the CANCEL key to exit from the Interface Library Facility (see the screen illustration at the beginning of this section) and return to the Interface Design Facility menu without completing a Library function.

## Using the Directory of Interfaces

Use the Directory of Interfaces option to display an alphabetic listing of all existing interface profiles. Select the Directory of Interfaces option from the Interface Design Facility menu by typing a 4 in the selection field and pressing ENTER or by pressing PF4. MANTIS returns the Directory of Interfaces screen shown in the following screen illustration:

-----Name-----	----Password----	Fmt	-----Description-----
TESTFACE	ALIBABA	NEW	TEST INTERFACE

OLD will appear in the Fmt field to indicate interfaces stored in the old format (created using MANTIS 4.0 or under). NEW will appear in the Fmt field to indicate interfaces stored in the new format.

The Directory of Interfaces screen also contains the Full Name field to the right of the fields displayed above. To display the Full Name field, enter window mode by typing a *w* in the bottom-right corner of the screen and pressing ENTER. The window mode PF keys display. Press PF9 to exit window mode.

## General considerations

- ◆ You can view the directory, but you cannot change it. If you want to print the list, use the Directory Facility. (See “Listing MANTIS entities using the Directory Facility” on page 326 for information on using the Directory Facility.)
- ◆ If the list of interfaces is long and you want to reposition the list starting at a different interface name, do the following:
  1. In the bottom left corner of the screen, enter 1–16 characters of the interface name from which you want to start the list .
  2. Press ENTER.
- ◆ To display a particular range of interface names, enter a Starting Name and an Ending Name, separated by a colon (for example., AUX:INTER), in the bottom-left corner of the screen.



---

When specifying a range of interfaces, you cannot use the wildcard characters described below.

---

- ◆ If you want to search for a set of interfaces whose names correspond to a particular pattern of characters, use the wildcard characters, the asterisk (\*) and the question mark (?) as follows:
  - \* Represents an indefinite number of characters. For example, \*2\* will display a list of all interfaces whose names contain a 2.
  - ? Represents a single character. INTER??? designates an interface (or interfaces) whose name begins with INTER and ends with any three characters.

Enter either parameter in the lower-left corner of the Directory of interfaces list.

After viewing the list of interfaces, press ENTER. If you are in the middle of multiple pages, ENTER will scroll you to the next page and so on, until you reach the last page. Once you reach the last page or if you are viewing a single page, pressing ENTER returns you to the Interface Design Facility menu. You can exit the Directory of Interfaces list and return to the Interface Design Facility menu at any time by pressing the CANCEL key. To exit directly to the MANTIS Facility Selection menu (see “[Interface Design Facility menu](#)” on page 214), press PA1.

---

## Printing the completed design

Use the Print Completed Design option to obtain a hard copy of your current interface area layout. You can return to the Interface Design Facility menu at any time during the interface design phase and select this option by typing a 5 in the Selection field and pressing ENTER or by pressing PF5. MANTIS routes the current interface area layout to a designated printer.

---

## Interface program description

You access an interface profile by using the CALL statement in your program. When you issue the CALL statement, MANTIS calls the program named in your interface definition (Program to Be Called field—see “[Creating or updating an interface profile](#)” on page 216) by issuing an EXEC CICS LINK (in CICS, if the interface has not been linked to MANTIS) instruction, or standard IBM subroutine linkage (IMS/DC, Batch, or CICS, if the interface has been linked to MANTIS), and by passing a storage area to this program. This storage area contains any information provided by the program that issued the CALL.

The called program can make alterations, do calculations, perform I/O operations (including terminal I/O), perform database functions, and perform subroutine calls to the contents of this storage area. Ensure that you design your program to release any acquired storage area prior to returning to MANTIS. Return to MANTIS by issuing an EXEC CICS RETURN (CICS) instruction or standard IBM subroutine linkage (IMS/DC, CICS).

### General considerations

- ◆ If you *do not* include the program in the MANTIS Load Module, you must:
  - Define the CICS program in the PPT(if you write the program in COBOL, you must specify the program as COBOL since the PPT assumes Assembler).
  - Define any files that program uses in the FCT.

If you *do* include the program in the MANTIS Load Module, you do not have to define a PPT entry. However, ensure that you specify INCLUDE=interfaces in CSOPCUST.

- ◆ Ensure that IMS/DC or Batch programs are available in a LINKLIB.



---

Your program must not make any alterations to the contents of the TWA for CICS. You can save these areas and then restore.

---

## Storage area requirements

CICS has different storage requirements for the Interface Design Facility.

### CICS requirements

You must define the storage area MANTIS passes to your interface program in the linkage section. The first and last 8 bytes of the storage area are reserved for use by CICS and must not be overwritten. The second 8 bytes of the storage area are used by MANTIS as a text variable associated with your interface name. The MANTIS program that issued the CALL can, therefore, test the text variable associated with your interface name for a value returned by the interface program. For example, if your MANTIS program contains the following statements:

```
120  ..CALL TESTPGM ("GET" ,"1234")
130  ..IF TESTPGM="NOTFOUND"
140  ...MESSAGE="ERROR,EMPLOYEE DOES NOT EXIST"
150  ..END
```

The interface program may have returned "NOTFOUND" in the second 8 bytes of the storage area. This second 8 bytes always contains blanks upon entry to your interface program.

The remainder of the storage area is defined according to the interface area layout definition (see "[Updating area layout](#)" on page 220). MANTIS stores numeric and text fields in the order in which they appear in the interface area layout. For each text and numeric field, specify the same size as was specified during the interface area layout definition.

Your interface program must establish addressability to the storage area. The first 4 bytes of the TWA contain the address of the storage area. This address is the start of the 8 bytes reserved for CICS.

## IMS/DC and batch requirements

You must define the storage area MANTIS passes to your interface program in the linkage section. MANTIS uses the first eight bytes of the storage area as a text variable associated with your interface name. The MANTIS program which issued the CALL can, therefore, test the text variable associated with your interface name for a value returned by the interface program. For example, if your MANTIS program contains the following statements:

```
120  ..CALL TESTPGM ("GET", "1234")
130  ..IF TESTPGM="NOTFOUND"
140  ...MESSAGE="ERROR,EMPLOYEE DOES NOT EXIST"
150  ..END
```

The interface program may have returned “NOTFOUND” in the first 8 bytes of the storage area. This first 8 bytes will always contain blanks upon entry to your interface program.

The remainder of the storage area is defined according to the interface area layout definition (see “[Updating area layout](#)” on page 220). MANTIS stores numeric and text fields in the order in which they appear in the interface area layout. For each text and numeric field, specify the same size as during the interface area layout definition.

When a Batch MANTIS interface program is invoked, Batch MANTIS invokes the following register convention:

R13	18 full word save area
R14	Return address
R1	Address of parameter list (end marked by x “80” in first byte of parm 2)
	Parm 1: Address of interface area
	Parm 2: Address of a half word containing the offset to the first text field

## COMMAREA interface

The COMMAREA interface allows a CICS Communication area to be moved to MANTIS variables and updates from the contents of MANTIS variables. (You cannot create a COMMAREA, you can only use a COMMAREA that is passed to you.)



---

To avoid conflicts with other programs, MANTIS does not normally use COMMAREA. If the COMMAREA is passed to MANTIS, it is passed to other applications from MANTIS.

---

Create an interface using any name you choose with the “PROGRAM TO BE CALLED” specified as COMMAREA. Define the first field in the interface area as TEXT length 4, this field will be the function code. Place the variables to map onto the COMMAREA in the rest of the definition.

- ◆ Set the function code area as:
  - GETC (GET COMMAREA)—To move from the COMMAREA to MANTIS variables.
  - PUTC (PUT COMMAREA)—To move from MANTIS variables to COMMAREA.
  - CLEB (CLEar to Blanks)—To clear the COMMAREA to blanks.
- ◆ The status field in the interface is set to:
  - Spaces—No errors.
  - NOTFOUND—No CICS COMMAREA exists.
  - ERROR—Invalid function code.



---

If the COMMAREA and the interface area are of different lengths, the smaller area is used.

---

## Interface debugging

If an interface fails to perform properly, check the following areas:

- ◆ Make sure the name of the interface specified in the CALL statement matches the name given in the INTERFACE statement.
- ◆ Make sure that the name of the interface profile specified in the INTERFACE statement matches the name assigned during interface design.
- ◆ Check whether the program is available to MANTIS through one of the following:
  - DFHRPL (OS 390 CICS)
  - Core Image Library (VSE/ESA CICS)
  - MANTIS LOADLIB library

The program can also be linked to MANTIS through the Customization Macro (CSOPCUST) and by modifying the appropriate link deck.

## CICS considerations

- ◆ An entry must be added to the PPT specifying the same program name that appears in the interface profile, unless you include the program in the MANTIS Load Module (see your Master User). You must specify the correct programming language in the PPT entry.

<b>If you write the program in Command Level:</b>	<b>Link-edit the following module with the interface program as the first module:</b>
COBOL	DFHECI
PL/1	DFHPL101
Assembler	DFHEAI

- ◆ Ensure that the fields you define in the interface profile all have corresponding fields of the correct length and type in the LINKAGE SECTION of the INTERFACE program.
- ◆ Ensure that the interface program does not use the first 3500 bytes of the TWA.

### Example interface program

In the example interface program in this section, we use an interface called TESTFACE. The following screen illustration shows the interface area definition for TESTFACE:

INT003 Page 1		MANTIS Interface Area Definition						YYYY/MM/DD	
Name: TESTFACE		Element count						HH:MM:SS	
----M A N T I S----		-----Element size						-----	
Name	Type	Position	Format	Length	Sign	Dec	Dim	Offset	Attribute
FUNCTION	TEXT	1	TEXT	8					
NID	SMALL	9	PACKED	3	YES				
BRUT	SMALL	12	ZONED	5	YES				
NOM	TEXT	17	TEXT	20					
AMOUNT	BIG	37	PACKED	4					
BALANCE	BIG	41	BINARY	4	YES	2			

(Use PF1 - PF16 to page; use CANCEL to exit)

Code the following in your MANTIS program for TESTFACE:

```

10  INTERFACE TESTPGM ("TESTFACE", "ALIBABA")
20  .
30  .
   .
90  CALL TESTPGM

```

## CICS external and internal interfaces

CICS/VS Command-level and COBOL II have three source listings for external interfaces.

The first, a CICS/VS Command-level listing, is as follows:

```

000001 IDENTIFICATION DIVISION.
000002     PROGRAM-ID.  USERFACE.
000003 ENVIRONMENT DIVISION.
000004 DATA DIVISION.
000005 WORKING-STORAGE SECTION.
000006 01  RECORD-AREA.
000007     03  REC-NID          PIC S9(5)    COMP-3.
000008     03  REC-AMT          PIC S9(7)    COMP-3.
000009     03  REC-SEQ          PIC S9(3)    COMP-3.
000010     03  REC-BRUT        PIC S9(5).
000011     03  REC-SUPLL        PIC S9(5)    COMP-3.
000012     03  REC-BAL          PIC S9(5)V99 COMP.
000013     03  REC-NOM          PIC X(20).
000014 LINKAGE SECTION.
000015 01  DFHBL LDS         COPY DFHBL LDS.
000016     02  SAACBAR.          PIC 9(8)    COMP.
000017 01  DFHCSADS         COPY DFHCSADS.
000018 01  DFHTCADS         COPY DFHTCADS.
000019     02  TWA
000020         05  INTERFACE-AREA-ADDR PIC S9(8)  COMP.
000021 01  DFHSAADS         COPY DFHSAADS.
000022     02  DATA-AREA.
000023         05  MANTIS-HEADER.
000024             07  STATUS RETURN      PIC X(8).
000025         05  MANTIS-DATA.
000026             07  FUNCTION-REQ        PIC X(8).
000027             07  MAN-NID              PIC S9(5)    COMP-3.
000028             07  MAN-BRUT             PIC S9(5).
000029             07  MAN-NOM              PIC X(20).
000030             07  MAN-AMT              PIC S9(7)    COMP-3.
000031             07  MAN-BAL            PIC S9(5)V99 COMP.
000032 PROCEDURE DIVISION.
000034 EXEC CICS ADDRESS CSA(CSACBAR)
000035     END-EXEC.
000036 MOVE CSACD TA TO TCACBAR.
000037 MOVE INTERFACE-AREA-ADDR TO SAACBAR.
000038 MOVE MAN-NID TO REC-NID.
000039 MOVE MAN-BRUT TO REC-BRUT.
000040 MOVE MAN-NOM TO REC-NOM.
000041 MOVE MAN-AMT TO REC-AMT.
000042 MOVE MAN-BAL TO REC-BAL.
000043 MOVE 'OK' TO STATUS-RETURN.
000044 EXEC CICS          RETURN
000045     END-EXEC.
                                <===== Establish
                                address to inter-
                                face area (buffer)
                                MANTIS sent.

```

The second, a COBOL listing works with CICS environments 3.x and below:

```

000100 IDENTIFICATION DIVISION.
000200 PROGRAM-ID.          GETRACF.
000300 AUTHOR.
000400 *REMARKS
000500*****
000600*****                                     ***
000700*****      PROGRAM ID:          GETRACF                                     ***
000800*****
000900*****      PROGRAM TITLE:       GET RACF USER ID.                       ***
001000*****
001100*****      SCREEN NAME:        NONE                                     ***
001200*****
001300*****      PURPOSE:  THIS ROUTINE IS CALLED BY MANTIS PROGRAM          ***
001400*****      TO GET THE RACF USER-ID.                                     ***
001500*****
001600      EJECT
001700 ENVIRONMENT DIVISION.
001800 DATA DIVISION.
001900 WORKING-STORAGE SECTION.
002000 01 FILLER          PIC X(40)    VALUE.
002100 ***** GETRACF WORKING STORAGE BEGIN *****
002200*
002300 LINKAGE SECTION.
002400*
002500*****
002600*****                                     ***
002700*****      CICS REQUIRED BLL(BASE LOCATOR FOR LINKAGE)                   ***
002800*****                                     ***
002900*****
003000*
003100 01 DFHBLDS.
003200 02 FILLER1 PIC S9(8)    COMP.
003300 02 TWABAR PIC S9(8)    COMP.
003400 02 SAACBAR PIC S9(8)    COMP.
003500 01 TWA
003600 02 INTERFACE-AREA-ADDR PIC S9(8)    COMP.
003700*
003800      EJECT
003900*

```

```
004000*****
004100*****
004200*****      CICS REQUIRED BLL(BASE LOCATOR FOR LINKAGE)
004300*****      THIS AREA IS USED TO PASS PARAMETERS TO AND ACCEPT
004400*****      PARAMETERS FROM MANTIS.
004500*****
004600*****
004700*
004800 01  DFHSAADS SYNCHRONIZED.
004850 02  FILLER PIC X(8).
004900 02  MANTIS-PARM.
005000 05  STATUS-RETURNED PIC X(8).
005100*
005200 05  ACCESS-USERID PIC X(32).
005300  EJECT
005400 PROCEDURE DIVISION.
005500*
005600 0000-GET-RACF-USERID SECTION.
005700*****
005800*****
005900*****      0000-GET-RACF-USERID SECTION
006000*****      THIS SECTION WILL OBTAIN THE RACF USERID FOM CICS
006100*****
006200*****
006300 0001-BEGIN
006400 SERVICE RELOAD DFHBLDLS.
006500 EXEC CICS ADDRESS TWA(TWABAR) END-EXEC.
006600 SERVICE RELOAD TWA.
006700 MOVE INTERFACE-AREA-ADDR TO SAACBAR.
006800 SERVICE RELOAD DFHSAADS.
007000*
007100 EXEC CICS
007200 ASSIGN USERID (ACCESS-USERID)
007300 END EXEC.
007400*
007500 0099-GET-RACF-USERID-EXIT.
007600 EXEC CICS RETURN END-EXEC.
007700*
007800*****
007900*****      BOTTOM OF DATA *****
```

The third, a COBOL II source listing, works with CICS 2.12, 3.x, and 4.x:

```

000100 IDENTIFICATION DIVISION.
000200 PROGRAM-ID.          CSRACFUS.
000300 AUTHOR.
000400 REMARKS.
000500*****
000600*****
000700*****      PROGRAM ID:          CSRACFUS          ***
000800*****      PROGRAM TITLE:       GET RACF USER ID.  ***
000900*****      PROGRAM LANGUAGE:    OS/V S COBOL II   ***
001000*****
001100*****      PURPOSE:  THIS ROUTINE IS CALLED BY MANTIS PROGRAM ***
001200*****      SOLUS001 (USER SECURITY MENU).          ***
001300*****      THE 'EXEC CICS ASSIGN USERID (VAR-8)'  ***
001400*****      MACRO GETS THE RACF USER-ID.           ***
001500*****      THE PURPOSE IS TO USE IT AS USER-ID AND ***
001600*****      PASSWORD TO CONTROL C:M ACCESS INSTEAD ***
001700*****      OF USING C:M SIGNON SCREEN.           ***
001800*****
001900 ENVIRONMENT DIVISION.
002000 CONFIGURATION SECTION.
002100 SOURCE-COMPUTER. IBM-3090.
002200 OBJECT-COMPUTER. IBM-3090.
002300 DATA DIVISION.
002400 WORKING-STORAGE SECTION.
002500 01 FILLER                                PIC X(40)    VALUE
002600 '          ***** CSRACFUS WORKING STORAGE BEGIN ***** '
002700*
002800 LINKAGE SECTION.
002900*
003000      01 TWA-AREA.
003100          05 INTERFACE-AREA-ADDR    USAGE IS POINTER
003200      01 INTERFACE-AREA
003300          05 FILLER                                PIC X(8) .
003400          05 INTERFACE-STATUS        PIC X(8) .
003450      05 MANTIS-DATA.
003475          07 USERID-FIELD        PIC X(8) .
003500*
003600 EJECT
003700 PROCEDURE DIVISION.
003800 0000-GET-RACF-USERID SECTION.

```

```
003900*****
004000*****
004100***** 0000-GET-RACF-USERID SECTION.
004200***** THIS SECTION WILL OBTAIN THE RACF USERID FROM
004300***** CICS STORAGE.
004400*****
004500*****
004600*
004700 0001-BEGIN.
004800 EXEC CICS
004900 ADDRESS TWA(ADDRESS OF TWA-AREA)
005000 END-EXEC.
005100*
005200 SET ADDRESS OF INTERFACE-AREA TO INTERFACE-AREA-ADDR.
005300*
005400 MOVE 'OK' TO INTERFACE-STATUS
005500 EXEC CICS
005600 ASSIGN USERID(USERID-FIELD)
005700 END-EXEC.
005800*
005900 0099-GET-RACF-USERID-EXIT.
006000 EXEC CICS
006100 RETURN
006200 END-EXEC.
006300*****
006400***** BOTTOM OF DATA *****
```

If the MANTIS interface area is greater than 4,096 bytes then the COBOL source must be amended to be able to make changes in the data after the first 4,096 bytes. It is necessary to add a BLL cell for each 4K block and set the BLL address for each block. For example, an interface area of 10,000 bytes would require the following code:

```
LINKAGE SECTION.
COPY DFHLLDS.
    02 SAACBAR                                PIC S9(8) COMP.
    02 SAACBAR2                              PIC S9(8) COMP.
    02 SAACBAR3                              PIC S9(8) COMP.
COPY DFHCSADS.
COPY DFHTCADS.
    02 TWA.
        05 INTERFACE-AREA-ADDR              PIC S9(8) COMP.
COPY DFHSAADS.
    02 DATA-AREA.
        05 MANTIS-HEADER.
            07 MANTIS-STATUS-RETURN          PIC X(8).
        05 MANTIS DATA.
            10 1K-DATA1                      PIC X(3000).
            10 1K-DATA2                      PIC X(4000).
            10 1K-DATA3                      PIC X(1000).
            10 1K-DATA4                      PIC X(2000).
PROCEDURE DIVISION.
EXEC CICS ADDRESS          CSA(CSACBAR) END-EXEC.
MOVE CSAACDATA            TO TCACBAR.
MOVE INTERFACE-AREA-ADDR TO SAACBAR2.
ADD 4096 SAACBAR          GIVING SAACBAR2.
ADD 4096 SAACBAR2        GIVING SAACBAR3.
```

Two CICS/VS Command-level source listings for internal interfaces follow. The first serves as a model for interface programs linked to MANTIS that do not call CICS services:

```

1 *****
2 *
3 *   FUNCTION GROUP EXAMPLE LINKED INTERFACE PROGRAM
4 *       CALLED USING THE MANTIS INTERFACE SERVICES.
5 *
6 *   REGISTER CONTENTS UPON ENTRY:
7 *
8 *       R15 = ENTRY POINT ADDRESS(BASE REGISTER)
9 *       R14 = RETURN POINT IN MANTIS
10 *      R13 = SAVE AREA ADDRESS( 18 FULLWORDS)
11 *      R12 = TCA ADDRESS
12 *      R1  = PARAMETER LIST
13 *          PARAMETER 1 : ADDRESS OF EIB BLOCK
14 *          PARAMETER 2 : ADDRESS OF COMMON AREA
15 *
16 *   THIS EXAMPLE SAVES THE REGISTER VALUES, POINTS TO THE TWA,
17 *   SETS THE RETURN CODE WITH A STATUS AND RETURNS TO MANTIS.
18 *
19 *   NOTE:  THIS IS AN EXAMPLE AND SERVES AS A MODEL FOR INTERFACE
20 *   PROGRAMS LINKED TO MANTIS WHICH DO NOT CALL CICS SERVICES.
21 *
22 *****
23   ENTRY   LINKMAN2
24   USING   LINKFACE,R15
25   USING   FACEAREA,R6      R6 WILL POINT TO INTERFACE
26INKFACE  CSECT
27LINKMAN2 EQU LINKFACE      ENTRY POINT
28   B   LINKASM1      AROUND CONSTANTS
29
30   DC  CL8'LINKMAN2'
31   DC  CL8' REL 1.0'
32   DC  CL8'&SYSDATE'
33   +   DC  CL8'04/21/86'
34   DC  CL8'&SYSTIME'
35   +   DC  CL8'15.10'
36LINKASM1 DS   OH
37   STM R14,R12, 12(R13) SAVE REGISTERS
38   LR  R14,R13      IN REG 13 SAVE AREA
39   LA  R13,FACESAVE POINT TO NEW SAVE AREA
40   ST  R14,4(,R13)  BACK LINK TO USER SAVE AREA
41   ST  R13,8(,R14)  FORWARD LINK TO FACESAVE

```

```

41 LA R12,X'100'(R12) POINT TO TWASTART
42 L R6,0(R12) POINT TO INTERFACE DATA
43 LA R6,8(R6) BUMP PAST SAA
44 MVC STATUS,=CL8'GOOD'SET STATUS AS GOOD
45 L R13,4(,R13) SET TO ENTRY SAVE AREA
46 LM R14,R12,12(R13) RELOAD ENTRY REGISTER VALUES
47 BR R14 RETURN TO MANTIS
48 LTORG
49 =CL8'GOOD'
50 FACESAVE DS 18F SAVE AREA
51 FACEAREA DSECT INTERFACE DATA AREA
52 SAAHEAD DS CL8 SAA HEADER
53 STATUS DS CL8 STATUS FIELD
54 FACEDATE DS CL256 DATA AREA
55 *****
56 *** REGISTER EQUATES
57 *****
58 RO EQU 0
59 R1 EQU 1
60 R2 EQU 2
61 R3 EQU 3
62 R4 EQU 4
63 R5 EQU 5
64 R6 EQU 6
65 R7 EQU 7
66 R8 EQU 8
67 R9 EQU 9
68 R10 EQU 10
69 R11 EQU 11
70 R12 EQU 12
71 R13 EQU 13
72 R14 EQU 14
73 R15 EQU 15
74 END

```

## The second calls CICS services:

```

39*****
40*
41*   FUNCTION GROUP                EXAMPLE LINKED INTERFACE PROGRAM *
42*                               CALLED USING THE MANTIS INTERFACE SERVICES *
43*                               FOR CICS COMMAND LEVEL ROUTINES. *
44*
45*   REGISTER CONTENTS UPON ENTRY:
46*
47*                               R15 = ENTRY POINT ADDRESS(BASE REGISTER) *
48*                               R14 = RETURN POINT IN MANTIS *
49*                               R13 = SAVE AREA ADDRESS(18 FULLWORDS) *
50*                               R12 = TCA ADDRESS *
51*                               R5  = EIB DYNAMIC STORAGE ADDRESS *
52*                               R1  = PARAMETER LIST *
53*                               PARAMETER 1: ADDRESS OF EIB BLOCK *
54*                               PARAMETER 2: ADDRESS OF COMMON AREA *
55*
56*   THIS EXAMPLE SAVES THE REGISTER VALUES, POINTS TO THE TWA, *
57*   SETS THE RETURN CODE WITH A STATUS, AND RETURNS TO MANTIS. *
58*
59*   NOTE: THIS IS AN EXAMPLE AND SERVES AS A MODEL FOR INTERFACE *
60*   PROGRAMS LINKED TO MANTIS WHICH MAY REQUEST CICS SERVICES. *
61*
62*****
63   USING   LINKFACE,R3
64   USING   FACEAREA,R6      R6 WILL POINT TO INTERFACE
65
66
67
69   LINKFACE DFHEIENT CODEREG=(3),DATAREG=(R5),EIBREG=(7)
148 LINKMAN1 EQU LINKFACE   ENTRY POINT
149         BLINKASM1      AROUND CONSTANTS

151         DC   CL8'LINKMAN1'
152         DC   CL8' REL 1.0'
153         DC   CL8'&SYSDATE'
154         DC   CL8'&SYSTIME'
156 LINKASM1 DS           OH
67
68
69

```

```
163          L    R13,DFHEIRS1          RESET R13 TO CSA
164 *****
165 *** AT THIS POINT, THE USER SHOULD SET THE APPROPRIATE ***
166 *** HANDLE CONDITIONS SUCH AS NOTOPEN, NOTFOUND, ENDFILE, ETC. ***
167 *** IF THE USER DOES NOT SET THE CORRECT HANDLE CONDITIONS, ***
168 *** UNPREDICTABLE RESULTS WILL OCCUR. THE HANDLE CONDITIONS ***
169 *** FOR MANTIS ARE MAINTAINED BY PUSH AND POP HANDLE ***
170 *** ASSUMING THE CICS SERVICE LEVEL IS 1.6 OR HIGHER ***
171 *****
    .
    .
    .
189 EXEC CICS ADDRESS TWA(R6)
190     L    R6,0(R6)          LOAD POINTER TO INTERFACE DATA
191     LA   R6,8(R6)         BUMP PAST SAA
192     MVC  STATUS,=CL8'GOOD' SET STATUS AS GOOD
193     *** NOW RETURN TO MANTIS FOLLOWING LINK REQUEST ***
194     DFHEIRET
    .
    .
    .
216     LTORG
217     FACESAVE DS 18F      SAVE AREA
218     FACEAREA DSECT      INTERFACE DATA AREA
219     SAAHEAD DS CL8      SAA HEADER
220     STATUS DS CL8       STATUS FIELD
```

```
221  FACEDATE DS  CL256          DATA AREA
222  *****
223  *** REGISTER EQUATES          ***
224  *****
225  R0 EQU 0
226  R1 EQU 1
227  R2 EQU 2
228  R3 EQU 3
229  R4 EQU 4
230  R5 EQU 5
231  R6 EQU 6
232  R7 EQU 7
233  R8 EQU 8
234  R9 EQU 9
235  R10 EQU 10
236  R11 EQU 11
237  R12 EQU 12
238  R13 EQU 13
239  R14 EQU 14
240  R15 EQU 15
241  COPY DFHCSADS
.
.
.
2868 END
```

## CMS source listing

The CMS source listing follows:

```
000001 IDENTIFICATION DIVISION.
000002     PROGRAM-ID.  TESTCOB.
000003 ENVIRONMENT DIVISION.
000004 DATA DIVISION.
000005 WORKING-STORAGE SECTION.
000006 01  RECORD-AREA.
000007     02  REC-NID                PIC S9(5)    COMP-3.
000008     02  REC-AMT                PIC S9(7)    COMP-3.
000009     02  REC-SEQ                PIC S9(3)    COMP-3.
000010     02  REC-BRUT               PIC S9(5)    .
000011     02  REC-SUPLL            PIC S9(5)    COMP-3.
000012     02  REC-BAL                PIC S9(5)V99 COMP.
000013     02  REC-NOM                PIC X(20)   .
000014 LINKAGE SECTION.
000015 01  DATA-AREA.
000016     05  MANTIS-HEADER.
000017         07  STATUS-RETURNED PIC X(8) .
000018     05  MANTIS-DATA.
000019         07  FUNCTION-REQ     PIC X(8) .
000020         07  MAN-NID           PIC S9(5)    COMP-3.
000021         07  MAN-BRUT        PIC S9(5)    .
000022         07  MAN-NOM         PIC X(20)   .
000023         07  MAN-AMT         PIC S9(7)    COMP-3.
000024         07  MAN-BAL        PIC S9(5)V99 COMP.
000025 PROCEDURE DIVISION USING DATA-AREA.
000026     MOVE MAN-NID TO REC-NID.
000027         = .
000028         etc. .etc.
000029     MOVE 'OK' TO STATUS-RETURNED.
000030     GOBACK.
```

## DOS/VSE interface considerations and debugging

Batch MANTIS allows users to call interface programs in a DOS/VSE environment. If a called program is written in COBOL, ILBDSETO must be called first. Batch MANTIS does not do this for you. You must provide an assembler program to call ILBDSETO, then call the COBOL program.

The source listing for the assembler program to call the COBOL program follows:

```

EXAMPLE OF CALLED ASSEMBLER PROGRAM TO CALL A COBOL PROGRAM:
PROGSTRT START  O
        ENTRY  PROGNAME
        EXTRN  COBNAME
        USING  PROGNAME,15
PROGNAME SAVE      (14,12)
        LR     8,15
        DROP   15
        USING  PROGNAME,8
        LR     9,13
        LA     13,AREA
        ST     13.8(9)
        ST     9,4(13)
        L      15,SETOVCON
        BALR   14,15
        LR     15,8
**
** ILBDSETO HAS BEEN CALLED-FOLLOWING CODE CALLS COBOL THEN RETURNS
**
        L      15,COBLVCON
        BALR   14,15
        L      13,4(13)
        RETURN (14,12)
SETOVCON DC  V(ILBDSETO)
COBLVCON DC  V(COBNAME)
AREA     DS  18F
ARGLST   DS  F
END
COBNAME=Name of COBOL Program to be called

```

The ASSEMBLER and COBOL programs should be link-edited as one phase. For example:

```
// OPTION CATAL
  PHASE PHASENAME , *
  INCLUDE PROGNAME
  INCLUDE ILBDSETO
  INCLUDE COBNAME
  ENTRY PROGNAME
// EXEC LNKEDT
**
```

# 6

## Transferring entities

You can use the Transfer Facility to transfer MANTIS entities between users of the same and different systems. A special Transfer File allows you to share entities with other users. The file is divided into independent areas, called bins, that may belong to a single user or be shared by several users. You can share the following MANTIS entities:

Screens	Scenarios
MANTIS File Profiles	TOTAL File Views
Programs	External File Views
Prompters	DL/I Call Profiles
Interfaces	MANTIS User File Data

**Transferring on the same system.** For users on the same system, entity transfer is a 2-step process:

1. The first user copies the entity (or entities) from his/her library into a bin (independent area) of the Transfer File.
2. The second user copies the entity (or entities) from this bin into his/her library.

**Transferring to different systems.** For users on different systems, the procedure is:

1. Copy the entity (or entities) from library to bin.
2. Copy the transfer file to the target system.
3. Copy the entity (entities) from the bin to library.

Or, you can close the transfer file to the source system and open it to the target system.

You can also use the Transfer Facility with Batch MANTIS.

## Transfer Facility menu

Select the Transfer Facility from the MANTIS Facility Selection Menu (see “[MANTIS Facility Selection Menu](#)” on page 21) by typing the option number in the selection field and pressing ENTER. MANTIS returns the Transfer Facility menu shown in the following screen illustration:

TRA001	Transfer Facility	YYYY/MM/DD
		HH:MM:SS
Transfer file name :	:	
Bin :	:	
Password :	:	
Create a new bin .....		1
Copy from library to bin .....		2
Copy from bin to library .....		3
Delete from bin .....		4
List contents of bin .....		5
Change password for bin .....		6
Directory of bins .....		7
Turn print ON/OFF .....		8
Help .....		9
Delete entire bin .....		12
Exit facility .....	CANCEL	
	:	:

You start most Transfer Facility menu options by entering a bin name and password in the spaces provided at the top of this menu (except for the Directory of Bins and the Help options). The bin name you enter on this menu displays in the Bin field in the upper-left corner of all subsequent Transfer Facility screens until you: (1) change it on the Transfer Facility menu, or (2) exit from the facility.

The following table provides a brief description of and section references for the Transfer Facility menu options:

This option	Allows you to	See
Create a new bin	Create a new bin.	“Creating a new bin” on page 259.
Copy from library to bin	Copy entities from a library to a bin.	“Copying from library to bin” on page 261.
Copy from bin to library	Copy entities from a bin to a library.	“Copying from bin to library” on page 279.
Delete from bin	Delete an entity or entities from a bin.	“Deleting entities from a bin” on page 300.
List contents of bin	Display a list of entities currently in a bin.	“Listing the contents of a bin” on page 313.
Change password for bin	Change the password for a bin.	“Changing bin password” on page 315.
Directory of bins	Display a list of all available bins.	“Using the Directory of Bins” on page 316.
Turn print ON/OFF	Turn a print trail on or off from any screen.	“Turning print ON/OFF” on page 317.
Help	Display help screens for the Transfer Facility.	“Using online help” on page 317.
Delete entire bin	Delete the contents of an entire bin.	“Deleting an entire bin” on page 317.

---

## Creating a new bin

To create a new bin, fill in the fields on the Transfer Facility menu (see the following screen illustration) as described in the field descriptions following shown in the following screen illustration:

TRA001	Transfer Facility	YYYY/MM/DD
		HH:MM:SS
Transfer file name :	:	
Bin :	:	
Password :	:	
Create a new bin .....		1
Copy from library to bin .....		2
Copy from bin to library .....		3
Delete from bin .....		4
List contents of bin .....		5
Change password for bin .....		6
Directory of bins .....		7
Turn print ON/OFF .....		8
Help .....		9
Delete entire bin .....		12
Exit facility .....	CANCEL	
	: 1 :	

## Transfer file name

**Description** *Required.* Specifies the name of the transfer file you are using.

### Considerations

- ◆ MANTIS accepts any valid transfer file name. If the name is invalid, you receive a message that MANTIS cannot access the file.
- ◆ When you enter the Transfer Facility menu, the cursor is positioned in the Bin field.



---

For compatibility with previous releases, the cursor displays in the Bin field when you enter the screen so that existing Batch MANTIS job streams execute correctly.

---

- ◆ The Transfer file name entered remains the current file until you change it or until you exit MANTIS.

---

## Bin

**Description** *Required.* Specifies the name of a bin.

**Format** 1–16 alphanumeric characters

**Consideration** You can have a maximum of 5000 Transfer bins.

---

## Password

**Description** *Optional.* Specifies the password needed to access this bin.

**Format** 1–16 alphanumeric characters

**Consideration** If you do not supply a password, subsequent operations on this bin will not require a password.

Select the Create a New Bin option by typing a 1 in the selection field and pressing ENTER or by pressing PF1. MANTIS creates the bin and returns a confirmation message in the lower left-hand corner of the Transfer Facility menu. You can continue with another option on the menu or press the CANCEL key to exit to the MANTIS Facility Selection Menu (see “[MANTIS Facility Selection Menu](#)” on page 21).

## Copying from library to bin

The Copy from Library to Bin option allows you to copy entities from your library to the current bin. Call up the bin you want to copy to by entering the bin name and password on the Transfer Facility menu (see “[Transfer Facility menu](#)” on page 257). Select the Copy from Library to Bin option by typing a 2 in the selection field and pressing ENTER or by pressing PF2. MANTIS returns the Copy from Library to Bin screen shown in the following screen illustration:

```

TRA002                               Copy From Library To Bin                               YYYY/MM/DD
Bin: BURRYSBIN                        HH:MM:SS

Programs ..... 1                      DL/I Call Profiles ..... 9
Screens ..... 2
File Profiles ..... 3
Prompters ..... 4                      Turn print ON/OFF ..... 12
Interfaces ..... 5                      Help ..... 13
Scenarios ..... 6                      User File Data (Kanji Keys) .. 14 (15)
Total File Views ..... 7                All user entities ..... 24
External File Views ..... 8              Terminate this facility .. CANCEL

Starting name :                          :
Ending name :                              :
(A)dd/(R)eplace : A :                      With data : N :
New name :                                  :

: :

```

The Copy from Library to Bin screen lists the types of entities you can copy and provides options for a printing trail and help. From this screen, you can copy selected entities from the library, a range of entities from the library, or all of the entities in the library.

The following field descriptions apply to the Copy from Library to Bin screen:

---

**Bin**

**Description** *Display.* Shows the name of current bin as specified on the Transfer Facility menu.

---

**Starting name**

**Description** *Optional.* Indicates: (1) the name of the entity, or (2) the first name in a range of entities that you want to copy to a bin.

**Format** MANTIS entities (other than programs and screens) have 1–16 character names. The following table summarizes the permitted lengths when naming MANTIS entities in the Transfer Facility:

Entity type	Length of name
Programs	1–30
Screens	1–30
Files	1–16
Prompters	1–16
Interfaces	1–30
TOTAL file views	1–16
External file views	1–16
Scenarios	1–16

---

**Ending name**

**Description** *Required* if you are copying a range of entities. Otherwise, leave blank.

**Format** 1–30 alphanumeric character existing program or screen name;  
 1–16 alphanumeric character existing name for all other entities (see the preceding table).

---

**(A)dd/(R)eplace**

<b>Description</b>	<i>Required.</i> Indicates whether the entities being copied are to be added as new entities or whether they are to replace existing entities.
<b>Default</b>	A Add
<b>Options</b>	A Add the entities R Replace the existing entities

---

**With data**

<b>Restriction</b>	Use only when copying MANTIS file profiles.
<b>Description</b>	<i>Required.</i> Indicates whether you want the MANTIS file data copied along with the MANTIS file profile.
<b>Default</b>	<u>N</u> O
<b>Consideration</b>	You can also use this field with the All User Entities option (see “ <a href="#">Copying all user entities to bin</a> ” on page 278).

---

**New name**

<b>Description</b>	<i>Optional.</i> Specifies the new name you want to give to the entity being copied.
<b>Format</b>	1–30 alphanumeric characters

**Considerations**

- ◆ You can specify a new name for only one entity at a time (see “[Copying user file data to bin](#)” on page 275).
- ◆ It is possible to give an entity a new name that is longer than the original design limitations. For example, a file name which has a design limitation of 16 bytes can be given a new name of up to 30 bytes in Copy from Library to Bin. If the existing entity name will be truncated, MANTIS issues a warning message, giving you the opportunity to change the name.

If you use a name longer than the design limitations shown in the table earlier in this section, you will be able to use the entity in a program but will not be able to access it in the respective design facility.

The following options are also available from the Copy from Library to Bin screen shown in the screen illustration at the beginning of this section.

### **Turn print ON/OFF**

You can indicate whether you want to print a trail of all updates made during a copy session by setting the Turn Print ON/OFF option. The default setting for the print trail is off.

To turn the print trail on or off from any screen, type a 12 in the selection field and press ENTER or press PF12. When the print trail is on, the word PRINT appears in the upper-left corner of the current screen. MANTIS will route the printing trail to your designated printer.

### **Help**

You can access online help from the Copy from Library to Bin screen by typing a 13 in the selection field and pressing ENTER or by pressing PF13. Press ENTER to page through the help. Press the CANCEL key to exit.



- ◆ Select a single entity to be copied from an entity list. To display an entity list, leave the Starting Name and Ending Name fields blank at the Copy from Library to Bin screen (see the screen illustration in “Copying from library to bin” on page 261). Type the option number of the type of entity you want to copy in the selection field and press ENTER, or press the corresponding PF key.

MANTIS returns the Copy to Bin: *nnnnn* entity list shown in the following screen illustration:

```

TRA003                               Copy to Bin: Screens                               YYYY/MM/DD
Bin: BURRYSBIN                               HH:MM:SS

A/R  -----Name in Library----- -----New Name----- --Status--
BURRYS_SCREEN1                          BURRYS_SCREEN1
BURRYS_SCREEN2                          BURRYS_SCREEN2
BURRYS_SCREEN3                          BURRYS_SCREEN3
BURRYS_SCREEN4                          BURRYS_SCREEN4
    
```

You can page through the entity list by pressing ENTER or by using the repoint option. Tab to the bottom-left corner of the screen and type 1–32 characters (representing an entity or the first part of an entity), and press ENTER. The entity list displays beginning with the entry corresponding to, or the first entry following, your repoint value.

The following field descriptions apply to the Copy to Bin entity list:

---

### Copy to bin

**Description** *Display.* Shows the type of entity list being displayed.

**Consideration** You specify this field at the Copy from Library to Bin screen (see the screen illustration at the beginning of this section).

---

### Bin

**Description** *Display.* Shows the name of the bin the entities are to be copied into.

**Consideration** You specify this field at the Transfer Facility menu (see “[Creating a new bin](#)” on page 259 ).

---

### A/R

**Description** *Optional.* Indicates the action you want to take with the entity.

**Options**

- A Add the entity
- R Replace the existing entity
- Blank No action

---

### Name in library

**Description** *Display.* Shows the name of the entity as it appears in the library.

---

### New name

**Description** *Optional.* Displays the entity name as it currently appears and allows you to type a new name over the current name.

---

### Status

**Description** *Display.* Displays confirmation messages for each entity copied (e.g., ADDED or REPLACED).

For example, to copy a single screen from the Copy to Bin (screens) entity list, tab to the row containing the screen you want to copy and type an A in the A/R column shown in the following screen illustration:

```
TRA003                      Copy to Bin: Screens                      YYYY/MM/DD
Bin: BURRYSBIN                      HH:MM:SS

A/R  -----Name in Library----- -----New Name----- --Status--
      BURRYS_SCREEN1                      BURRYS_SCREEN1
A    BURRYS_SCREEN2                      BURRYS_SCREEN2
      BURRYS_SCREEN3                      BURRYS_SCREEN3
```

When you press ENTER, MANTIS copies the screen to your bin and displays a confirmation message in the Status field shown in the following screen illustration:

```
TRA003                      Copy to Bin: Screens                      YYYY/MM/DD
Bin: BURRYSBIN                                     HH:MM:SS

A/R  -----Name in Library-----  -----New Name-----  --Status--
      BURRYS_SCREEN1                 BURRYS_SCREEN1
      BURRYS_SCREEN2                 BURRYS_SCREEN2          ADDED
      BURRYS_SCREEN3                 BURRYS_SCREEN3
```

If an entity already exists in the bin, the message CANNOT ADD will appear in the Status field. If you want to replace the entity in the bin with the entity in your library, type an R in the A/R column to R (Replace) and press ENTER. MANTIS will replace the existing entity and return the confirmation message, REPLACED.

## Copying multiple entities to bin

You can copy multiple entities from a library to a bin in one of two ways:

- ◆ Specify a range of entities to be copied at the Copy from Library to Bin screen (see the screen illustration in “[Copying from library to bin](#)” on page 261). Follow these steps:
  1. Type the name of the entity where you want the copy to begin in the Starting Name field.
  2. Type the name of the entity where you want the copy to end in the Ending Name field.
  3. If you are adding the entities, accept the default A (Add) in the (A)dd/(R)eplace field.
  4. If you are replacing entities in the bin, type an R over the A in this field.
  5. To execute, type the entity option number (1–9) in the Action field and press Enter, or press the corresponding PF key.

For example, the following screen illustration shows how to copy a range of screens from BURRYS\_SCREEN1 through BURRYS\_SCREEN3:

```

TRA002                      Copy from Library to Bin                      YYYY/MM/DD
Bin: BURRYSBIN                                     HH:MM:SS

Programs ..... 1              DL/I Call Profiles ..... 9
Screens ..... 2
File Profiles ..... 3
Prompters ..... 4            Turn print ON/OFF ..... 12
Interfaces ..... 5           Help ..... 13
Scenarios ..... 6            User File Data (Kanji Keys) .. 14 (15)
Total File Views ..... 7     All user entities ..... 24
External File Views ..... 8   Terminate this facility .. CANCEL

      Starting name :burrys_screen1      :
      Ending name  :burrys_screen3      :
(A)dd/(R)eplace  : A :                  With data : N :
      New name    :                      :

                                : 2 :
    
```

When MANTIS executes the action, it returns the Copy to Bin: Screens entity list shown below. This list displays the range of entities you specified on the previous screen and an A (Add) or an R (Replace) displays (as you specified) in the A/R column shown in the following screen illustration:

TRA003	Copy to Bin: Screens	YYYY/MM/DD
Bin: BURRYSBIN		HH:MM:SS
A/R	-----Name In Library-----	-----New Name----- --Status--
A	BURRYS_SCREEN1	BURRYS_SCREEN1
A	BURRYS_SCREEN2	BURRYS_SCREEN2
A	BURRYS_SCREEN3	BURRYS_SCREEN3

If you want to copy all of the entities as specified, press ENTER. MANTIS will copy the entities and display individual confirmation messages for each entity in the Status field shown in the following screen illustration:

```

TRA003                               Copy to Bin: Screens                               YYYY/MM/DD
Bin: BURRYSBIN                               HH:MM:SS

A/R  -----Name in Library-----  -----New Name-----  --Status--
BURRYS_SCREEN1                        BURRYS_SCREEN1          ADDED
BURRYS_SCREEN2                        BURRYS_SCREEN2          ADDED
BURRYS_SCREEN3                        BURRYS_SCREEN3          ADDED

```

If you only want to copy some of the displayed entities, tab to the A/R column and use the space bar to erase.

If an entity already exists in the bin, MANTIS displays the message CANNOT ADD in the Status field. If you want to replace the entity in the bin with the entity in your library, type an R in the A/R column and press ENTER. MANTIS replaces the existing entity and returns the confirmation message, REPLACED.

- ◆ To specify a generic pattern of entities to be copied, leave the Ending Name field blank and in the Starting Name field, use the asterisk (\*) and question mark (?) wildcard characters, as follows:
  - \* Represents an indefinite number of characters. For example, \*2\* will yield a list of all entities whose names contain a 2.
  - ? Represents a single character. SCREEN???? will yield an entity list of all entities whose names begin with SCREEN and end with any four characters.

To obtain a list of entities that you plan to copy most of, type the asterisk (\*) wildcard character in the Starting Name field (leave the Ending Name field blank). To execute, type the entity option number in the selection field and press ENTER, or press the corresponding PF key. MANTIS displays the appropriate entity list and places an A (Add) or R (Replace) in the A/R field as you specified. Use the space bar to erase the A or the R in front of those entities you do not want to copy. Press ENTER to copy the entities.

If you want to display a list of available entities, but intend to copy only a few of them, leave the Starting Name field blank. Issue the action by typing the menu number of the entity type you want to copy in the selection field and pressing ENTER, or by pressing the corresponding PF key. MANTIS will display a complete list of entities, but the A/R column will be blank. Type an A if you want to add the entity to the bin. Type an R if you want the added entity to replace an existing entity in the bin. Press ENTER to copy the entities.

After you copy the entities, press the CANCEL key to return to the Copy from Library to Bin screen (see the screen illustration in “Copying from library to bin” on page 261). You can continue copying entities, or press the CANCEL key again to exit to the Transfer Facility menu.

## Copying user file data to bin

You can copy data records from a MANTIS file in your library to an existing MANTIS file in the current bin. Select the User File Data option from the Copy from Library to Bin screen (see the screen illustration in “Copying from library to bin” on page 261) by typing a 14 in the selection field and pressing ENTER or by pressing PF14. MANTIS returns the Copy User Data to Bin screen shown in the following screen illustration:

TRA004	Copy User Data To Bin	YYYY/MM/DD
Bin: BURRYSBIN		HH:MM:SS
File name :	:	
Starting key :	:	
Ending key :	:	
File name in bin :	:	
New key value :	:	
(A)dd/(R)eplace : A :		
(Press ENTER to copy; PF12 to turn print ON/OFF; CANCEL to exit)		

MANTIS displays the current bin name at the top of the screen. Enter your data as described in the field descriptions below:

---

### File name

**Description** *Required.* Specifies the name of the MANTIS file from which you are copying the MANTIS file data.

**Format** 1–16 alphanumeric character existing MANTIS file name

---

### Starting key

**Description** *Required.* Specifies: (1) the key of the single record in the MANTIS file that you want to copy, or (2) the key from which you want to start copying a range of records.

**Format** 1–32 alphanumeric characters

### Considerations

- ◆ You can copy single or multiple records by entering a single key value, a range of key values, or a generic key pattern of 1–32 characters (see [“Copying from library to bin”](#) on page 261).
  - ◆ If the file has a compound key (made up of several fields), the Starting Key field will contain the value of the first key field only.
  - ◆ MANTIS copies all records with the specified value in their first key field.
- 

### Ending key

**Description** *Required* if you are copying a range of files. Otherwise, leave blank.

**Format** 1–32 alphanumeric characters

---

### File name in bin

**Description** *Optional.* Specifies the name of the file in the bin to which you are copying the MANTIS file.

**Format** 1–16 alphanumeric character existing MANTIS file name

---

**New key value**

**Description** *Optional.* Indicates the new value you want to give a key value in the bin.

**Format** 1–32 alphanumeric character key value

---

**(A)dd/(R)eplace**

**Description** *Required.* Indicates whether the data being copied is to be added (A) as new data or is to replace (R) existing data.

**Default** A Add

**Options** A Add

R Replace

When you finish entering the data, press ENTER. MANTIS displays a confirmation message in the lower-left corner of the screen when it copies the MANTIS file data.

## Copying all user entities to bin

You can copy all of the entities in your library (except MANTIS file data) into a current bin by using the All User Entities option on the Copy from Library to Bin screen (see the screen illustration in “[Copying from library to bin](#)” on page 261). You can copy MANTIS file profiles entities with or without MANTIS file data.

If you want to add the entities to the bin, accept the default A (Add) for the (A)dd/(R)eplace field. If you are replacing the entities in a bin with the entities from your library, type an R (Replace) over the A in the (A)dd/(R)eplace field. Use R (Replace) to copy all entities, including those that already exist in the bin.

Select the All User Entities option from the Copy from Library to Bin screen by typing a 24 in the selection field and pressing ENTER or by pressing PF24. MANTIS displays a confirmation message in the lower left-hand corner of the screen when the entities are copied.

### Copying MANTIS file data

If you want to copy MANTIS file data along with the user entities, move the cursor to the With Data field and type Y (Yes) over the default value N (No).

## Copying from bin to library

Use the Copy from Bin to Library option to copy entities from the current bin to your library. Call up the bin you want to copy from by entering the bin name and password on the Transfer Facility menu (see “[Transfer Facility menu](#)” on page 257). Select the Copy from Bin to Library option by typing a 3 in the selection field and pressing ENTER or by pressing PF3. MANTIS returns the Copy from Bin to Library screen shown in the following screen illustration:

```

TRA005                      Copy From Bin To Library                      YYYY/MM/DD
Bin: BURRYSBIN                                     HH:MM:SS

Programs ..... 1           DL/I Call Profiles ..... 9
Screens ..... 2
File Profiles ..... 3
Prompters ..... 4           Turn print ON/OFF ..... 12
Interfaces ..... 5           Help ..... 13
Scenarios ..... 6           User File Data (Kanji Keys) .. 14 (15)
TOTAL File Views ..... 7     All ..... 24
External File Views ..... 8   Terminate this facility .. CANCEL

      Starting name :
      Ending name :
(A)dd/(R)eplace : A : With data : N : With history : Y :

      New name :
      New password :
                   :
                   :

```

The Copy from Bin to Library screen lists the types of entities you can copy and provides options for a printing trail and help prompters. From this screen, you can copy selected entities from the bin, a range of entities from the bin, or all of the entities in the bin.

The following field descriptions apply to the Copy from Bin to Library screen:

---

## Bin

**Description** *Display.* Shows the name of the current bin (the one you specified on the Transfer Facility menu).

---

## Starting name

**Description** *Optional.* Indicates: (1) the name of the entity, or (2) the first name in a range of entities you want to copy to a library.

**Format** 1–30 alphanumeric character program or screen name

1–16 alphanumeric character name for all other entities (see the table in “[Copying from library to bin](#)” on page 261)

---

## Ending name

**Description** *Required* if you are copying a range of entities. Specifies the last name in a range of entities to be copied.

**Format** 1–30 alphanumeric character program or screen name

1–16 alphanumeric character name for all other entities (see the table in “[Copying from library to bin](#)” on page 261)

**Consideration** Leave this field blank if you are copying a single entity.

---

**(A)dd/(R)eplace**

<b>Description</b>	<i>Required.</i> Indicates whether the entities being copied are to be added (A) as new entities or if they are to replace (R) existing entities.
<b>Default</b>	A Add
<b>Options</b>	A Add R Replace

---

**With data**

<b>Restriction</b>	Use only when copying MANTIS file profiles.
<b>Description</b>	<i>Required.</i> Indicates whether you want to copy MANTIS file data along with the MANTIS file profile.
<b>Default</b>	NO
<b>Options</b>	<u>Y</u> ES <u>N</u> O
<b>Consideration</b>	You can also use this field with the All User Entities option (see “ <a href="#">Copying user file data to bin</a> ” on page 275).

## With history

<b>Description</b>	<i>Required.</i> Indicates whether you want to move EEPRs (Extended Entity Profile Records) along with the program you are transferring.
<b>Default</b>	<u>Y</u> ES
<b>Options</b>	<u>Y</u> ES <u>N</u> O

## Considerations

- ◆ Profile history is stored as an external VSAM file record called the Extended Entity Profile Record (EEPR). The EEPR contains the following data:
    - Program information (description, password, status, date and time of last change, terminal ID, user ID, and version number)
    - Component Engineering Facility (CEF) information (Check, Compose and Decompose)
    - Bind information (Check, Bind, Unbind) on SQL and HPO-bound programs
- Information about CREF data is not included on the EEPR because CREF data applies only to the source cluster and is never transferred. Type N (no) over the default to transfer program without EEPR data.
- ◆ If your system administrator installed CEF on the source cluster, MANTIS transfers all EEPR data along with the program into the transfer bin. You can move all EEPR data unchanged by accepting the default value for this field (Y). If you set this field to N, MANTIS creates a new EEPR record for the program and sets the version number to 1.

- ◆ If your system administrator did not install CEF on the source cluster, MANTIS creates an EEPR record on the target cluster using new data, regardless of whether you set With history to Y or N.
- ◆ MANTIS always transfers HPO-bound programs with the HPO EEPR data unchanged regardless of whether you set With history to Y or N.
- ◆ MANTIS always transfers SQL-bound programs with the SQL EEPR data unchanged regardless of whether you set With History to Y or N. If an SQL-bound program is transferred to a target cluster that does not support SQL, the status of the program will be changed to NONEXEC. You can change the status of the transferred program back to ACTIVE by updating the program profile.

### General considerations

- ◆ If you are issuing a REPLACE, MANTIS replaces all EEPR data on the target cluster.
- ◆ MANTIS never transfers CREF data, as it applies only to the source cluster. You should repeat the CREF function after each program transfer.

---

### New name

**Description**     *Optional.* Specifies the new name you want to give to an entity being copied.

**Format**            1–30 alphanumeric character program or screen name  
 1–16 alphanumeric character name for all other entities (see the table in [“Copying from library to bin”](#) on page 261)

### Considerations

- ◆ You can specify a new name for only one entity at a time.
- ◆ It is possible to give an entity a new name that is longer than the original design limitations allowed. For example, a file name which has a design limitation of 16 bytes, can be given a new name of up to 30 bytes in Copy from Bin to Library. While this does not inhibit the transfer process, it produces an entity which cannot be updated by the design facilities. If you give an entity a new name that exceeds the design limitations, you will receive a warning message, giving you the opportunity to change the name.

---

## New password

<b>Description</b>	<i>Optional.</i> Indicates the new password you want to give an entity in your library.
<b>Format</b>	1–32 alphanumeric characters
<b>Default</b>	User password

The following options can also be used from the Copy from Bin to Library screen shown at the beginning of this section.

---

## Turn print ON/OFF

You can indicate whether you want to print a trail of all updates made during a copy session by setting the Turn Print ON/OFF option. The default setting for the print trail is off.

Type a 12 in the selection field and press ENTER, or press PF12 from any screen to turn the print trail on or off. When the print trail is ON, the word PRINT appears in the upper-left corner of the current screen. MANTIS will route the printing trail to your designated printer.

---

## Help

Select online help from the Copy from Bin to Library screen by typing a 13 in the selection field and pressing ENTER or by pressing PF13. Press ENTER to page through the help prompters. Press the CANCEL key to exit.

## Copying single entities to library

You can copy a single entity from a bin to a library in one of two ways:

- ◆ Type in the name of the entity you want to copy in the Starting Name field and leave the Ending Name field blank.

If you are adding a new entity to the library, accept the default value A (Add). If you are replacing an existing entity, type R (Replace) over the A. If you want to give the entity a new name in the library, type it in the New Name field.

To execute, type the entity option number (1-11) in the selection field and press ENTER. MANTIS copies the entity to the library and displays a confirmation message in the lower left-hand corner of the screen.

For example, the following screen illustration shows a new screen, BURRYS\_SCREEN1, being copied to a library from a bin called BURRYSBIN. The entity option number for screens (2) is entered in the selection field and ENTER is pressed. Optionally, you can press PF2.

```

TRA005                               Copy From Bin To Library                               YYYY/MM/DD
Bin: BURRYSBIN                               HH:MM:SS

Programs ..... 1                       DL/I Call Profiles ..... 9
Screens ..... 2
File Profiles ..... 3
Prompters ..... 4                       Turn print ON/OFF ..... 12
Interfaces ..... 5                       Help ..... 13
Scenarios ..... 6                       User File Data (Kanji Keys) .. 14 (15)
TOTAL File Views ..... 7                 All ..... 24
External File Views ..... 8               Terminate this facility .. CANCEL

Starting name : burrys_screen1           :
Ending name   :                          :
(A)dd/(R)eplace : A : With data : N : With history : Y :

New name      :                          :
New password  :                          :
: 2 :

```

- ◆ Select a single entity to be copied from an entity list. To display an entity list, leave the Starting Name and Ending Name fields blank at the Copy from Bin to Library screen (see the preceding screen illustration). Type the option number of the type of entity you want to copy in the selection field and press ENTER, or press the corresponding PF key.

MANTIS returns the Copy to Library: nnnnnn entity list. For example, the Copy to Library: Screens entity list is shown in the following screen illustration:

```
TRA006                      Copy to Library: Screens                      YYYY/MM/DD
Bin: nnnnnn                                                         HH:MM:SS

A/R  -----Name in Bin----- -----New Name----- --Status-- --
BURRYS_SCREEN1                BURRYS_SCREEN1
BURRYS_SCREEN2                BURRYS_SCREEN2
BURRYS_SCREEN3                BURRYS_SCREEN3
```

You can page through the entity list by pressing ENTER or by using the repoint option. Tab to the bottom left corner of the screen and type 1–32 characters (representing an entity or the first part of an entity), and press ENTER. The entity list displays beginning with the entry corresponding to, or the first entry following, your repoint value.

The New Password field displays to the right of the Status field, outside the boundaries of most physical terminal screens. To display the New Password field, enter window mode by typing a *w* in the lower-right corner of the screen and pressing ENTER. Window mode PF keys display to enable you to move around the screen. Press PF9 to exit window mode.

---

The following field descriptions apply to the Copy to Library entity list:

---

### Copy to library

**Description** *Display.* Shows the type of entity list being displayed.

**Consideration** You specify this field at the Copy from Bin to Library screen (see “[Copying single entities to bin](#)” on page 265 ).

---

### Bin

**Description** *Display.* Shows the name of the bin from which the entities are being copied.

**Consideration** You specify this field at the Transfer Facility menu (see “[Creating a new bin](#)” on page 259 ).

---

### A/R

**Description** *Optional.* Indicates the action you want to take with the entity.

**Options** A Add the entities

R Replace the existing entities

Blank No action

---

### Name in bin

**Description** *Display.* Shows the name of the entity as it appears in the bin.

### New name

- Description** *Optional.* Indicates the new name of the entity as it will display in the library.
- Format** 1–30 alphanumeric character program or screen name
- 1–16 alphanumeric character name for all other entities (see the table in “Copying from library to bin” on page 261)

### Considerations

- ◆ You can specify a new name for only one entity at a time.
- ◆ It is possible to give an entity a new name that is longer than the original design limitations allowed. For example, a file name that has a design limitation of 16 bytes, can be given a new name of up to 30 bytes in Copy from Bin to Library. Although this does not inhibit the transfer process, it produces an entity that cannot be updated by the design facilities. If you give an entity a new name that exceeds the design limitations, you will receive a warning message giving you the opportunity to change the name.

---

### Status

- Description** *Display.* Displays confirmation messages for each entity copied in the Status field (e.g., ADDED or REPLACED).

---

### New password

- Description** *Optional.* Displays the current user password and allows you to specify a new password.
- Format** 1–16 alphanumeric characters
- Default** User password

### Considerations

- ◆ To display the New Password field, enter window mode by typing a w in the lower-right corner of the screen and pressing ENTER. Window mode PF keys display to enable you to move around the screen. Press PF9 to exit window mode.
- ◆ Type the new password over the existing password.

For example, to copy a single screen from the Copy to Library: Screens entity list, tab to the row containing the screen you want to copy and type an A in the A/R column as shown in the following screen illustration:

TRA006	Copy to Library: Screens	YYYY/MM/DD
Bin: BURRYSBIN		HH:MM:SS
A/R	-----Name in Bin-----	-----New Name----- --Status-- --US
	BURRYS_SCREEN1	BURRYS_SCREEN1
A	BURRYS_SCREEN2	BURRYS_SCREEN2
	BURRYS_SCREEN3	BURRYS_SCREEN3

When you press ENTER, MANTIS copies the screen to your library and displays a confirmation message in the Status field shown in the following screen illustration:

```
TRA006                               Copy to Library: Screens                               YYYY/MM/DD
Bin: BURRYSBIN                               HH:MM:SS

A/R  -----Name in Bin-----  -----New Name-----  --Status--  --US
BURRYS_SCREEN1                BURRYS_SCREEN1
BURRYS_SCREEN2                BURRYS_SCREEN2                ADDED
BURRYS_SCREEN3                BURRYS_SCREEN3
```

If an entity already exists in the library, the message “CANNOT ADD” will appear in the Status field. If you want to replace the entity in the library with the entity in your bin, type an R in the A/R column to R (Replace) and press ENTER. MANTIS replaces the existing entity and returns a confirmation message.

## Copying multiple entities to library

You can copy multiple entities from a bin to a library in one of two ways:

- ◆ Specify a range of entities to be copied at the Copy from Bin to Library screen (see “[Copying single entities to library](#)” on page 285). Perform the following:
  1. Type the name of the entity where you want the copy to begin in the Starting Name field.
  2. Type the name of the entity where you want the copy to end in the Ending Name field.
  3. If you are adding the entities, accept the default A (Add) in the (A)dd/(R)eplace field. If the entities you are copying are to replace existing entities in the library, type an R over the A in this field.
  4. To execute, type the entity option number (1–9) in the selection field, then press ENTER, or press the corresponding PF key.

For example, the following screen illustration shows how to copy a range of screens (BURRYS\_SCREEN1 to BURRYS\_SCREEN3) from a bin to a library:

```

TRA005                      Copy From Bin To Library                      YYYY/MM/DD
Bin: BURRYSBIN                      HH:MM:SS

Programs ..... 1          DL/I Call Profiles ..... 9
Screens ..... 2
File Profiles ..... 3
Prompters ..... 4          Turn print ON/OFF ..... 12
Interfaces ..... 5          Help ..... 13
Scenarios ..... 6          User File Data (Kanji Keys) .. 14 (15)
TOTAL File Views ..... 7    All ..... 24
External File Views ..... 8  Terminate this facility .. CANCEL

      Starting name : burrys_screen1          :
      Ending name  : burrys_screen3          :
(A)dd/(R)eplace  : A : With data : N : With history : Y :

      New name     :                          :
      New password :                          :
                  : 2 :
    
```

When ENTER is pressed, MANTIS returns the Copy to Library: Screens entity list shown below. This list displays the range of entities you specified on the previous screen and an A (Add) or an R (Replace) appears (as previously specified) in the A/R column shown in the following screen illustration:

TRA006	Copy to Library: Screens	YYYY/MM/DD		
Bin: BURRYSBIN		HH:MM:SS		
A/R	-----Name in Bin-----	-----New Name-----	--Status--	--US
A	BURRYS_SCREEN1	BURRYS_SCREEN1		
A	BURRYS_SCREEN2	BURRYS_SCREEN2		
A	BURRYS_SCREEN3	BURRYS_SCREEN3		

When you press ENTER, MANTIS copies the screens to your library and displays a confirmation message in the Status field shown in the following screen illustration:

```
TRA006                               Copy to Library: Screens                               YYYY/MM/DD
Bin: BURRYSBIN                               HH:MM:SS

A/R  -----Name in Bin-----  -----New Name-----  --Status--  --US
BURRYS_SCREEN1                BURRYS_SCREEN1                ADDED
BURRYS_SCREEN2                BURRYS_SCREEN2                ADDED
BURRYS_SCREEN3                BURRYS_SCREEN3                ADDED
```

If an entity already exists in the library, the message CANNOT ADD displays in the Status field. If you want to replace the entity in the library with the entity in your bin, type an R in the A/R column to R (Replace) and press ENTER. MANTIS replaces the existing entity and returns a confirmation message.

- ◆ To specify a generic pattern of entities to be copied, leave the Ending Name field blank and in the Starting Name field, use the asterisk (\*) and question mark (?) wildcard characters, as follows:
  - \* Represents an indefinite number of characters. For example, \*2\* will yield a list of all entities whose names contain a 2.
  - ? Represents a single character. SCREEN???? will yield an entity list of all entities whose names begin with SCREEN and end with any four characters.

To obtain a list of entities that you plan to copy most of, type the asterisk (\*) wildcard character in the Starting Name field (leave the Ending Name field blank). To execute, type the entity option number in the selection field and press ENTER, or press the corresponding PF key. MANTIS displays the appropriate entity list and places an A (Add) or R (Replace) in the A/R field as you specified. Use the space bar to erase the A or the R in front of those entities you do not want to copy. Press ENTER to copy the entities.

If you want to display a list of available entities, but intend to copy only a few of them, leave the Starting Name field blank. Issue the action by typing the menu number of the entity type you want to copy in the selection field and pressing ENTER, or by pressing the corresponding PF key. MANTIS displays a complete list of entities, but the A/R column will be blank. Type an A if you want to add the entity to the library. Type an R if you want the added entity to replace an existing entity in the library. Press ENTER to copy the entities.

After you copy the entities, press the CANCEL key to return to the Copy from Bin to Library screen (see “[Copying single entities to library](#)” on page 285). You can continue copying entities, or press the CANCEL key again to exit to the Transfer Facility menu.

### Copying user file data to library

The User File Data option on the Copy from Bin to Library screen allows you to copy data records from a user file in the current bin to an existing user file in your library. When you select the User File Data option from the Copy from Bin to Library screen (see “Copying single entities to library” on page 285), MANTIS returns the Copy User Data to Library screen shown in the following screen illustration:

```
TRA007                               Copy User Data To Library                               YYYY/MM/DD
Bin: BURRYSBIN                                                                HH:MM:SS

File name in bin :                               :
Starting key   :                               :
Ending key    :                               :

File name in library :                           :
New key value  :                               :

(A)dd/(R)eplace : A :

(Press ENTER to copy; PF12 to turn print ON/OFF; CANCEL to exit)
```

MANTIS displays the current bin name at the top of the screen. Enter information for this screen as described in the field descriptions below:

---

### File name in bin

**Description** *Required.* Specifies the name of the MANTIS file from which you are copying the MANTIS file data.

**Format** 1–16 alphanumeric characters

---

### Starting key

**Description** *Required.* Specifies: (1) the key of the single record in the MANTIS file that you want to copy, or (2) the key from which you want to start copying a range of records.

**Format** 1–32 alphanumeric characters

### Considerations

- ◆ You can copy single or multiple records by entering a single key value, a range of key values, or a generic key pattern of 1–32 characters (see [“Copying from library to bin”](#) on page 261).
- ◆ If the file has a compound key (made up of several fields), the Starting Key field contains the value of the first key field only.
- ◆ MANTIS copies all records with the specified value in their first key field.

---

### Ending key

**Description** *Required* if you are specifying a range of records. Specifies the name of the record in the file where you want to end the copy.

**Format** 1–32 alphanumeric characters

**Consideration** Leave this field blank if you are copying only a single record.

---

### File name in library

**Description** *Optional.* Specifies the name of the MANTIS file in the library to which you are copying the MANTIS file data.

**Format** 1–16 alphanumeric character existing file name

### New key value

<b>Description</b>	<i>Optional.</i> Indicates the new value you want to give a key value in the library.
<b>Format</b>	1–32 alphanumeric character key value

---

### (A)dd/(R)eplace

**Description** *Required.* Indicates whether the data being copied is to be added (A) as new data or if it is to replace (R) existing data.

**Default** A Add

**Options** A Add

R Replace

When you finish entering the data, press ENTER. MANTIS displays a confirmation message in the lower-left corner of the screen after it copies the file data.

## Copying all user entities to library

You can copy all of the entities in a bin (except MANTIS file data) into your library by using the All User Entities option on the Copy from Bin to Library screen (see the second illustration in “[Copying single entities to library](#)” beginning on page 285). You can copy MANTIS file profiles with or without MANTIS file data.

If you want to add the entities to the library, accept the default A (Add) for the (A)dd/(R)eplace field. If you are replacing the entities in a library with the entities from a bin, type an R (Replace) over the A in the (A)dd/(R)eplace field. Use R (Replace) to copy all entities, including those that already exist in the library.

Select the All User Entities option from the Copy from Bin to Library screen by typing a 24 in the selection field and pressing ENTER, or by pressing PF24. MANTIS displays a confirmation message in the lower-left corner of the screen when the entities are copied.

If you want to copy MANTIS file data along with the user entities, move the cursor to the With Data field and type Y (Yes) over the default value N (No).

## Deleting entities from a bin

You can delete specific entities from a bin by using the Delete from Bin option on the Transfer Facility menu (see “Transfer Facility menu” on page 257). Call up the bin you want by typing the bin name and password (if required) in the spaces provided on the Transfer Facility menu. Select the Delete from Bin option by typing a 4 in the selection field and pressing ENTER or by pressing PF4. MANTIS returns the Delete From Bin menu shown in the following screen illustration:

```
TR008                               Delete From Bin                               YYYY/MM/DD
Bin: BURRYSBIN                       HH:MM:SS

Programs ..... 1                    External File Views ..... 8
Screens ..... 2                     DL/I Call Profiles ..... 9
File Profiles ..... 3
Prompters ..... 4
Interfaces ..... 5                  Turn Print ON/OFF ..... 12
Scenarios ..... 6                   Help ..... 13
TOTAL File Views ..... 7           User File Data (Kanji Keys) 14 (15)
                                     Terminate this facility .. CANCEL

Starting name :                       :
Ending name  :                       :

                                     :   :
```

The current bin name appears in the upper-left corner of the screen. From this screen, you can delete single or multiple entities.

The following field descriptions apply to the Delete from Bin screen in the preceding screen illustration:

---

**Bin**

**Description** *Display.* Shows the current bin as specified on the Transfer Facility menu (see “[Creating a new bin](#)” on page 259).

---

**Starting name**

**Description** *Optional.* Indicates: (1) the name of the entity, or (2) the first name in a range of entities that you want to delete from a bin.

**Format** 1–30 alphanumeric character existing entity name

---

**Ending name**

**Description** *Required* if you are deleting a range of entities. Indicates the last name in a range of entities to be deleted.

**Format** 1–30 alphanumeric character existing entity name

**Consideration** Leave this field blank if you are deleting a single entity.

## Deleting single entities

You can delete a single entity from a bin in one of two ways:

- ◆ Type in the name of the entity you want to delete in the Starting Name field and leave the Ending Name field blank. The screen BURRYS\_SCREEN1 displays in the Starting Name field shown in the following screen illustration:

```

TR008                                     Delete From Bin                                     YYYY/MM/DD
Bin: BURRYSBIN                                                                    HH:MM:SS

Programs ..... 1                         External File Views ..... 8
Screens ..... 2                          DL/I Call Profiles ..... 9
File Profiles ..... 3
Prompters ..... 4                        Turn Print ON/OFF ..... 12
Interfaces ..... 5                       Help ..... 13
Scenarios ..... 6                        User File Data (Kanji Keys) 14 (15)
TOTAL File Views ..... 7                 Terminate this facility .. CANCEL

Starting name :burrys_screen1              :
Ending name  :                             :

: 2 :
    
```

To execute, type a 2 in the selection field and press ENTER, or press PF2. MANTIS deletes the entity from the bin and displays a confirmation message in the lower-left corner of the screen.

- ◆ Select a single entity to delete from an entity list. To obtain a list of the entities in a bin, type the entity option number in the selection field at the Delete From Bin screen (as shown in the preceding screen illustration) and press ENTER, or press the corresponding PF key. MANTIS returns the Delete from Bin entity list. The example in the following screen illustration shows the Delete from Bin: Screens entity list:

Del	-----Name-----	---Created By---	--Date--	--Status--
	BURRYS_SCREEN1	USERNAME	YYYY/MM/DD	
	BURRYS_SCREEN2	USERNAME	YYYY/MM/DD	
	BURRYS_SCREEN3	USERNAME	YYYY/MM/DD	
	BURRYS_SCREEN4	USERNAME	YYYY/MM/DD	

Page through the entity list by pressing ENTER or by using the repoint option. Tab to the bottom-left corner of the screen and type 1–30 characters (representing an entity or the first part of an entity), and press ENTER. The entity list displays beginning with the entry corresponding to, or the first entry following, your repoint value.

The following field descriptions apply to the Delete from Bin entity list in the preceding screen illustration:

---

### Delete from bin

**Description** *Display.* Shows the type of entity list being displayed.

**Consideration** You specify this field at the Delete from Bin screen (see the screen illustration in “[Deleting entities from a bin](#)” on page 300).

---

### Bin

**Description** *Display.* Shows the name of the bin from which the entities are being deleted.

**Consideration** You specify this field at the Transfer Facility menu (see “[Creating a new bin](#)” on page 259 ).

---

### Del

**Description** *Optional.* Indicates the action to be taken on the entity.

**Options** D Delete the entity  
Blank No action to be taken

---

### Name

**Description** *Display.* Indicates the name of the entity as it appears in the bin.

---

### Created by

**Description** *Display.* Shows the name of the user who created the entity.

---

### Date

**Description** *Display.* Displays the date the entity was copied into the bin.

---

### Status

**Description** *Display.* Displays confirmation messages for each entity deleted.

For example, to delete a single entity from the Delete from Bin: Screens entity list, tab to the row containing the screen you want to delete and type a D in the Del column shown in the following screen illustration:

TRA009		Delete From Bin: Screens		YYYY/MM/DD	
Bin: BURRYSBIN				HH:MM:SS	
Del	-----Name-----	---Created By---	--Date--	--Status--	
D	BURRYS_SCREEN1	USERNAME	YYYY/MM/DD		
	BURRYS_SCREEN2	USERNAME	YYYY/MM/DD		
	BURRYS_SCREEN3	USERNAME	YYYY/MM/DD		

When you press ENTER, MANTIS deletes the screen from the bin and displays a confirmation message in the Status field, shown in the following screen illustration:

TRA009	Delete From Bin: Screens	YYYY/MM/DD		
Bin: BURRYSBIN		HH:MM:SS		
Del	-----Name-----	---Created By---	--Date--	--Status--
	BURRYS_SCREEN1	USERNAME	YYYY/MM/DD	DELETED
	BURRYS_SCREEN2	USERNAME	YYYY/MM/DD	
	BURRYS_SCREEN3	USERNAME	YYYY/MM/DD	

## Deleting multiple entities

You can delete multiple entities from a bin in one of two ways:

- ◆ Specify a range of entities to be deleted at the Delete from Bin screen (see the screen illustration in “Deleting entities from a bin” on page 300). Follow these steps:
  1. Type the name of the entity where you wish the delete to begin in the Starting Name field.
  2. Type the name of the entity where you want the delete to end in the Ending Name field.
  3. To execute, type the entity option number (1–9) in the selection field and then press ENTER, or press the corresponding PF key.

For example, the following screen illustration shows how to delete a range of screens (BURRYS\_SCREEN2 to BURRYS\_SCREEN4) from a bin:

```

TRA008                                     Delete From Bin                                     YYYY/MM/DD
Bin: BURRYSBIN                                                                    HH:MM:SS

Programs ..... 1                          External File Views ..... 8
Screens ..... 2                          DL/I Call Profiles ..... 9
File Profiles ..... 3
Prompters ..... 4
Interfaces ..... 5                       Turn Print ON/OFF ..... 12
Scenarios ..... 6                       Help ..... 13
TOTAL File Views ..... 7                User File Data (Kanji Keys) 14 (15)
                                          Terminate this facility .. CANCEL

Starting name :burrys_screen1              :
Ending name  :burrys_screen4              :

                                          : 2 :

```

When you execute the action, MANTIS returns the Delete from Bin: Screens entity list shown below. This list displays the range of entities you specified on the previous screen and places a D (Delete) in the Del column as shown in the following screen illustration:

TRA009	Delete From Bin: Screens			YYYY/MM/DD
Bin: BURRYSBIN				HH:MM:SS
Del	-----Name-----	---Created By---	--Date--	--Status--
D	BURRYS_SCREEN2	USERNAME	YYYY/MM/DD	
D	BURRYS_SCREEN3	USERNAME	YYYY/MM/DD	
D	BURRYS_SCREEN4	USERNAME	YYYY/MM/DD	

When you press ENTER, MANTIS deletes the screens from the bin and displays a confirmation message in the Status field, shown in the following screen illustration:

```
TRA009          Delete From Bin: Screens          YYYY/MM/DD
Bin: BURRYSBIN          HH:MM:SS

Del  -----Name-----   ---Created By---   --Date--   --Status--
BURRYS_SCREEN2          USERNAME          YYYY/MM/DD   DELETED
BURRYS_SCREEN3          USERNAME          YYYY/MM/DD   DELETED
BURRYS_SCREEN4          USERNAME          YYYY/MM/DD   DELETED
```

If you do not want to delete one of the specified entities, tab to the Del field and erase the D.

- ◆ To specify a generic pattern of entities to be deleted, leave the Ending Name field blank and in the Starting Name field, use the asterisk (\*) and question mark (?) wildcard characters, as follows:
  - \* Represents an indefinite number of characters. For example, \*2\* will yield an entity list of all entities whose names contain a 2.
  - ? Represents a single character. SCREEN???? will yield an entity list of all entities whose names begin with SCREEN and end with any four characters.

To obtain a list of entities that you plan to delete most of, type the asterisk (\*) wildcard character in the Starting Name field (leave the Ending Name field blank). To execute, type the entity number in the selection field and press ENTER, or press the corresponding PF key. MANTIS places a D in front of every entity on the list. Erase the D if it appears before an entity you do not want to delete.

If you want to display a list of available entities, but intend to delete only a few of them, leave the Starting Name field blank. To execute, type the entity number in the selection field and press ENTER, or press the corresponding PF key. MANTIS displays a complete list of entities, but the Del column will be blank. Type a D in the Del column before each entity you want to delete.

After you have selected the entities you want to delete in one of the above methods, press ENTER. Individual confirmation messages will appear in the Status field when all the marked entities are deleted. Press the CANCEL key to return to the Delete from Bin screen (screen illustration in “[Deleting entities from a bin](#)” on page 300). Press the CANCEL key again to exit to the Transfer Facility menu (see “[Transfer Facility menu](#)” on page 257).

## Deleting user file data

Use the User File Data option to delete data records from a MANTIS file previously copied to the current bin. Select the User File Data option from the Delete from Bin menu (see the screen illustration in “Deleting entities from a bin” on page 300) by typing a 14 in the selection field and pressing ENTER or by pressing PF14. MANTIS returns the Delete User Data In Bin screen shown in the following screen illustration:

TRA010	Delete User Data In Bin	YYYY/MM/DD
Bin: BURRYSBIN		HH:MM:SS
File name in bin :	:	
Starting key :	:	
Ending key :	:	
(Press ENTER to delete; PF12 to turn print ON/OFF; CANCEL to exit)		

The current bin name displays at the top of the screen. To delete user file data, fill in the fields on the screen as described below:

---

### File name in bin

**Description** *Required.* Specifies the name of the MANTIS file from which you are deleting MANTIS file data.

**Format** 1–16 alphanumeric character name

---

### Starting key

**Description** *Required.* Specifies: (1) the key of the single record in the file that you want to delete, or (2) the key from which you want to start deleting a range of records.

### Considerations

- ◆ You can delete single or multiple records by entering a single key value, a range of key values, or a generic key pattern of 1–32 characters (see [“Copying from library to bin”](#) on page 261).
  - ◆ If the file has a compound key (made up of several fields), the Starting Key field will contain the value of the first key field only.
  - ◆ MANTIS deletes all records with the specified value in their first key field.
- 

### Ending key

**Description** *Required* if you are deleting multiple records. Specifies the key of the record in the MANTIS file where you want to end the delete.

**Format** 1–32 alphanumeric character name

**Consideration** Leave this field blank if you are specifying a single record.

After you have supplied the relevant data, press ENTER. MANTIS displays a confirmation message in the lower-left corner of the screen when it deletes the user file data. Press the CANCEL key to exit and return to the Delete from Bin screen (see the screen illustration in [“Deleting entities from a bin”](#) on page 300).



MANTIS returns a list of all entities of that type in the bin. If you select File Profiles, an additional column displays on this screen that gives the number of records contained in each listed file. The following screen illustration shows the Bin Contents: Screens list:

```

TRA012                Bin Contents: Screens                YYYY/MM/DD
Bin: BURRYSBIN                HH:MM:SS

-----Name-----      -----Last Updated By-----      --Date--
BURRYS_SCREEN1          USER                YYYY/MM/DD
BURRYS_SCREEN2          USER                YYYY/MM/DD
BURRYS_SCREEN3          USER                YYYY/MM/DD
BURRYS_SCREEN4          USER                YYYY/MM/DD

TRA046A:Press ENTER for more, PF1 to skip to next type, CANCEL to exit
    
```

Page through the entity list by pressing ENTER or by using the repoint option. To use the repoint option, tab to the bottom-left corner of the screen and type 1–30 characters (representing an entity or the first part of an entity) and press ENTER. The entity list displays beginning with the entity corresponding to, or the first entry following your repoint value.

You can also skip to the next entity type on the List Contents of Bin screen (see [“Using the Directory of Bins”](#) on page 316 ) by pressing PF1. For example, if the screen currently lists prompts, you can display the next entity type, interfaces, by pressing PF1. This allows you to view all entities in a bin without having to return to the List Contents of Bin screen to select the next option.

Press the CANCEL key to return to the List Contents of Bin screen (see the screen illustration at the beginning of this section), and the CANCEL key again to return to the Transfer Facility menu (see [“Transfer Facility menu”](#) on page 257).

---

## Changing bin password

Use the Change Password for Bin option to give a new password to the current bin. Select the bin you want by typing a bin name and password in the spaces provided on the Transfer Facility menu (see “[Transfer Facility menu](#)” on page 257).

Select the Change Password for Bin option by typing a 6 in the selection field and pressing ENTER or by pressing PF6. MANTIS prompts you to enter a new password. Type the new password over the old one in the Password field and press ENTER. Because Password is a hidden field (does not display), press the ERASE EOF key after you type in the new password to remove any characters remaining from the old password.

MANTIS returns a confirmation message. You can go on to any option on the menu or use the CANCEL key to exit to the MANTIS Facility Selection Menu (see “[MANTIS Facility Selection Menu](#)” on page 21).

## Using the Directory of Bins

Use the Directory of Bins option to display a listing of all bins in the transfer file. Select the Directory of Bins option from the Transfer Facility menu (see “[Transfer Facility menu](#)” on page 257) by typing a 7 in the selection field and pressing ENTER or by pressing PF7. MANTIS returns the Directory of Bins listing, like the one shown in the following screen illustration:

-----Bin-----	-----Created By-----	--Date--	-----Password-----
BURRYSBIN	USER	YYYY/MM/DD	user

The Directory of Bins list displays bin names, creator names, and creation dates. If you are the creator of a bin or if you are the Master User, the password for that bin also displays.

Press ENTER to page through the list or use the repoint option as follows. Tab to the bottom left corner of the screen and type 1–16 characters (representing a bin name or the first part of a bin name) and press ENTER. The Directory of Bins list displays beginning with the bin corresponding to, or the first entry following, the repoint value. Note the name and password of the bin you will use if it has been created. Press the CANCEL key to exit to the Transfer Facility menu (see “[Transfer Facility menu](#)” on page 257).

---

## Turning print ON/OFF

Use the Turn Print ON/OFF option to indicate whether you want to print a trail of all updates made during a Transfer Facility session. On the Transfer Facility menu (see “[Transfer Facility menu](#)” on page 257), type an 8 in the selection field and press ENTER, or press PF8 to turn the print trail on or off. On any screen in the Transfer Facility that is not a menu screen, switch print on or off by pressing PF12.

When the print trail is ON, the word *Print* appears in the upper left-hand corner of the current screen. MANTIS routes the printing trail to your designated printer. The default setting for the print trail is off.

---

## Using online help

Use online help from the Transfer Facility menu by typing a 9 in the selection field and pressing ENTER, or by pressing PF9. Press ENTER to page through the help prompts. Press the CANCEL key to exit.

---

## Deleting an entire bin

Use the Delete Entire Bin option to delete a designated bin and all of its contents. Select the bin you want to delete by typing the name and password of the bin in the spaces provided at the Transfer Facility menu (see “[Transfer Facility menu](#)” on page 257). To delete the bin, type a 12 in the selection field and press ENTER, or press PF12. MANTIS then asks you to confirm the delete; press the key MANTIS specifies to do so. MANTIS returns a confirmation message when it completes the deletion.

You can proceed to any other option on the Transfer Facility menu, or press the CANCEL key to exit to the MANTIS Facility Selection Menu (see “[MANTIS Facility Selection Menu](#)” on page 21).



# 7

## Additional facilities

MANTIS provides a number of other facilities that may be available from your tailored MANTIS Facility Selection Menu. In general, the following facilities are available for all MANTIS installations:

- ◆ Run a Program by Name
- ◆ Display a Prompter
- ◆ Sign On as Another User
- ◆ Directory
- ◆ Print

This chapter provides instructions for using these facilities and/or directs you to where you can find additional information.

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

This option	Allows you to	See
Run a program by name	Execute a program by name without switching to programming mode.	"Running a program by name" on page 321
Display a prompter	Display a prompter without running an application.	"Displaying a prompter" on page 323
Sign on as another user	Display the sign-on screen where you can sign on with another user ID.	"Signing on as another user" on page 325
Directory facility	Display and print and existing directory of MANTIS entities.	"Listing MANTIS entities using the Directory Facility" on page 326
Print facility	Print MANTIS entities in an online or batch environment.	"Printing MANTIS entities using the Print Facility" on page 330

The following facility options are available from your MANTIS Facility Selection Menu only if your installation has purchased them. Information on using these facilities is contained in separate manuals as indicated below:

- ◆ **Cross Reference Facility (XREF).** Refer to *MANTIS XREF, OS/390, VSE/ESA, OpenVMS*, P39-0011.
- ◆ **PC Migrate Facility.** Refer to *MANTIS Facilities, Windows 95/NT*, P39-2301.
- ◆ **Entity Transformers.** Refer to *MANTIS Entity Transformers*, P39-0013.
- ◆ **DL/I Access View.** Refer to *MANTIS DL/I Programming, OS/390, VSE/ESA*, P39-5008.
- ◆ **Query Report Writer (QRW).** Refer to *SPECTRA User's Guide*, P26-9561.

---

## Running a program by name

The Run a Program by Name option allows you to run a program from your own or another user's library without going into programming mode. Select the Run a Program by Name option from the MANTIS Facility Selection Menu (see "MANTIS Facility Selection Menu" on page 21) by typing the option number in the selection field and pressing ENTER. MANTIS returns the Program Selection screen shown in the following screen illustration:

```
RAP001                                M A N T I S

                                     Program Selection

                                     Specify the name of the required program :

                                     :                                           :

                                     (CANCEL to terminate)
```

Type the program name in the following format:

---

**[user-name:]program-name**

---

---

**user-name**

**Description**    *Optional.* Specifies the name of the user who owns the program.

**Default**        Sign-on name

**Format**         1–16 alphanumeric characters, followed by a colon

**Considerations**

- ◆ Use only if you are loading the program from a library other than the one you signed on with.
- ◆ When running programs in other libraries, you may have to modify statements such as FILE to include the user-name. For example, if you are running under Library B and you want to run a program from Library A, the FILE statements in the program must contain the user-name as a prefix to the file-name. The FILE statement in the program in A's library should read as follows:

```
FILE ( "A:FILE_NAME1" , "PW1" )
```

---

**program-name**

**Description**    *Required.* Specifies the name of the program you want to run.

**Format**         1–32 alphanumeric character program name

**Consideration** If you are running programs from another library, the length of the program name may be limited because of the user-name prefix.

Press ENTER to run the program. If MANTIS cannot find the program, you can enter another program name. When the program is done executing, MANTIS returns you to the MANTIS Facility Selection Menu.

---

## Displaying a prompter

Use the Display a Prompter option to view prompters. You cannot alter the contents of a prompter when you use this option. To make changes to the prompter, use the Prompter Design Facility (see “[Designing prompters](#)” on page 195).

Select the Display a Prompter option from the MANTIS Facility Selection Menu (see “[MANTIS Facility Selection Menu](#)” on page 21) by typing the option number in the selection field and pressing ENTER. MANTIS returns the Prompter Display Facility screen shown in the following screen illustration:

PRD002	MANTIS Prompter Display Facility	YYYY/MM/DD HH:MM:SS
Specify the name of the prompter to be displayed:		
:		
:		
F3=EXIT F12=CANCEL		

Type in the name of the prompter and press ENTER.

MANTIS displays the specified prompter. A heading will be centered at the top of the screen in bright intensity. MANTIS obtains this heading from the description you supplied when you designed and saved the prompter. You can page through a prompter by pressing ENTER. The following screen illustration shows a prompter for state abbreviations:

```
STATE CODE PROMPTER FOR BURRYS
AL - ALABAMA           KY - KENTUCKY           ND - NORTH DAKOTA
AK - ALASKA            LA - LOUISIANA         OH - OHIO
AZ - ARIZONA           ME - MAINE             OK - OKLAHOMA
AR - ARKANSAS          MD - MARYLAND          OR - OREGON
CA - CALIFORNIA        MA - MASSACHUSETTS    PA - PENNSYLVANIA
CO - COLORADO          MI - MICHIGAN          RI - RHODE ISLAND
CT - CONNECTICUT      MN - MINNESOTA         SC - SOUTH CAROLINA
DE - DELAWARE          MS - MISSISSIPPI      SD - SOUTH DAKOTA
DC - DISTRICT OF      MO - MISSOURI          TN - TENNESSEE
  COLUMBIA             MT - MONTANA           TX - TEXAS
GA - GEORGIA           NE - NEBRASKA          UT - UTAH
HI - HAWAII            NV - NEVADA            VT - VERMONT
ID - IDAHO             NH - NEW HAMPSHIRE     VA - VIRGINIA
IL - ILLINOIS          NJ - NEW JERSEY        WA - WASHINGTON
IN - INDIANA           NM - NEW MEXICO         WV - WEST VIRGINIA
IA - IOWA              NY - NEW YORK           WI - WISCONSIN
KS - KANSAS            NC - NORTH CAROLINA    WY - WYOMING
```

When MANTIS displays all prompter information (including any prompters which may be chained to this one), press the CANCEL key to go back to the MANTIS Facility Selection Menu (see “MANTIS Facility Selection Menu” on page 21).



## Listing MANTIS entities using the Directory Facility

Use the Directory Facility to view or print an alphabetic listing of all current programs, screens, files, prompters, interfaces, views, scenarios, and DL/I profiles and layouts in your library. Select the Directory Facility from the MANTIS Facility Selection Menu (see “MANTIS Facility Selection Menu” on page 21) by typing the option number in the selection field and pressing ENTER. MANTIS returns the Directory Facility menu shown in the following screen illustration:

```

DIR001                               M A N T I S                               YYYY/MM/DD
List                                  HH:MM:SS

                                     Directory Facility

Programs ..... 1                    DL/I Call Profiles ..... 13
Screens ..... 2                    DL/I Segment Layouts ..... 14
MANTIS File Profiles .. 3
Prompters ..... 4
Interfaces ..... 5
TOTAL File Views ..... 6
External File Views ... 7          Toggle Print On ..... 24
Logical Views ..... 8
Scenarios ..... 9                Terminate This Facility .. Cancel

                                     :      :

```

You can either view or print a directory list. When you enter the Directory Facility, MANTIS is automatically in List mode. To change to the Print option, press PF24. (PF24 switches back and forth between the two options.) Select the option (1 through 14 in the preceding screen illustration) that corresponds to the directory you want to print or view.

You can position the directory list at a specific point (repoint option). To do so, enter 1–16 alphanumeric characters (representing an entity name or the first part of an entity name) in the bottom-left corner of the Directory Facility screen. You can also use the repoint option at the directory list for specific entities. Press ENTER to reposition the list.

To display a particular range of entities, enter a Starting Name and an Ending Name, separated by a colon (e.g., AUX:PROG), in the bottom-left corner of the screen.

To search for a set of entities whose names correspond to a particular pattern of characters, use the wildcard characters, the asterisk (\*) and the question mark (?), as follows:

- \* Represents an indefinite number of characters. For example, \*2\* displays a list of all entities whose names contain a 2.
- ? Represents a single character. PROG??? designates a program (or programs) whose name begins with PROG and ends with any three characters.

Enter either parameter in the lower-left corner of the directory list menu. When you type a 1 (entity option number for PROGRAMS) in the selection field and press ENTER, or when you press PF1, MANTIS displays a list of programs, starting with the first program whose name begins with AUX and ends with the last program whose name is alphabetically before or equal to PROG. For example, in the following screen illustration, AUX:PROG is typed in the lower-left corner of the screen:

```

DIR001                               M A N T I S                               YYYY/MM/DD
List                                  HH:MM:SS

                                Directory Facility

Programs ..... 1                DL/I Call Profiles ..... 13
Screens ..... 2                DL/I Segment Layouts ..... 14
MANTIS File Profiles .. 3
Prompters ..... 4
Interfaces ..... 5
TOTAL File Views ..... 6
External File Views ... 7      Toggle Print On ..... 24
Logical Views ..... 8
Scenarios ..... 9            Terminate This Facility .. Cancel

                                :      :
    
```

MANTIS programs and screens can have names up to 32 characters in length. The Name field on the directory list displays only the first 16 characters. To view the entire name, enter MANTIS window mode by tabbing to the bottom-right corner of the directory list, typing a w, and pressing ENTER. A message appears at the bottom of the screen outlining the PF key settings for scrolling. To scroll the window to the right, press PF11. MANTIS displays a description of the program and the entire program name. To scroll the window to the left, press PF10. Press PF12 to return the window to its origin. (If you are printing a directory, the extended list for program and screen entities prints automatically.) Press PF9 to exit window mode.

If the directory list is longer than one page, MANTIS scrolls to the next page when you press ENTER. When you have finished viewing the directory list, press the CANCEL key to return to the Directory Facility menu. Press PA1 to exit directly to the MANTIS Facility Selection Menu. If you are printing a directory, MANTIS returns to the Directory Facility menu when the directory is finished printing.

You can also access directory listings through each entity design facility. For example, the Screen Design Facility provides the Directory of Screens option that displays all screen designs in your library. See the appropriate entity design chapter in this manual for information on accessing the directory list through the design facilities.

## Printing MANTIS entities using the Print Facility

Use the MANTIS Print Facility to print MANTIS entities in both online and batch environments. To print online, you select the entities from a menu screen. To print using Batch MANTIS, you enter a series of statements to designate the entities you want to print.

### Printing online

Select the Print Facility option from the MANTIS Facility Selection Menu (see “MANTIS Facility Selection Menu” on page 21) by typing the option number in the selection field and pressing ENTER. MANTIS returns the Print Facility menu shown in the following screen illustration:

```
FUNCTION=PRINT                MANTIS Print Facility                YYYY/MM/DD
XREF= NONE                    HH:MM:SS
SHOWPASS= YES

Programs ..... 1              DL/I Call Profiles ..... 13
Screens ..... 2              DL/I Segment Layouts ..... 14
File Profiles ..... 3
Prompters ..... 4
Interfaces ..... 5
Total File Views ..... 6
External File Views ... 7
Logical Views ..... 8
Scenarios ..... 9          Terminate this facility .. Cancel

User Name : EXAMPLES      :
User Password :           :
Starting Name :           :
Ending Name :           :

: :
```

This screen simulates the statements you would enter in batch mode.

Field descriptions for the Print Facility menu are provided on the following pages.



In batch mode, you can print an entire directory by specifying DIRECTORY as a parameter. To print an entire directory online, use the Directory Facility (see “[Listing MANTIS entities using the Directory Facility](#)” on page 326).

---

## FUNCTION=PRINT

**Description**     *Display.* Indicates that MANTIS is in print mode.

---

## XREF

**Description**     *Optional.* Indicates whether you want cross-references printed as part of your program listing.

**Default**            NONE

**Options**            ALL   All cross-references.

LITERAL[S] or LIT[S]   Lists literal text strings and numbers and where they appear in the program.

PROCEDURE[S] or PROC[S]   Lists all procedure names found in ENTRY statements.

VARIABLE[S] or VAR[S]   Indicates all the explicitly referenced MANTIS variable names and where they appear in the program.

VERB[S]   Lists MANTIS verbs and where they appear in the program.

## Considerations

- ◆ You can enter any combination of the options above (excluding the ALL option).
- ◆ If you want to print more than one cross-reference, use the shortest abbreviation for each cross-reference, separated by commas (e.g., LIT,PROC,VAR).

## SHOWPASS

- Description** *Required.* Indicates whether you want the entity passwords to appear on the output.
- Default** YES
- Options** YES  
NO
- Consideration** If SHOWPASS = blank or null, the result is the same as SHOWPASS = NO. The only time the password will be displayed is when SHOWPASS = YES.
- 

## User Name

- Description** *Required.* Indicates the user ID for the stored entity.
- Format** 1–16 alphanumeric characters
- Default** Current user name
- Consideration** To specify a different user, type the new name over the current name.
- 

## User Password

- Description** *Required.* Indicates the password for the specified user ID.
- Format** 1–16 alphanumeric character password
- Default** Current user password
- Consideration** To specify a different password, type the new password over the existing password. Use the ERASE EOF key to erase any remaining characters.
- 

## Starting Name

- Description** *Required.* Indicates: (1) the name of a single entity, or (2) the name of the entity that a range of entities is to start with.
- Format** 1–32 alphanumeric character entity name
- 

## Ending Name

- Description** *Required* only when specifying a range of entities. Indicates the name of the entity that a range of entities is to end with.
- Format** 1–32 alphanumeric character entity name
-

The list of entities you can print is in the middle of the screen. Select an entity type by pressing the appropriate PF key or by entering the option number in the selection field at the bottom of the screen and pressing ENTER. MANTIS routes the output to a designated printer.

To print a single entity, follow these steps:

1. Enter the name of the entity in the Starting Name field.
2. Leave the Ending Name field blank. If the entity selection is PROGRAM, you may want to update the XREF field to select specific cross references. If you do not want the PASSWORD field to be printed, set the SHOWPASS field to NO.
3. Select the entity type by selecting the appropriate PF key or by entering the option number in the selection field at the bottom of the screen and pressing ENTER.

To print multiple entities, use one of the following three methods:

- ◆ To specify a range of entities, fill in the Starting Name and Ending Name fields. When you press ENTER, MANTIS displays the directory list beginning with the specified Starting name and ending with the specified Ending Name. MANTIS supplies an S (Select) before each entity in the list. The heading of the directory list (Screens in this example) will vary shown in the following screen illustration:

```

                                Select Screens                                YYYY/MM/DD
                                HH:MM:SS
EXAMPLES
Sel -----Name----- ----Password---- Fmt -----Description-----
S   AUX                ALIBABA
S   COST_ANALYSIS     ALIBABA
S   DEMAND             ALIBABA
S   EASTERN_DIST      ALIBABA
S   MODIFIED_SCREEN   ALIBABA
S   NORTHERN_DIST     ALIBABA
    
```

If there are a few entities in the list you do not want to print, erase the S that displays in front of those entities. When you press ENTER, MANTIS displays the message:

```
"entity-name Selected for Print"
```

in the Description field of those entities you have selected. If your range goes on to another page or several pages, press ENTER to page forward. To select the entities on succeeding pages, press ENTER again. MANTIS displays the same message shown above. Once you have selected all the entities you want to print, press ENTER. MANTIS prints those entities you specified. If you want to stop paging, press the CANCEL key. To cancel the entire request, press the CANCEL key again.

- ◆ To specify a generic pattern of names, supply a pattern in the Starting Name field using one of two wildcard characters:
  - \* represents an indefinite number of characters. For example, \*2\* displays the Directory Selection list showing all entities whose names contain a 2.
  - ? represents a single character. PROG??? designates an entity (or entities) whose name begins with PROG and ends with any three characters.

MANTIS automatically supplies an S (Select) before each entity in the list. Erase the S for those entities you do not want to print. When you press ENTER, MANTIS displays confirmation messages for those entities you have selected. When you press ENTER again, MANTIS pages forward and prints any entities on succeeding pages. If you do not want entities printed, you must erase the S in front of each entity. To stop paging, press the CANCEL key. To cancel the entire request, press the CANCEL key before you receive any confirmation messages.

- ◆ To select entities from the Directory Facility menu, select an entity option without specifying a Starting or Ending Name (and thereby implying all entities). MANTIS displays the Directory Selection list, but does not automatically supply the S (Select) markers. Enter an S in the Sel field next to those entities you want to print. When you press ENTER, MANTIS supplies confirmation messages for those entities you have selected. When you press ENTER again, MANTIS pages forward so you can select entities on succeeding pages. To stop paging, press the CANCEL key. To cancel the entire request, press the CANCEL key before you receive any confirmation messages.

To exit the Print Facility, press the CANCEL key.

## Printing with Batch MANTIS

Batch MANTIS acts as the driver for the batch version of the MANTIS Print Facility. Use Print Facility statements to specify the details of your printing session. The following shows the syntax for the batch input stream (one per line), which you enter after your initial batch MANTIS statements.

---

**FUNCTION** = { PRINT  
DIRECTORY }

**USER**= *username*,**PASSWORD**=*user-password*

**SHOWPASS** = { YES  
NO }

**XREF** = { NONE  
ALL  
*xrefs* }

**TYPE** = *entity-type*

**SELECT** = { *name*  
*name1:name2*  
*pattern*  
ALL }

**EJECT**

**SKIP**

1
2
3

**END**

---

The following pages provide a full description of each statement:

---

**FUNCTION =**  $\left\{ \begin{array}{l} \text{PRINT} \\ \text{DIRECTORY} \end{array} \right\}$

**Description**    *Optional.* Specifies the name of the function you want to perform.

**Default**        PRINT

**Options**        PRINT prints the entity definitions (FUNCTION=PRINT). The PRINT option works like the Print Completed Design option in online MANTIS.

DIRECTORY prints a directory list of entities (FUNCTION=DIRECTORY) for a particular user. The DIRECTORY option works like the directory functions in online MANTIS.

---

**USER= username,PASSWORD=user-password**

**Description**    *Optional.* Specifies the user ID and password for the library in which the entity resides (e.g., USER=ACCTG,PASSWORD=BALANCE). The password is not printed on the output listing.

**Default**        Currently signed-on user

---

**SHOWPASS =**  $\left\{ \begin{array}{l} \text{YES} \\ \text{NO} \end{array} \right\}$

**Description**    *Optional.* Specifies whether to display entity passwords on the printed output.

**Default**        YES

**Options**        YES

NO

XREF = { NONE  
ALL  
xrefs }

**Description** *Optional.* Indicates what kind of cross-reference you want to produce for program listings.

**Default** ALL

**Options** ALL All cross-references.

NONE No cross-references.

VARIABLE[S] or VAR[S] Lists all the explicitly referenced MANTIS variable names and where they appear in the program.

PROCEDURE[S] or PROC[S] Lists all procedure names found in ENTRY statements.

LITERAL[S] or LIT[S] Lists literal text strings and numbers and where they appear in the program.

VERB[S] Lists MANTIS verbs and where they appear in the program.

**Consideration** If you want to print more than one cross-reference, use the shortest abbreviation for each, separated by commas (e.g., LIT,PROC,VAR).

**TYPE = *entity-type***

**Description**    *Optional.* Specifies the name of the entity you want to print.

**Default**        ALL

**Options**        ALL   All entities

DLIPROFILE(S)/DLIPROF(S)   DL/I Call Profiles

DLISEGMENT(S)   DL/I Segment Layouts

ERRORS   MANTIS Messages

FILE(S)/SET(S)   MANTIS Files

INTERFACE(S)   Interface Layouts

LUV(S)/VIEW(S)/RDM(S)   Logical Views

PROGRAM(S)   MANTIS Programs

PROMPTER(S)   MANTIS Prompters

SCENARIO(S)   Scenario Designs

SCREEN(S)   MANTIS Screens

TOTAL   TOTAL Views

VSAM/PC/EXTERNAL/ACCESS(ES)   External or PC files

**Consideration** Enter a TYPE= statement for each entity type you want to print.

---

SELECT = {  
*name*  
*name1:name2*  
*pattern*  
ALL

**Description** *Optional.* Specifies the name of the particular entity you want to print. For example, enter SELECT=CITY\_TAX to print a program that calculates city tax.

**Default** ALL

**Options** ALL Prints all entities.

*name* Prints one entity.

*name1:name2* Indicates a range of entities to be printed.

*pattern* Specifies a generic pattern of entities to be printed:

\* Represents an indefinite number of characters. For example, \*2\* prints all entities whose names contain a 2.

? Represents a single character. PROG??? will print all entities whose name begins with PROG and ends with any three characters.

### Considerations

- ◆ There is no limit to the number of SELECT statements you can have, but each must be on a separate line.
- ◆ When FUNCTION=DIRECTORY, the SELECT=name statement produces a Directory List containing the specified entities.

## EJECT

**Description** *Optional.* Causes the print program to skip to the top of a new page when it is listing the source program.

**Consideration** Code the EJECT statement as a comment by prefacing it with a vertical bar.

### Example

```
100 | EJECT
```

---

**SKIP**

1
2
3

**Description** *Optional.* Skips up to three lines when the program is listed.

**Options** You can code the SKIP statement to skip 1, 2, or 3 lines.

### Example

```
200 | SKIP 1  
or 200 | SKIP 2  
or 200 | SKIP 3
```

**Consideration** Code the SKIP statement as a comment by prefacing it with a vertical bar.

---

**END**

**Description**     *Required.* Indicates the end of the input statements for a particular input stream.

**Example**

```
END
```

**General consideration**

You can insert comments in your Batch MANTIS input streams by prefacing the comments with a vertical bar (|). For example:

```
| THIS INPUT STREAM PRINTS REF PROGS.
```

A sample batch session (using Batch MANTIS) appears below. Comments appear to the side. (For more information on Batch MANTIS, see [“Batch processing”](#) on page 345.)

```
//JOBNAME JOB . . .
//STEP01 EXEC      PGM=MANTISB,REGION=220K
//STEPLIB DD      DISP=SHR,DSN=MANTIS.LINKLIB
//SETPRAY DD      DISP=SHR,DSN=MANTIS.CLUSTER
//EREF           DD  DISP=SHR,DSN=MANTIS.EREF.CLUSTER
//EEPR           DD  DISP=SHR,DSN=MANTIS.EEPR.CLUSTER
//ELOG           DD  DISP=SHR,DSN=MANTIS.ELOG.CLUSTER
//EHLP           DD  DISP=SHR,DSN=MANTIS.EHLP.CLUSTER
//EDPR           DD  DISP=SHR,DSN=MANTIS.EDPR.CLUSTER
```

```

//ETRG      DD  DISP=SHR,DSN=MANTIS.ETRG.CLUSTER
//CSOT      DD  DUMMY
//SYSPRINT  DD  SYSOUT=*
//TERMINAL  DD  SYSOUT=*,DCB=BLKSIZE=133
//SYSUDUP DD  SYSOUT=*
//PRINTR DD  SYSOUT=*,DCB=BLKSIZE=133
//KEYBOARD  DD  *

USER;PASSWORD - Batch MANTIS sign-on
<BLANK=ON>;FAULT=ON>;ECHO=OFF;19 - Batch MANTIS commands
to format output and
invoke Print Facility

|SAMPLE INPUT STREAM - Comment
FUNCTION=PRINT - Select PRINT mode (PRINT
or DIRECTORY

USER=USER,PASSWORD=PASSWORD - Enter user ID and password
XREF=NONE - Print no cross-references.
Default is ALL

TYPE=PROGRAMS - Entity type is programs
SELECT=*_36 - Print those programs that
end with both an underscore
and the number 36

END - Input stream for Print
Facility is complete

<CANCEL> - Sign-off

```

## Print Facility output

For all entities except program print layouts and program screen layouts, the output from the Print Facility is similar to the output from the online display functions or the directory functions.

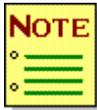
The first page of the printed output includes the following:

- ◆ One of these two items:
  - A summary sheet of the statements you entered in batch mode
  - A dialog stream of your statements that were interpreted from the Print Facility menu
- ◆ A set of diagnostics

For information on Print Facility error messages, refer to *MANTIS Messages and Codes, OS/390, VSE/ESA*, P39-5004.

### General considerations

- ◆ If you select a screen for printing that is wider than your printer's physical width capability, MANTIS will print the entire screen by dividing it into several windows and printing each window on a separate page.
- ◆ When you print a program, MANTIS prints a source listing of it. Up to four cross-reference listings, depending on the cross-references you specified in the XREF statement, can accompany your program listing.



---

If you are printing screens with many rows and columns (that is, screens of 255 rows by 255 columns):

- ◆ Headings may not appear in the printed output.
  - ◆ Screen data may overlay row and column scale lines.
-

## Print Facility return codes

MANTIS Print Facility provides a return code (indicating run status) in the MVS environment. A list of the codes appears on the following table:

Code	Description
0	Successful run.
4	A specific entity (or entities) was not found. Successful run.
8	Warning raised on syntax/input stream. Successful run.
12	Error raised on syntax/input stream. No output was produced.
16	System error.
20	Batch MANTIS was expecting additional information, but none was available. Make sure you have an END statement and at least two CANCELs <PA2> at the end of your input stream.

# 8

## Batch processing

Batch processing allows you to perform operations in volume and without the continual supervision required by online processing. MANTIS provides the following tools for the batch environment:

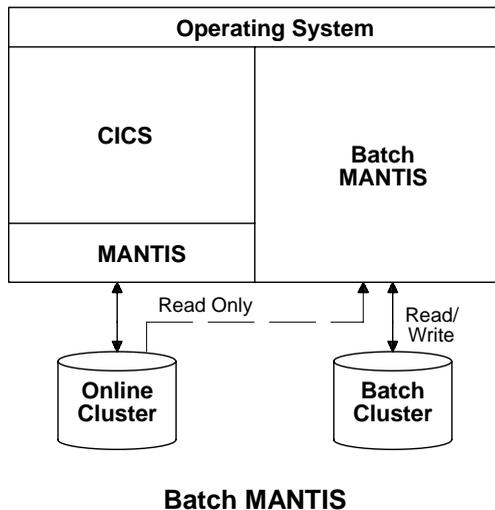
- ◆ **Batch MANTIS.** Performs the facilities of online MANTIS in a batch environment. You can run large volume applications, perform unattended operations and testing, and create end-user documentation or hard copy output. Batch MANTIS also provides for offline access allowing you to print large screen designs and reports that extend beyond the boundaries of your terminal.
- ◆ **Batch Access Subroutine.** The Batch Access subroutine, MANTIS1, allows non-MANTIS batch programs to access online MANTIS files. For Assembler programs calling MANTIS1, use the standard linkage conventions. For PL/1 programs calling MANTIS1, specify OPTION(ASSEMBLER). For a detailed discussion of COBOL linkage, see [“Batch access subroutine”](#) on page 379.
- ◆ **Batch Dialog Facility.** Allows you to perform many of the Program Design Facility options, Transfer Facility options, and installation options in batch mode.

## Batch MANTIS

You can use Batch MANTIS to perform the following MANTIS operations in a batch environment:

- ◆ Run large-volume applications.
- ◆ Perform unattended operations and testing.
- ◆ Create end-user documentation or hard copy output.
- ◆ Print large screen designs and reports that extend beyond the boundaries of your terminal.
- ◆ Off-line access.

Batch MANTIS runs as a single user system that uses a separate cluster or the online (SETPRAY) cluster. If the online system is up, Batch MANTIS opens the cluster for read-only access. The following figure shows a sample Batch MANTIS environment:



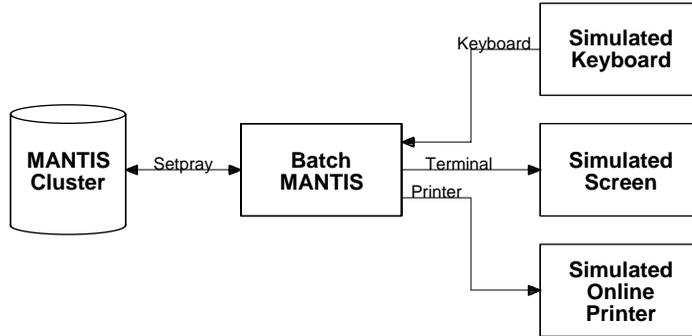
To run Batch MANTIS, you provide a set of statements, including sign-on information, functions you wish to perform, data, and execution JCL to simulate an online environment. Batch MANTIS internally simulates keyboard and terminal functions. The output you receive from a Batch MANTIS session closely resembles an identical online session. A password error terminates Batch MANTIS immediately.

### General considerations

- ◆ To print MANTIS entities in batch, use the Print Facility on the MANTIS Facility Selection menu (see “[MANTIS Facility Selection Menu](#)” on page 21). From the Print Facility you enter a series of statements to designate the entities you want to print. For information on using the Print Facility, see “[Additional facilities](#)” on page 319.
- ◆ The Single-Level Transfer Facility allows you to perform certain transfer functions in one transaction, either online or in batch mode. See your Master User for details.
- ◆ Batch MANTIS allows one active user session per execution. If you want to sign on to another user in a session, select the Sign on as Another User option from the Facility Selection menu.
- ◆ Review all programs to be used in Batch MANTIS for unnecessary COMMITs. The COMMIT statement causes a TCLOSE to be issued for every VSAM file open, including SETPRAY and all External VSAM files. This process can have an adverse affect on the CPU utilization for programs with heavy External File usage.

## Creating the input stream

To run Batch MANTIS, you must provide the system with the appropriate input stream, consisting of the execution JCL and the data. The following figure illustrates how Batch MANTIS runs:



The first part of the input stream is the execution JCL. It references the following files and data sets:

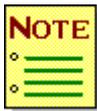
- ◆ **Simulated screen image.** Simulated screen images are sent to a data set or printer.
- ◆ **Simulated Keyboard Entry.** You provide simulated keyboard entry through a data set or job stream; one statement for each entry on the keyboard. You must enter keyboard input for special functions in uppercase letters. (See “[Batch MANTIS special functions](#)” on page 352 for a list of Batch MANTIS special functions.)
- ◆ **MANTIS PRINTER output as sent to a data set or printer.**
- ◆ **MANTIS message output as sent to a data set or printer.**
- ◆ **One or more MANTIS auxiliary support files (optional).**

See “[JCL examples](#)” on page 355 for MVS and DOS/JCL examples.

The second part of the input stream is your data, which you enter after the execution JCL. MANTIS passes input as *is*. Make sure no unwanted data (such as sequence numbers in columns 73–80) is in the input.

Your input stream can include some or all of the following data:

- ◆ **Sign-on information.** Use your valid sign-on name and password. A password error immediately terminates Batch MANTIS.
- ◆ **Special functions.** Batch MANTIS supports certain functions (listed in “[Batch MANTIS special functions](#)” on page 352 ) that may appear at any time in the simulated keyboard entry. You must enter these functions in angle brackets < > and they must immediately follow a delimiter or start in column one.
- ◆ **Field delimiters.** All fields entered in Batch MANTIS must be separated with delimiters. The default delimiter is a semicolon (;). You can change the default delimiter using the <DELIMITER> function (see “[Batch MANTIS special functions](#)” on page 352).



---

If you must use the semicolon (;) with a SHOW or OBTAIN statement in Batch MANTIS, you must change the delimiter character.

---

- ◆ **MANTIS facilities.** These are option numbers from the Facility Selection menu and the appropriate input, such as a program name for Run a Program by Name.

- ◆ **PF, PA, and ENTER keys.** Enter all PF and PA keys with angle brackets (< >) surrounding them. You may use PF1 through PF24, PA1, and PA2. MANTIS assumes ENTER if no PF*n* or PA*n* is present. (The < > must immediately follow a delimiter or must appear in column one.) For example:

```
| SIGN ON; SUPPRESS PASSWORD PRINTING
EXAMPLES;<*>;CASINO
| SCRIPT:LIST CONTENTS OF A BIN
| SELECT TRANSFER
15
|TURN PRINT ON
<PF8>
| BYPASS FILE NAME (DEFAULT - CSOT); SELECT BIN; SELECT LIST
  CONTENTS
;UTILITIES;TEST;<PF5>
| SELECT PROGRAMS TO LIST
<PF1>
| EXIT LIST;EXIT TRANSFER;EXIT MANTIS
<PA2>
<PA2>
<PA2>
```

You can also enter data using the apostrophe (') in column 1 to indicate that the statement is a continuation of the previous statement. For example:

```
| SIGN ON; SUPPRESS PASSWORD PRINTING
EXAMPLES;<*>;CASINO
| SCRIPT:LIST CONTENTS OF A BIN
| SELECT TRANSFER
15
| TURN PRINT ON
<PF8>
| BYPASS FILE NAME (DEFAULT - CSOT); SELECT BIN; SELECT LIST
  CONTENTS
;UTILITIES
'TEST
'5
| SELECT PROGRAMS TO LIST
<PF1>
| EXIT LIST;EXIT TRANSFER;EXIT MANTIS
<PA2>
<PA2>
<PA2>
```

## General considerations

- ◆ Batch MANTIS supports the CALL Interface Facility and PERFORM verbs with the Interface Facility using normal IBM linkage conventions. For information on the CALL and PERFORM verbs, refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002. (For information on using the CALL Interface Facility, see “[Designing interfaces](#)” on page 213.)
- ◆ You can use the KILL verb as you do in online MANTIS. Enclose KILL within angle brackets (< >). <KILL> functions the same as on a formatted screen.
- ◆ When you create your input stream, remember that you are simulating online mode. There should be one statement for each ENTER on the keyboard.
- ◆ You might want to save your execution JCL and sign-on information as a separate application. Or, you may save your sign-on information, facility selection, and special batch functions (<ECHO>, and so on) in a sign-on data set prior to executing Batch MANTIS. You can then call this data set from the KEYBOARD DD statement in MVS or the KEYB DLBL statement in DOS.
- ◆ You may want to display a variable number of output pages to the PRINTER file by including an OUTPUT PRINTER statement in your application. This eliminates the need for a variable number of simulated terminal inputs (e.g., <ENTER>). You can also use the OUTPUT PRINTER statement to separate the input dialog from the program’s output.
- ◆ Design your Batch MANTIS applications keeping the batch dialog in mind. Batch dialog interactions can be different from an online (interactive) dialog.
- ◆ You can check to see if your program is running in batch by including the TERMINAL=“DUMMY” statement in your program. If TERMINAL=“DUMMY” is true, your program is running in batch.

## Batch MANTIS special functions

Batch MANTIS supports certain functions, listed and described in the following table, you can include in the simulated keyboard entry. When you create the input stream, follow these rules:

- ◆ If you list multiple functions you must either separate them with a delimiter or start them in column one.
- ◆ Code angle brackets around each function.

Function	Description
<BLANK=ON/OFF>	BLANK=ON tells MANTIS to print the blank lines that appear with a CONVERSE or SHOW statement. MANTIS prints blank lines starting with the statement immediately following the BLANK=ON statement. For example, if you specify BLANK=ON on the first statement (with the sign-on information), MANTIS prints the blank lines in the logo screen. If you specify BLANK=OFF (default value), MANTIS deletes blank lines in the printed image.
<CURSOR=ON/OFF>	CURSOR=ON tells Batch MANTIS to start filling unprotected fields at the cursor position. CURSOR=OFF (default value) tells Batch MANTIS to map input to the screen starting with the first unprotected field regardless of cursor position.
<DELIMITER=x>	Changes the default delimiter value (;) to the character specified as x.  If you use the OBTAIN or SHOW statement with multiple variables, you must change the default delimiter (semicolon) because OBTAIN and SHOW use a semicolon as a delimiter between variables. If you do not change the Batch MANTIS delimiter, Batch MANTIS reads the semicolon after the first variable and immediately goes to the next function without processing any more OBTAIN or SHOW variables.
<ECHO=ON/OFF>	ECHO=ON prints <i>before</i> and <i>after</i> screen images of simulated keyboard entry. ECHO=OFF (default value) prints only the <i>before</i> screen image.

Function	Description
<FAULT= <u>ON</u> /OFF>	FAULT=ON (default value) terminates Batch MANTIS when there is an error message. FAULT=OFF continues batch processing when there is an error message. Typically, you need FAULT=OFF only when you enter data interactively (via TSO TEST, and so on).
<LASER=Y/ <u>N</u> >	You must specify LASER=Y when you send KANJI (DBCS) output to a laser printer. You can omit this statement when no DBCS characters are sent to a laser printer.
<PAGESIZE= <i>row</i> multiplied by <i>col</i> >	PAGESIZE indicates the simulated screen size for Batch MANTIS. <i>row</i> is the number of rows; <i>col</i> is the number of columns.
(vertical bar)	In column 1, the vertical bar indicates that the statement is a comment.
' (apostrophe)	In column 1, the apostrophe indicates the statement is a continuation of the previous statement. The apostrophe terminates the previous field.
<*> (asterisk)	An asterisk between user name and password in the input statement prevents the password from printing. For example, the input statement, USER_NAME;<*>;PASS_WORD would print as USER_NAME;<*>,*****.

## Batch MANTIS PARMs

The following table below lists and describes the parameter input you can provide to Batch MANTIS via the PARM JCL statement under MVS or the PARM file under DOS:

MVS	DOS PARM file (1 record only)	Description
PARM='DBMOD (dbmod-name)'	DBMOD(dbmod- name)	Where dbmod-name is the 1- to 8-character name of the TOTAL DBMOD. Indicates this execution accesses TOTAL.
PARM='RDM'	RDM	Indicates this execution accesses SUPRA V1.
PARM='TISLUV'	TISLUV	Indicates this execution accesses SUPRA V1.
PARM='NORMAL'	NORMAL	Indicates this execution accesses SUPRA V1 and uses NORMAL.
PARM='ACCESS'	ACCESS	Indicates this execution accesses SUPRA V1 and uses the Software Selection Facility.
PARM='DLI,MANTIS B,psb-name'	Not applicable	Where psb-name is the 1- to 8-character name of the DL/I PSB. Indicates the DL/I region controller executes Batch MANTIS.

To access both TOTAL and SUPRA V1 in the same run of Batch MANTIS, specify DBMOD as parameter input to Batch MANTIS and specify TISLVL in the MANTIS customization macro.

To access both DL/I and SUPRA V1 in the same run of Batch MANTIS, specify parameter input as required for DL/I processing and specify TISLVL in the MANTIS customization macro.

For more information on:

- ◆ **TISLVL.** Refer to *MANTIS Administration, OS/390, VSE/ESA*, P39-5005.
- ◆ **NORMAL.** Refer to *NORMAL Design User's Guide*, P26-9261.
- ◆ **The Software Selection Facility (SSF).** Refer to *SUPRA PDM Administrator's Guide*, P26-2212.

## JCL examples

Use the following sections for sample MVS/JCL and DOS/JCL for running a Batch MANTIS job.

### Sample MVS/JCL to run Batch MANTIS

The following provides sample MVS/JCL to run a Batch MANTIS job:

```
// JOB...
//JOBLIB DD...
//MANT EXEC PGM=MANTISB,PARM=database-info
//TERMINAL DD SYSOUT=A,DCB=BLKSIZE=133 - Simulated screen

//PRINTER DD SYSOUT=A,DCB=BLKSIZE=133 - Simulated printer
//SYSPRINT DD SYSOUT=A,DCB=BLKSIZE=133 - Keyboard statements/errors
//SETPRAY DD DSN=my.mantis.cluster,DISP=SHR
//CSOT DD DSN=my.transfer.cluster,DISP=SHR - Optional
/* define data sets here
//KEYBOARD DD * this is for input to terminal - Simulated keyboard

examples;casino - Sign-on information

.
.
. - Enter special
functions and data
(TOTAL/VSAM/RDM)
/*
/* keyboard can be assigned to a sequential data set
```

For a list and description of Batch MANTIS PARMS for MVS, see “[Batch MANTIS PARMS](#)” on page 354.

## MVS/JCL to access external files

The following provides sample MVS/JCL to access the six external files used to support the MANTIS facilities and the Component Engineering Facility:

```
//JOBNAME JOB . . .
//STEP01 EXEC PGM=MANTISB,REGION=4096K
//STEPLIB DD DISP=SHR,DSN=MANTIS.LINKLIB
//SETPRAY DD DISP=SHR,DSN=MANTIS.CLUSTER
//EREF DD DISP=SHR,DSN=MANTIS.EREF.CLUSTER
//EEPR DD DISP=SHR,DSN=MANTIS.EEPR.CLUSTER
//ELOG DD DISP=SHR,DSN=MANTIS.ELOG.CLUSTER
//EHLP DD DISP=SHR,DSN=MANTIS.EHLP.CLUSTER
//EDPR DD DISP=SHR,DSN=MANTIS.EDPR.CLUSTER
//ETRG DD DISP=SHR,DSN=MANTIS.ETRG.CLUSTER
//CSOT DD DUMMY
//SYSPRINT DD SYSOUT=*
//TERMINAL DD SYSOUT=*,DCB=BLKSIZE=133
//SYSUDUMP DD SYSOUT=*
//PRINTER DD SYSOUT=*,DCB=BLKSIZE=133
//KEYBOARD DD *
<PAGESIZE=24X80>;<BLANK=OFF>;ACCT;password
<1>
VPF:ADOX_ETRG_EXECUTE
<PA2>
<PA2>
<PA2>
```

## Customizing MVS/JCL to access external files

To customize the MVS/JCL to access external files in your environment, make the following 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.

## Sample DOS/JCL to run Batch MANTIS

The following provides sample DOS/JCL to run a Batch MANTIS job:

```
// JOB...
// DLBL SETPRAY,'mantis.cluster',,VSAM
// DLBL CSOT,'transfer.cluster',,VSAM      - Optional

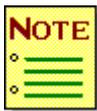
// ASSGN SYS008,SYSIPT*                   - Keyboard

// ASSGN SYS009,SYSLST*                   - Simulated screen
// ASSGN SYS010,DISK,VOL=volume,SHR
// DLBL PARM,'parameter.input'**
// EXTENT SYS010,volume,1,0,xxxx,xxxx
// ASSGN SYS011,DISK,VOL=volume,SHR

// DLBL PRINT,'printer.output'           - Simulated printer
// EXTENT SYS011,volume,1,0,xxxx,xxxx

// ASSGN SYS012,SYSLST*                   - Error messages
* define other data sets here
// EXEC MANTISB,SIZE=AUTO

.
.   keyboard input
.
/*
```

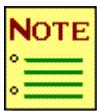



---

\* Can be assigned to disk or IGN; for disk, you should use the following file name on the DLBL statement:

```
SYS008 = KEYB
SYS009 = TERM,
SYS012 = ERRORS
```

---




---

\*\* For a list and description of Batch MANTIS PARMS for DOS, see “[Batch MANTIS PARMS](#)” on page 354.

---

The following table lists the file characteristics specific to DOS operating systems:

DLBL NAME	DTFxx	SYSxxx	BLKSIZE
KEYB	DTFSD, DTFCD	SYS008	--
PARM	DTFSD	SYS010	80
TERM	DTFPR, DTFSD	SYS009	133
PRINT	DTFPR, DTFSD	SYS011	133
ERRORS	DTFPR, DTFSD	SYS012	133

### DOS/JCL to create PARM file

DOS requires the PARM file to run Batch MANTIS. If you are not using TOTAL, ensure that the PARM file contains no records, and omit the DBMOD parameter:

```
// ASSGN SYS010,DISK, VOL=volume, SHR
// DLBL SDSKOUT, "parameter.input"
// EXTENT SYS010, volume, 1, 0, xxxx, xxxx
// UPSI 1
// EXEC DITTO
$$DITTO SET EOD+$$DITTO
$$DITTO CSQ OUTPUT=SYS010
DBMOD(nnnnnnnn)
$$DITTO EOJ
```

## DOS/JCL to access external files

The following is DOS/JCL to access the six external files used to support MANTIS facilities and the Component Engineering Facility (CEF):

```

* $$ JOB JNM . . .
* $$ LST CLASS=A,JSEP=0,DISP=D,DES=(,xxxx)
// JOB MANTISB
// DLBL SETPRAY,'MANTIS.SETPRAY.CLUSTER',,VSAM
// DLBL EDPR,'MANTIS.EDPR.CLUSTER',,VSAM
// DLBL EEPR,'MANTIS.EEPR.CLUSTER',,VSAM
// DLBL EHLP,'MANTIS.EHLP.CLUSTER',,VSAM
// DLBL ELOG,'MANTIS.ELOG.CLUSTER',,VSAM
// DLBL EREF,'MANTIS.EREF.CLUSTER',,VSAM
// DLBL ETRG,'MANTIS.ETRG.CLUSTER',,VSAM
// ASSGN SYS011,SYSLST
// ASSGN SYS012,SYSLST
// ASSGN SYS010,DISK,VOL=vvvvvv,SHR
// DLBL PARM,'your parm dummy',0,SD
// EXTENT SYS010,vvvvvv,1,0,nnn,1
// LIBDEF PHASE,SEARCH=your CICS library
// EXEC MANTISB,SIZE=AUTO
<PAGESIZE=24X80>;EXAMPLES;CASINO
<PF1>
VPF:ADOX_ETRG_EXECUTE
<PA2>
<PA2>
/*
/&
* $$ EOJ

```

## Customizing DOS/JCL to access external files

To customize the DOS/JCL to access external files in your environment, make the following 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.

## Sample CMS EXEC to run Batch MANTIS

The following is a sample CMS EXEC to run Batch MANTIS jobs:

```
&TRACE OFF
&PARM = &CONCAT OF ' &ARGSTRING
&PARM = &CONCAT OF &PARM '
FILE * CLEAR
EXEC CSOPVED125
EXEC CSOPVED2
FILEDEF KEYBOARD DISK &0 INPUT
FILEDEF TERMINAL DISK &0 LIST1 A
FILEDEF SYSPRINT DISK &0 LIST2 A
FILEDEF PRINTER PRINT
GLOBAL LOADLIB MANTIS
OSRUN MANTISB PARM=&PARM
CP CLOSE PRINT
```

## Batch reporting

You can use Batch MANTIS to produce printed reports. This section provides MVS and DOS considerations for selecting the output destination(s) for your reports. You can send output to a disk or to a printer.

## MVS considerations

You can use the “PRINTER=” statement to dynamically select the output destination(s) for printed reports. The printer name specified on the “PRINTER=” statement corresponds to a DDNAME on a DD statement in the JCL. You can switch print destinations as long as your JCL contains DD statements for each required print destination. The following example shows that one copy of the program will be printed by the printer whose SYSOUT class is A, and one copy will be sent to the disk file whose DDNAME is DISKPRT:

```
//EXEC PGM=MANTISB
//TERMINAL DD SYSOUT=A,DCB=BLKSIZE=133
//PRINTER DD SYSOUT=A,DCB=BLKSIZE=133
//SYSPRINT DD SYSOUT=A,DCB=BLKSIZE=133
//USERPRT DD SYSOUT=A,DCB=BLKSIZE=133
//DISKPRT DD DSN=DISK.PRINT.FILE,DISP=SHR
//SETPRAY DD DSN=MANTIS.CLUSTER,DISP=SHR
//CSOT DD DSN=TRANSFER.CLUSTER,DISP=SHR
//KEYBOARD DD *
```

user-name;password	- Sign-on to MANTIS
3	- Select Design a Program option
2 BATCH_CUST_EXTRACT	- Load program
PRINTER="USERPRT"	- Direct output to "USERPRT" on SYSOUT A
PRINT	- List program to "USERPRT"
PRINTER="DISKPRT"	- Direct output to "DISKPRT" on disk
OUTPUT PRINTER	- Send output
PRINT	- List program to "DISKPRT"
LOGOFF	- Exit from MANTIS
/*	



If your Master User has changed your Facility Selection menu so that the Program Design Facility is no longer option 3, substitute the correct option number in the example above.

## Laser Printer Support (DBCS only)

If you link the laser printer module, then you must use the DCB operand in your Batch MANTIS JCL. This is true even if <LASER=N>:

```
//SYSPRINT DD SYSOUT=c,DCB=(RECFM=VBA,LRECL=512,BLKSIZE=bbb) laser
//TERMINAL DD SYSOUT=c,DCB=(RECFM=VBA,LRECL=512,BLKSIZE=bbb) laser
//PRINTER DD SYSOUT=c,DCB=(RECFM=VBA,LRECL=512,BLKSIZE=bbb) laser
```

## DOS considerations

The simulated printer file (PRINT) and simulated screen/errors file (ERRORS) may be physical printers or disk data sets, depending on your requirements. If at least one of these data sets is to be a printer, code an ASSGN card for the appropriate file and assign the SYS number (SYS011 for PRINT, SYS012 for ERRORS) to SYSLST. For example:

```
// ASSGN SYS011,SYSLST
```

assigns the simulated print data (PRINT) to a printer.

When you make an assignment to SYSLST, you do not need a corresponding // DLBL statement. However, if you require either or both of these files to be directed to disk, you must code an ASSGN statement for the corresponding SYS number, SYS011 or SYS012, to a disk volume. You must also include an appropriate DLBL statement describing the disk data set for that file. The following example assigns simulated screen output and errors to a disk file:

```
// ASSGN SYS012,DISK,VOL=volume,SHR
// DLBL ERRORS,'simulated screen',0
// EXTENT SYS012,volume,1,0,xxxx,yyy
```

The following example assigns simulated print to a printer and simulated screen and errors to disk:

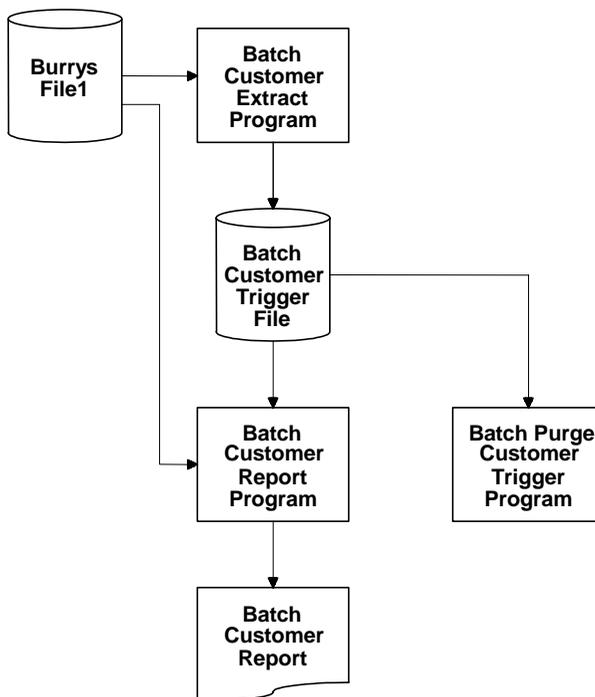
```
// JOB MANTIS, etc.
// ASSGN SYS010,DISK,VOL=volume,SHR
// DLBL PARM,'input.parm.file',0
// EXTENT SYS010,volume,1,0,xxxx,yyy
// ASSGN SYS011,SYSLST
// ASSGN SYS012,DISK,VOL=volume,SHR
// DLBL ERRORS,'simulated.screen',0
// EXTENT SYS012,volume,1,0,xxxx,yyy
// DLBL SETPRAY,'my.mantis.cluster',,VSAM
// EXEC MANTISB,SIZE=AUTO
```

You can use any of the MANTIS files listed in “[Batch MANTIS PARMs](#)” on page 354 in the manner described for the simulated printer file (PRINT) and simulated screen/errors file (ERRORS). You can assign the simulated keyboard file (DEYB) to SYSIPT or a disk data set. The PARM file must be a disk data set.

## Sample Batch MANTIS session

This section presents a sample Batch MANTIS session in a tutorial format. The session introduces you to Batch MANTIS execution JCL and the type of data you must provide.

Using a file, BURRYS\_FILE1, sequenced by CUSTOMER\_NUMBER, we will create an extract program for CUSTOMER\_NAME. A work file sorts the customer information according to the customers' last names. The final output is a report sequenced by customers' last names. The following figure depicts the process used in this sample batch session:



You can check for `TERMINAL="DUMMY"` in your program to verify that your program is running in batch mode. If `TRUE`, set the `OUTPUT PRINTER` to redirect terminal output to the printer.

Using the MANTIS Print Facility, we will print the input parameters, output (programs), files and the screen for this example. For more information on the MANTIS Print Facility, see [“Additional facilities”](#) on page 319.

We use the following input parameters in the MANTIS Print Facility for the Burry's example:

```
// installation standard jobcard
/*
<PAGESIZE=24X80>;TEST;TEST;
<BLANK=OFF>;<FAULT=ON>;<ECHO=OFF>;19
FUNCTION=PRINT
SHOWPASS=YES
XREF=NONE
TYPE=PROGRAMS
SELECT=BATCH_CUST_EXTRACT
SELECT=BATCH_CUST_REPORT
TYPE=FILES
SELECT=BURRYS_FILE1
SELECT=BATCH_CUST_WORK
TYPE=SCREENS
SELECT=BATCH_SCREEN1
END
<PA2>
<PA2>
<PA2>
/*
//
```

The following *diagnostics* print in the sample MANTIS Print Facility batch session shown in the following screen illustration:

```

YYYY/MM/DD - HH:MM:SS      M A N T I S  P R I N T  F A C I L I T Y      PAGE - 1
USER - TEST

STATEMENTS :                INPUT STATEMENTS
FUNCTION=PRINT              :
SHOWPASS=YES               :
XREF=NONE                   :
USER=TEST,PASSWORD=***** I  MPFXGDI:Generated by default
TYPE=PROGRAMS              :
SELECT=BATCH_CUST_EXTRACT  I  FAC042I:1 Program(s) found
SELECT=BATCH_CUST_REPORT  I  FAC042I:1 Program(s) found
TYPE=FILES                  :
SELECT=BURRYS_FILE1        I  FAC042I:1 MANTIS File(s) found
SELECT=BATCH_CUST_WORK     I  FAC042I:1 MANTIS File(s) found
TYPE=SCREENS                :
SELECT=BATCH_SCREEN1       I  FAC042I:1 Screen(s) found
Diagnostics : MPFXKSI:Kanji printer support is inactive
              : MPFXSRI:1 statement(s) read
              : MPFXSGW:1 statement(s) generated by default
              : MPFXERE:No erroneous statement(s) found
              : MPFXWIW:No warning(s) issued

```

The following *programs* print in the sample MANTIS Print Facility batch session shown in the following screen illustration:

```

YYYY/MM/DD - HH:MM:SS      M A N T I S  P R I N T  F A C I L I T Y      PAGE - 2
USER - TEST

                                     MANTIS PROGRAM
NAME :  BATCH_CUST_EXTRACT          DESCRIPTION :          PASSWORD :  TEST
                                     PROGR BOUND :  No

10  ENTRY BATCH_CUST_EXTRACT
20  .FILE CUST("TEST:BURRYS_FILE1", "TEST")
30  .FILE WORK("TEST:BATCH_CUST_WORK", "TEST")
40  .GET CUST FIRST
50  .WHILE CUST<>"END"
60  ..INSERT WORK
70  ..GET CUST
80  .END
90  EXIT

```

```

YYYY/MM/DD - HH:MM:SS      M A N T I S  P R I N T  F A C I L I T Y      PAGE - 3
USER - TEST

                                     MANTIS PROGRAM
NAME :  BATCH_CUST_REPORT          DESCRIPTION :          PASSWORD :  TEST
                                     PROGR BOUND :  No

10  ENTRY BATCH_CUST_REPORT
20  .IF TERMINAL="DUMMY"
30  ..OUTPUT PRINTER
40  .END
50  .PROGRAM LOAD_WORK("TEST:BATCH_CUST_EXTRACT", "TEST")
60  .DO LOAD_WORK
70  .SMALL X
80  .SCREEN REPORT("TEST:BATCH_SCREEN1")
90  .MAXLINES=SIZE(CUST_NUMBER,1):| <== determines how many repeats
100 .FILE CUSTREC("TEST:BURRYS_FILE1", "TEST", MAXLINES)
110 .FILE CUSTWORK("TEST:BATCH_CUST_WORK", "TEST", PREFIX)
120 .GET CUSTWORK FIRST
130 .WHILE CUSTWORK<>"END"
140 ..X=1
150 ..WHILE X<MAXLINES AND CUSTWORK<>"END"
160 ...GET CUSTREC(CUSTWORK_CUST_NUMBER)LEVEL=X
170 ...IF CUSTREC="FOUND"
180 ...X=X+1
190 ...END
200 ...GET CUSTWORK NEXT
210 ..END
220 ..CONVERSE REPORT
230 ..CLEAR REPORT
240 .END
250 .DELETE CUSTWORK ALL:| <== purge work file
260 EXIT

```

```

YYYY/MM/DD - HH:MM:SS      M A N T I S   P R I N T   F A C I L I T Y      PAGE - 4
USER - TEST

                                MANTIS FILE VIEW
NAME :  BURRYS_FILE1  DESCRIPTION :  BURRYS CUSTOMER INFORMATION FILE  STATUS ACTIVE

PASSWORDS :  VIEW :  TEST                                LAST RESTORE DATE : YYYY/MM/DD
              ALTER : TEST                                LAST RESTORE TIME :  HH:MM:SS
              DELETE/INSERT : TEST                        ASSOC REC LAYOUT :

              UNT  -----NAME-----  DATA-TYPE  DIMENSIONS  ---ATTRIBUTES---
                1  CUST_NUMBER           TEXT        6             KEY
                2  CUST_NAME             TEXT       20
                3  CUST_ADDRESS          TEXT       20
                4  CUST_CITY             TEXT       13
                5  CUST_STATE            TEXT        2
                6  CUST_ZIP_CODE         TEXT        5
                7  CUST_CLASS            TEXT        2
                8  CUST_CREDIT_RATE      TEXT        2
                9  CUST_CREDIT_LIM      SMALL
               10  CUST_COMMENTS        TEXT       25
               11  BRCH_NUMBER_CUST    TEXT        4

```

The following files print in the sample batch session shown in the following screen illustration:

```

YYYY/MM/DD - HH:MM:SS          M A N T I S  P R I N T  F A C I L I T Y          PAGE - 5
USER - TEST

                                     MANTIS FILE VIEW
NAME : BATCH_CUST_WORK  DESCRIPTION : BURRYS CUSTOMER SORT WORK FILE STATUS : ACTIVE
PASSWORDS :   VIEW : TEST                                     LAST RESTORE DATE :   YYYY/MM/DD
              ALTER : TEST                                    LAST RESTORE TIME :   HH:MM:SS
              DELETE/INSERT : TEST                          ASSOC REC LAYOUT :
              COUNT -----NAME----- DATA-TYPE DIMENSIONS ---ATTRIBUTES---
                1  CUST_NAME          TEXT                20      KEY
                2  CUST_NUMBER        TEXT                 6      KEY
    
```

```

YYYY/MM/DD - HH:MM:SS          M A N T I S  P R I N T  F A C I L I T Y          PAGE - 6
USER - TEST

                                     MANTIS Screen
Name: BATCH_SCREEN1  Description BURRYS BATCH REPORT SCREEN          Password:
Frmt: NEW  Mask: #   Blank Fill: |   Full Display: NO  Prot Bot Line: NO  Alarm:
              Data      Fld-Pos  Fld  Ver-Rep  Hor-Rep  Pro Aut Ins Mod Pen
-----Field Name----- --- Type--- Row  Col  Len  Occ Dis  Occ Dis  Tct Skp  Int Clr Cas U
"B U R R Y'S"          HEADING  1  33  11                YES                NOR NO
"CUSTOMER REPORT"     HEADING  2  31  15                YES                NOR NO
"CUSTOMER"            HEADING  4   2   8                YES                NOR NO
"CUSTOMER"            HEADING  4  17   8                YES                NOR NO
"BRANCH"              HEADING  4  32   6                YES                NOR NO
"CREDIT"              HEADING  4  39   6                YES                NOR NO
"CREDIT"              HEADING  4  47   6                YES                NOR NO
"NUMBER"              HEADING  5   3   6                YES                NOR NO
"NAME"                HEADING  5  19   4                YES                NOR NO
"NUMBER"              HEADING  5  32   6                YES                NOR NO
"RATING"              HEADING  5  39   6                YES                NOR NO
"LIMIT"               HEADING  5  47   5                YES                NOR NO
"-----COMMENTS-----" HEADING  5  56  25                YES                NOR NO
CUST_NUMBER           TEXT     7   3   6  255   1                YES                NOR NO YES
CUST_NAME             TEXT     7  11  20  255   1                YES                NOR NO YES
BRCH_NUMBER_CUST      TEXT     7  33   4  255   1                YES                NOR NO YES
CUST_CREDIT_RATE      TEXT     7  41   2  255   1                YES                NOR NO YES
CUST_CREDIT_LIM       NUMERIC  7  47   7  255   1                YES                NOR NO
CUST_COMMENTS         TEXT     7  56  25  255   1                YES                NOR NO YES
    
```



**MVS JCL:**

---

// EXEC PGM=MANTISB,REGION=640K	<i>..... Specifies Batch MANTIS*</i>
// STEPLIB DD DSN=mantis.library,DISP=SHR	<i>..... Specifies load library</i>
// TERMINAL DD SYSOUT=A,DCB=BLKSIZE=133	<i>..... Simulated screen</i>
// SYSPRINT DD SYSOUT=A,DCB=BLKSIZE=133	<i>..... Activates printer</i>
// SETPRAY DD DSN=mantis.cluster,DISP=SHR	<i>..... Activates MANTIS cluster</i>
// CSOT DD DSN=my.transfer.cluster,DISP=SHR	<i>..... Activates Transfer cluster</i>
// KEYBOARD DD *	<i>..... Simulated keyboard</i>
<ECHO=ON>;user-name;password	<i>..... Sign-on to MANTIS</i>
<BLANK=ON>;1	<i>..... Prints blank lines</i>
BATCH_CUST_EXTRACT	<i>..... Indicates program name</i>
1	<i>..... Run a program by name</i>
BATCH_CUST_REPORT	<i>..... Indicates program name</i>
1	<i>..... Run a program by name</i>
PURGE_WORK	<i>..... Purges work file</i>
<PA2>	<i>..... Exit from Batch MANTIS</i>
<PA2>	<i>..... Exit from MANTIS</i>
/*	<i>.....</i>

---

**DOS JCL:**


---

// ASSGN SYS008, SYSIPT	
// ASSGN SYS009, SYSLST	
// ASSGN SYS010, DISK, VOL=volume, SHR	
// DLBL PARM, 'input.parm.file', 0	
// EXTENT SYS010, volume, 1, 0, xxxx, yyy	
// ASSGN SYS011, SYSLST	
// ASSGN SYS012, DISK, VOL=volume, SHR	
// DLBL ERRORS, 'simulated.screen', 0	
// EXTENT SYS012, volume, 1, 0, xxxx, yyy	
// DLBL SETPRAY, 'my.mantis.cluster', , VSAM	-----
// CSOT DD DSN.my.transfer.cluster, DISP=SHR	<i>Activates MANTIS cluster</i>
// EXEC MANTISB, SIZE=AUTO	-----
<ECHO=ON> ; user-name ; password	<i>Activates Transfer cluster</i>
<BLANK=ON> : 1	-----
BATCH_CUST_EXTRACT	<i>Specifies Batch MANTIS</i>
1	-----
BATCH_CUST_REPORT	<i>Sign-on to MANTIS</i>
1	-----
PURGE_WORK	<i>Prints blank lines</i>
<PA2>	-----
<PA2>	<i>Indicates program name</i>
/*	-----
	<i>Run a program by name</i>
	-----
	<i>Indicates program name</i>
	-----
	<i>Run a program by name</i>
	-----
	<i>Purges work file</i>
	-----
	<i>Exit from Batch MANTIS</i>
	-----
	<i>Exit from MANTIS</i>
	-----

---

**CMS EXEC:**

---

FILE * CLEAR	<i>Clear FILEDEFS</i>
FILEDEF TERMINAL PRINT	<i>Simulated screen</i>
FILEDEF SYSPRINT PRINT	<i>Activates printer</i>
EXEC CSOPVED1	<i>Activates MANTIS catalog</i>
EXEC CSOPVED2	<i>Activates MANTIS clusters</i>
FILEDEF KEYBOARD TERMINAL	<i>Simulated keyboard</i>
GLOBAL LOADLIB MANTIS	<i>Specifies load library</i>
OSRUN MANTISB PARM= ' '	<i>Specifies Batch MANTIS</i>
<ECHO=ON> ;user-name;password	<i>Sign-on to MANTIS</i>
<BLANK=ON>:1	<i>Prints blank lines</i>
BATCH_CUST_EXTRACT	<i>Indicate program name</i>
1	<i>Run a program by name</i>
BATCH_CUST_REPORT	<i>Indicate program name</i>
1	<i>Run a program by name</i>
PURGE_WORK	<i>Purge work file</i>
<PA2>	<i>Exit from Batch MANTIS</i>
<PA2>	<i>Exit from MANTIS</i>
CP CLOSE PRINT	<i>Closes printer file</i>

---



After MANTIS completes sign-on, the MANTIS Facility Selection menu prints as shown below. Notice that the blank lines are not compressed since the <BLANK> function is specified ON shown in the following screen illustration:

```
FAC002                MANTIS Facility Selection Menu                YYYY/MM/DD
                        TEST                                        HH:MM:SS
Please select one of the menu options below.

_____
Run a Program by Name ..... 1  Sign On as Another User .... 11
Display a Prompter ..... 2  Search Facility ..... 12
Design a Program ..... 3  Query Report Writer ..... 13
Design a Screen ..... 4  Directory Facility ..... 14
Design a MANTIS File View .. 5  Transfer Facility ..... 15
Design a Prompter ..... 6  Cross Reference Facility ... 16
Design an Interface ..... 7  Entity Transformers ..... 17
Design a TOTAL File View ... 8  Universal Export Facility .. 18
Design an External File View 9  Print Facility ..... 19
DL/I Access View ..... 10

F1=HELP  F3=END  F12=CANCEL
```

Next MANTIS prints the Facility Selection menu showing the Run a Program by Name option selected shown in the following screen illustration:

```
FAC002                MANTIS Facility Selection Menu                YYYY/MM/DD
                        TEST                                        HH:MM:SS
Please select one of the menu options below.

_____
Run a Program by Name ..... 1  Sign On as Another User .... 11
Display a Prompter ..... 2  Search Facility ..... 12
Design a Program ..... 3  Query Report Writer ..... 13
Design a Screen ..... 4  Directory Facility ..... 14
Design a MANTIS File View .. 5  Transfer Facility ..... 15
Design a Prompter ..... 6  Cross Reference Facility ... 16
Design an Interface ..... 7  Entity Transformers ..... 17
Design a TOTAL File View ... 8  Universal Export Facility .. 18
Design an External File View 9  Print Facility ..... 19
DL/I Access View ..... 10

F1=HELP  F3=END  F12=CANCEL
```

MANTIS prints the Run a Program by Name screen shown in the following screen illustration:

```
RAP001                                M A N T I S

                                     Program Selection

                                     Specify the name of the required program :

                                     :                                           :

                                     (CANCEL to terminate)
```

MANTIS prints the screen again with the program name we provided (BATCH\_CUST\_EXTRACT) as shown in the following screen illustration:

```
RAP001                                M A N T I S

                                     Program Selection

                                     Specify the name of the required program :

                                     : batch_cust_extract                          :

                                     (CANCEL to terminate)
```

MANTIS prints each program screen. The *before* image is followed immediately by the *after* image with the given variables.

MANTIS also prints the Facility Selection and Run a Program by Name screens for the BATCH\_CUST\_REPORT and PURGE\_WORK programs. Then MANTIS prints the final report shown in the following screen illustration:

B U R R Y ' S					PAGE 1
CUSTOMER REPORT					
DATE: YYYY/MM/DD					
TIME: HH:MM:SS					
CUSTOMER NUMBER	CUSTOMER NAME	BRANCH NUMBER	CREDIT RATING	CREDIT LIMIT	-----COMMENTS-----
000012	ALBRIGHT, JOHN	2	AA	\$ 9999	
000005	BIGELOW, SUSAN	3	AA	\$ 5000	
000007	BOSTON, CAROL	1	DD	\$ 1250	
000032	CARSON PETERSON, J.	3	DD	\$ 1200	PAYS LATE
000013	DAVIS, MELISSA	3	DD	\$ 1000	
000021	DELMONICO, ARTHUR	1	DD	\$ 1500	PAYS LATE
000003	EDWARDS, ADRIAN	2	DA	\$ 950	NEW ADDRESS
000038	ESTEVEZ, EMILIO	2	DD	\$ 8500	NEW ADDRESS
000035	GOTTSCHALK, HEATHER	2	DA	\$ 3000	
000042	HARRIS, EMILY	2	DA	\$ 6500	
000039	HEFLIN, MARGARET	2	AA	\$ 9999	WAS M. CHESTERMAN
000031	HUGHES, JON	3	DA	\$ 500	CREDIT CHECK
000028	JACKLE, JEFF	1	DD	\$ 7000	
000002	JACOBS, NEIL	2	DD	\$ 1200	
000026	JERGENS, ERIK	2	DD	\$ 1900	
000025	JOHANSEN, EDWARD	4	DD	\$ 8500	
000024	JOHNSON, VERONICA	1	DA	\$ 5500	
000033	KILEY, HENRY	4	DD	\$ 4500	
000027	MALINGER, PAT	2	AA	\$ 9999	
000022	MASON, KURT	1	DA	\$ 500	
000006	MAY, BRIAN	1	DA	\$ 1500	
000001	MAYALL, RICK	1	DD	\$ 1000	PAYS LATE
000030	MCDONALD, REBECCA	3	AA	\$ 9500	
000019	MEALY, KEITH	1	DD	\$ 1000	
000018	MICHAELS, DOROTHY	4	AA	\$ 1850	
000043	MITCHENSON, KIM	2	DA	\$ 8000	
000016	MORRISON, KARLA	4	DA	\$ 1550	
000034	OSKAR, RENE	4	DA	\$ 2500	
000020	PEREZ, JANICE	4	DD	\$ 1750	
000036	PIKE, DANIEL	3	DA	\$ 6500	
000014	PUCKETT, WENDY	2	DD	\$ 1100	
000041	ROBERTSON, BRIAN	4	DD	\$ 3500	
000037	RODRIGUEZ, JULIO	1	DD	\$ 7500	
000004	RYAN, CHRISTOPHER	2	DD	\$ 1000	
000010	SCHMIDT, JOE	1	DD	\$ 1000	
000008	SCHROEDER, VIRGINIA	4	AA	\$ 9999	TOP CUSTOMER 1997
000011	SPRINGER, SARAH	4	DA	\$ 1500	NEW ADDRESS

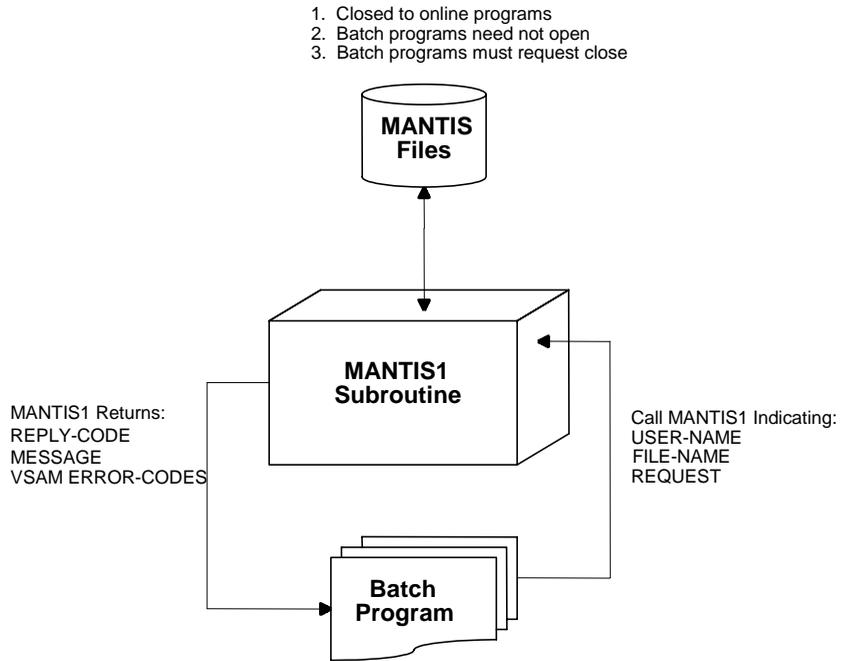
## Batch access subroutine

The batch access subroutine, MANTIS1, allows non-MANTIS batch programs to access online MANTIS files.

For Assembler programs calling MANTIS1, use the standard linkage conventions (e.g., the calling program must provide a save area of 18 full words, and, if loaded, the subroutine must be on a double word boundary). For PL/1 programs calling MANTIS1, specify OPTION(ASSEMBLER). The rest of this section discusses the COBOL linkage.

From your batch program, call MANTIS1 indicating the user name, file name, and the request you want to perform. MANTIS1 accesses the specified files, then returns a reply code and message to your batch program indicating the status of the request.

The following figure illustrates the processing flow of the MANTIS1 subroutine:



The "Example of subroutine usage" on page 385 provides the sample program used in this chapter.

The FILE-DESCRIPTION in working storage for the sample program is:

```

01  MANTIS-FILE-DATA.
    02  M-USER-NAME      PIC X(32)    VALUE 'POLITICS'.
    02  M-FILE-NAME     PIC X(32)    VALUE 'VOTERS_ROLL'.
    02  M-REQUEST       PIC X        VALUE 'P'.
    02  M-REPLY         PIC 9         VALUE ZERO.
        88  SUCCESSFUL          VALUE ZERO.
        88  DUPLICATE          VALUE 1.
    02  M-MESSAGE      PIC X(16).
    02  M-CODE-1       PIC X.
    02  M-CODE-2       PIC X.

```

The corresponding DATA-AREA in working storage for the sample program is:

```

01  MANTIS-DATA-AREA.
    02  NUMERIC-FIELDS.
        03  M-BLOCK          COMP-2.
        03  M-IDENTITY      COMP-2.
        03  M-DISTRICT      COMP-2.
        03  M-TELEPHONE    COMP-2.
    02  TEXT-FIELDS.
        03  M-NAME          PIC X(36).
        03  M-ADDRESS      PIC X(79).
        03  M-NEW-ADDRESS  PIC X(79).
        03  M-FIRST-NAMES  PIC X(60).
        03  M-LANGUAGE     PIC X(16).
        03  M-OCCUPATION   PIC X(20).

```

You must define all numeric fields first (even if they are interspersed with text fields in the record), then all text fields. Within the numeric and text sections, MANTIS assumes fields to be in the same sequential order as in the record. For each text field, specify the size as the same size used in your MANTIS record definition. (See [“Designing file views”](#) on page 115 for information on defining record layouts.) For each numeric field, specify a double-precision, internal floating-point field (COMP-2), regardless of whether you specify BIG or SMALL during MANTIS record definition.

## Available functions

Before calling MANTIS1, you must complete the USER-NAME, FILE-NAME, REQUEST and generally all the key field(s). USER-NAME and FILE-NAME are the names assigned to the MANTIS file (see “[Designing file views](#)” on page 115). The following table contains the valid values you may supply for REQUEST:

Valid values	Explanation
G (get)	Read a specific record (as specified in the key field(s)).
N (get next)	For sequential processing; read the first record with a key (or keys) greater than the key (or keys) specified.
B (get backwards)	Read the first record with a key (or keys) less than the key (or keys) specified. This request is not recommended if speed is essential, especially if used on a random basis.
P (put)	Insert a record.
U (update)	Update a record.
D (delete)	Delete a record.
Z (zap)	Delete <i>all</i> data records in the file.
C (close)	Close the VSAM file (the first call automatically opens the VSAM file).

## Replies and error messages

After executing a call to MANTIS1, MANTIS updates the REPLY, MESSAGE, ERROR-CODE-1, and ERROR-CODE-2. The following table contains the valid replies and messages returned by MANTIS and the reason for the reply:

Reply	Message	Reason
0		Request successfully completed.
1	END OF FILE	End of file (for N,B,Z).
	RECORD NOT FOUND	Record not found (for G, U, D).
	DUPLICATE KEY	Record already exists (for P).
2	FILE NOT ACTIVE	File definition indicates file not active.
	NOT AVAILABLE	Trying to access a library file.
	INVALID REQUEST	Request not G, U, D, and so on
	INVALID USER	User not found.
	INVALID FILE	File definition not found.
	CONTINUATION	Logical record spans more than one VSAM record and the subsequent record is not found. Or more fields are defined in the file profile than are found on the record.
	VSAM ERROR	VSAM open, close, read, or write error.*
	MODCB ERROR	Error returned from MODCB macro.*
	SHOWCB ERROR	Error returned from SHOWCB macro.*

\* In the case of these three errors, MANTIS updates ERROR-CODE-1 and ERROR-CODE-2 as follows:

- ◆ ERROR-CODE-1 contains the VSAM reply from Register 15.
- ◆ ERROR-CODE-2 contains the VSAM return code from FDBK.

## JCL requirements for MVS and DOS

Include the following JCL in any job step that uses the MANTIS1 subroutine:

### MVS

```
//SETPRAY DD DSN=mantis,DISP=SHR
```

### DOS

```
// DLBL SETPRAY,'mantis',,VSAM  
// EXTENT SYSxxx,XXXXXX
```

## CMS DLBL requirements

Issue the following DLBL statements before using the MANTIS1 subroutine:

```
DLBL IJSYSCT C (PERM)  
DLBL SETPRAY C DSN mantis (VSAM)
```

## Example of subroutine usage

To use MANTIS1 in a COBOL program, format the CALL statement as follows:

```
CALL 'MANTIS1' USING FILE-DESCRIPTION, DATA-AREA.
```

This sample routine reads external files and inserts data into MANTIS files. The MANTIS file used in this example is defined as indicated in the following table:

Element	Type	Dimensions	Attributes
BLOCK	SMALL		KEY
IDENTITY	BIG		KEY
NAME	TEXT	36	
ADDRESS	TEXT	79	
NEW_ADDRESS	TEXT	79	
DISTRICT	SMALL		
FIRST_NAMES	TEXT	60	
LANGUAGE	TEXT	16	
TELEPHONE	BIG		
OCCUPATION	TEXT	20	

The sample COBOL program follows:

```
IDENTIFICATION DIVISION.

        PROGRAM-ID.          VOTERS.
        REMARKS.             LOAD VOTERS ROLL FROM TAPE.

ENVIRONMENT DIVISION.

CONFIGURATION SECTION.
        SOURCE COMPUTER.     IBM-370-138.
        OBJECT-COMPUTER.    IBM-370-138.
        SPECIAL-NAMES.      UPSI-O ON STATUS IS DELETE-FIRST.

INPUT-OUTPUT SECTION.

FILE-CONTROL.
```

```

SELECT INPUT-FILE          ASSIGN TO SYS018-UT-3410-S-VOTERS.

DATA DIVISION.

FILE-SECTION.
FD  INPUT-FILE             RECORDING MODE IS F
                           BLOCK CONTAINS 2330 CHARACTERS
                           RECORD CONTAINS 233 CHARACTERS
                           LABEL RECORDS STANDARD.

01  INPUT-RECORD.
    02  I-DISTRICT          PIC 99.
    02  I-BLOCK             PIC 99.
    02  I-IDENTITY          PIC 9(13)      COMP SYNC.
    02  I-NAME              PIC X(36).
    02  I-ADDRESS           PIC X(79).
    02  I-FIRST-NAMES       PIC X(60).
    02  I-LANGUAGE          PIC X(16).
    02  I-OCCUPATION        PIC X(20).
    02  I-TELEPHONE         PIC 9(10).

WORKING-STORAGE SECTION.
77  END-INDICATOR          PIC 9           COMP SYNC VALUE ZERO.
    88  END-OF-FILE        VALUE 1.

01  MANTIS-FILE-DATA.
    02  M-USER-NAME         PIC X(32)      VALUE 'POLITICS'.
    02  M-FILE-NAME         PIC X(32)      VALUE 'VOTERS_ROLL'.
    02  M-REQUEST           PIC X          VALUE 'P'.
    02  M-REPLY             PIC 9          VALUE ZERO.
        88  SUCCESSFUL      VALUE ZERO.
        88  DUPLICATE       VALUE 1.
    02  M-MESSAGE           PIC X(16).
    02  M-CODE-1            PIC X.
    02  M-CODE-2            PIC X.

```

```
01 MANTIS-DATA-AREA.  
  02 NUMERIC-FIELDS.  
    03 M-BLOCK COMP-2.  
    03 M-IDENTITY COMP-2.  
    03 M-DISTRICT COMP-2.  
    03 M-TELEPHONE COMP-2.  
  02 TEXT-FIELDS.  
    03 M-NAME PIC X(36).  
    03 M-ADDRESS PIC X(79).  
    03 M-NEW-ADDRESS PIC X(79).  
    03 M-FIRST-NAMES PIC X(60).  
    03 M-LANGUAGE PIC X(16).  
    03 M-OCCUPATION PIC X(20).
```

```
PROCEDURE DIVISION.
```

```
CONTROL-ROUTINE.
```

```
  PERFORM INITIAL-ROUTINE.  
  PERFORM PROCESS-VOTERS  
    UNTIL END-OF-FILE.  
  PERFORM TERMINATE-ROUTINE.
```

```
INITIAL-ROUTINE.
```

```
  MOVE 'Z' TO M-REQUEST.          <- clear file indicator  
  PERFORM CALL-MANTIS.  
  MOVE 'P' TO M-REQUEST.          <- insert record indicator  
  MOVE LOW-VALUES TO NUMERIC-FIELDS.  
  MOVE SPACES TO TEXT-FIELDS.  
  OPEN INPUT INPUT-FILE.  
  PERFORM READ-TAPE.
```

```
PROCESS-VOTERS.  
    MOVE I-IDENTITY          TO M-IDENTITY.  
    MOVE I-BLOCK             TO M-BLOCK.  
    MOVE I-DISTRICT          TO M-DISTRICT.  
    MOVE I-TELEPHONE         TO M-TELEPHONE.  
    MOVE I-NAME              TO M-NAME.  
    MOVE I-ADDRESS           TO M-ADDRESS.  
    MOVE I-FIRST-NAMES       TO M-FIRST-NAMES.  
    MOVE I-LANGUAGE          TO M-LANGUAGE.  
    MOVE I-OCCUPATION        TO M-OCCUPATION.  
    MOVE SPACES              TO M-NEW-ADDRESS.  
    PERFORM CALL-MANTIS.  
    PERFORM READ-TAPE.  
READ-TAPE.  
    READ INPUT-FILE  
                                     AT END  
                                     MOVE 1 TO END-INDICATOR.  
  
CALL-MANTIS.  
    CALL 'MANTIS1' USING MANTIS-FILE-DATA, MANTIS-DATA-AREA.  
    IF DUPLICATE  
        DISPLAY I-NAME, I-IDENTITY  
        ADD 1 TO M-IDENTITY  
        GO TO CALL-MANTIS.  
    IF NOT SUCCESSFUL  
        DISPLAY 'VSAM ERROR : ' MANTIS-FILE-DATA  
        PERFORM TERMINATE-ROUTINE.  
  
TERMINATE-ROUTINE.  
    CLOSE INPUT-FILE.  
    MOVE 'C' TO M-REQUEST.  
    PERFORM CALL-MANTIS.  
    STOP RUN.
```

---

## Batch Dialog Facility

The Batch Dialog Facility (BDF) is a command driven interface that allows you to run several of the Program Design Facility (PDF) functions in a batch environment. PDF functions supported by the Batch Dialog Facility are as follows:

CEFCheck	HPOUnbind
Compose	Purge
Copy	Rename
CREF	SQLBind
Decompose	SQLCheck
Execute	SQLUnbind
HPOBind	Validate
HPOCheck	ETRGCleanup

PDF functions not supported by the Batch Dialog Facility are as follows:

List	Profile
Edit	Trigger List
Profile	SQL Maint
Audit Trail	Bill of Materials
Browse Audit Trail	

BDF also allows Command Driven Transfer and helps automate MANTIS installation.

This section provides:

Topic	See section
How the Batch Dialog Facility works	"How the Batch Dialog Facility works" on page 390
Requirements for using the Batch Dialog Facility	"Requirements for using the Batch Dialog Facility" on page 393
Syntax for the batch input stream	"Creating the batch input stream" on page 394
Tips for successfully using the Batch Dialog Facility	"Tips for successfully running the Batch Dialog Facility" on page 414.
Sample batch input and output	"Sample batch input streams" on page 416
Batch Dialog return codes for OS	"Batch Dialog return codes for OS" on page 427

## How the Batch Dialog Facility works

You initiate the Batch Dialog Facility by defining an input stream that specifies:

- ◆ Execution JCL
- ◆ Environment specifications for the batch job
- ◆ Option 1 (of the MANTIS Facility Selection menu), Run a Program by Name
- ◆ The Batch Dialog Facility run statement CONTROL: BATCH\_DIALOG
- ◆ Function statements and their options

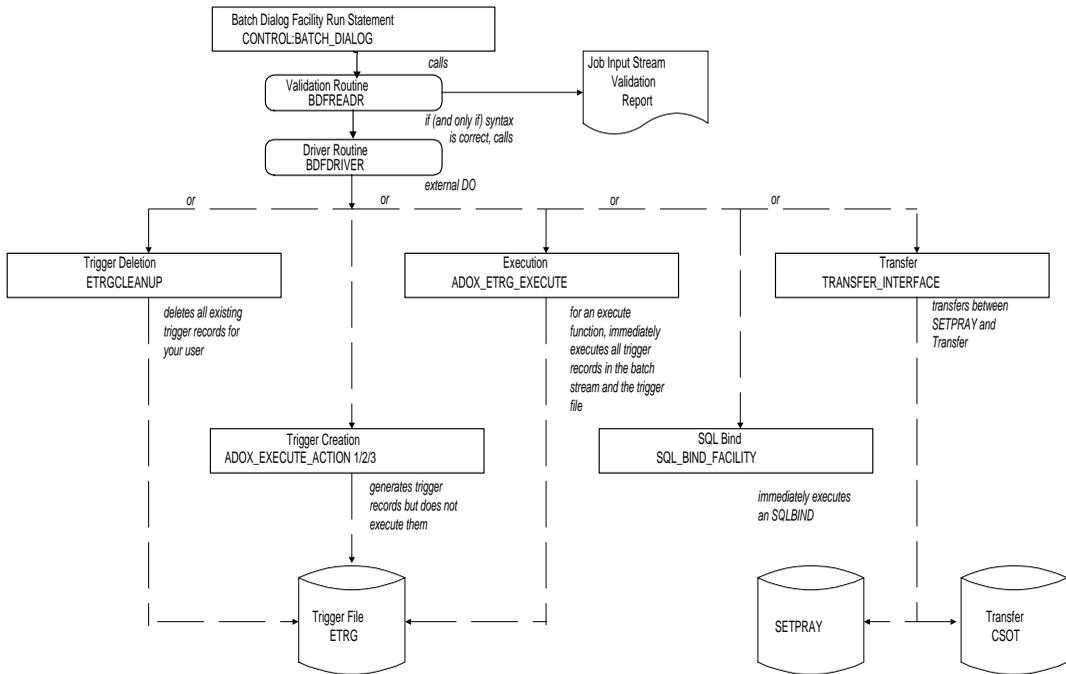
The batch stream statements are similar to the MANTIS Print Facility in that they specify actual function statements (instead of simulating an online session by mimicking cursor movement). The Batch Dialog Facility reads the batch stream and executes the functions you specify. (See sample batch streams in “[Sample batch input streams](#)” on page 416.)

The Batch Dialog Facility syntax checks your statements and then generates trigger records using the functions and options you enter in the input stream. If you do not specify an option for a particular function, the Batch Dialog Facility uses the defaults set in the EDPR records for each action. Refer to [MANTIS Administration, OS/390, VSE/ESA](#), P39-5005, for information about EDPR records.

The Batch Dialog Facility creates trigger records for all functions except Execute, ETRGcleanup, SQLBind, and Validate, which it always executes immediately. Use Validate to force the BDF to syntax-check your batch stream without actually executing any functions. Use ETRGcleanup to delete all existing (ETRG) trigger records for your user.

The Execute statement processes all trigger records that exist on the trigger (ETRG) file. This includes any trigger records which existed on the file prior to this job, as well as those trigger records generated by this job. You can define a different ETRG file for use in batch instead of the online ETRG file.

The following figure illustrates how the Batch Dialog Facility works:



## Requirements for using the Batch Dialog Facility

To use the Batch Dialog Facility, you must have certain access to some of the MANTIS files. The following table lists the MANTIS files and their access requirements:

<b>You must have this access</b>	<b>For this MANTIS file</b>	<b>If</b>
Update	SETPRAY	You specify an action in the input stream that requires saving or replacing an entity on the MANTIS cluster.
Read-only	SETPRAY	You specify CHECK or CREF (unless you use the GENTRIG option).
Read-only	EDPR	Anytime
Update	EEPR	You specify an action in the input stream that requires saving or replacing an entity on the MANTIS cluster.
None	EHLP	
Update	ELOG	Logging is turned on.
Update	EREF	You specify CREF or PURGE in the input stream.
Update	ETRG	You specify functions in the input stream that create or delete trigger records (this includes all options except EXECUTE, VALIDATE, or SQLBIND).
Read-only	ETRG	You specify EXECUTE and the options KEEP and KEEPERROR.
Update	CSOT (TRANSFER)	You specify the TRANSFER function.
None	IADB	

The Batch Dialog Facility verifies that you have update access to the SETPRAY, CSOT, ETRG, ELOG, and EEPR files if it is required for the job. If the facility requires update access and it is not available, the job ends with an error. The Batch Dialog Facility does not perform any functions and immediately produces the input validation stream report.

### **Creating the batch input stream**

Use the following syntax to create the batch input stream. Each statement in the stream can be up to 72 characters (make sure you do not have numbers in columns 72 to 80).

Also, you can specify more than one function in the batch stream.

## BDF Parameters

The following tables show all the valid parameters that can be specified in the batch input stream.

---

### FUNCTION=

- ◆ Specifies the function to be executed:

	[HPO ]BIND
	CEFCHECK
	[HPO ]CHECK
	COMPOSE
	COPY
	CREF
	DECOMPOSE
	ETRGCLEANUP
FUNCTION =	EXECUTE
	PURGE
	RENAME
	SQLBIND
	SQLCHECK
	SQLUNBIND
	[HPO ]UNBIND
	VALIDATE
	TRANSFER

**TYPE=**

- ◆ Specifies the type of entity for the function.

TYPE = {  
PROGRAMS ^^  
SCREENS \*  
FILES \*  
PROMPTERS \*  
INTERFACES \*  
SCENARIOS \*  
TOTAL VIEWS \*  
EXTERNAL VIEWS \*  
DLIP \*  
DLIS \*  
DLIU \*  
ALL \* %  
}

\* Transfer function only

^^ Valid for all functions (Default for ALL but Transfer)

%Default for Transfer function

---

**BIN=**

- ◆ Indicates the Bin Name and Bin Password.
- ◆ Only valid with FUNCTION=TRANSFER.

**BIN = binname, binpass**

---

**OPTIONS=**

- ◆ Specifies which options are in effect when the function is executed.
- ◆ Options not indicated will default to the EDPR settings for that function.

```

[BOUNDONLY]
[ALL]
[COMPSTMT]
[NOCOMPSTMT]
[PRGMCOMP]
[DB2]
[SQLDS]
[DECOMPALL]
[NODECOMPALL]
[DISPDET]
[NODISPDET]
[DISPSUM]
[NODISPSUM]
[FORCECOMP]
[NOFORCECOMP]
[PRGMFORCE]
[GENTRIG]
[NOGENTRIG]
[KEEP]
[NOKEEP]
[KEEPELLOW]
[NOKEEPELLOW]
[REPLACE]
[NOREPLACE]
[SQLBLK]
[NOSQLBLK]
[SQLKEEP]
[SQLREVOKE]
[SQLMOD = xxxxxxxx]
[SQLOWNER = xxxxxxxx]
[SQLPASSWORD = xxxxxxxx]
[SQLSAVE]
[SQLREPL]
[SQLVARS1]
[SQLVARS2]
[SQLVARS3]
[CREATEBIN]
[DELETEBIN]
[IN]
[OUT]
[DELETE]
[ADD]
[REPLACE]
[DATA]
[NODATA]
[HISTORY]
[NOHISTORY]
[NEWPASS = xxxxxxxxxxxxxxxxxx]

```

---

**SELECT=**

- ◆ Specifies the entity name or names that are used for the function.

**SELECT={entity-name1[,entity-name2]}**

**SELECT={name[,newname]} (Valid only for FUNCTION=TRANSFER)**

---

**END**

- ◆ Indicates the end of the input data stream.

---

**Function**


---

FUNCTION = {

- [HPO ]BIND
- CEFCHECK
- [HPO ]CHECK
- COMPOSE
- COPY
- CREF
- DECOMPOSE
- ETRGCLEANUP
- EXECUTE
- PURGE
- RENAME
- SQLBIND
- SQLCHECK
- SQLUNBIND
- [HPO ]UNBIND
- VALIDATE
- TRANSFER

}

---

**Description** *Required.* Specifies the name of the Program Design Facility function you want to perform.

**Options**

- ◆ BIND (HPOBIND) Create a new HPO-bound version of a MANTIS program. You can use HPOBIND as an alias for BIND.
- ◆ CEFCHECK Verify whether a source program needs to be composed. You must recompose a source program if any of its components have changed since the last time the program was composed.
- ◆ CHECK (HPOCHECK) Check an HPO-bound program to determine whether any programs or components changed since the last time the program was bound. You can use HPOCHECK as an alias for CHECK.

- ◆ **COMPOSE** Assemble or compose a source program and component code into a composed MANTIS program that you can edit and run.
- ◆ **COPY** Copy the contents of one program to another program (in your library only).
- ◆ **CREF** Cross-reference programs and components in your library and build the Bill of Materials List.
- ◆ **DECOMPOSE** Disassemble a composed program (an executable program), splitting MANTIS source code and component code and updating your library with any changes.
- ◆ **ETRGCLEANUP** Delete all trigger records for the signed-on user. The number of records deleted is displayed on the trigger creation summary report.
- ◆ **EXECUTE** Execute all current trigger records. This is the same as running the program VPF:ADOX\_ETRG\_EXECUTE by name.
- ◆ **PURGE** Delete a program from your library. (Note: Because this is a batch operation, no confirm option exists as it does online.)
- ◆ **RENAME** Change the name of a program in your own user library.
- ◆ **SQLBIND** For static SQL, place information about a (DB2 for VSE and VM—formerly SQL/DS—and DB2 only) 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, dynamically create a DB2 for VSE and VM 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.
- ◆ **SQLCHECK** (Requires access to the DB2 DRDM library.) For DB2 and DB2 for VSE and VM (formerly SQL/DS) only.
  - For static SQL—To determine whether a program and its corresponding SQL support load module are consistent.
  - For extended dynamic SQL—To determine whether the program and its corresponding DB2 for VSE and VM Access Module are consistent.

- ◆ **SQLCHECK** For static SQL, mark the program as not SQL (DB2 and DB2 for VSE and VM (formerly SQL/DS) only) bound and delete the SQL bind information from the internal file. For extended dynamic, mark the program as not SQL bound, remove additional information from the MANTIS cluster about SQL statements and host variables contained in the program, and delete the associated DB2 for VSE and VM Access Module.
- ◆ **UNBIND (HPOUNBIND)** Replace the HPO-bound version of a MANTIS program with the unbound version. You can use HPOUNBIND as an alias for UNBIND.
- ◆ **VALIDATE** Syntax check the job input stream. The job validation stream report prints. No other functions will execute.
- ◆ **TRANSFER** Allows transferring of entities from the MANTIS cluster to the Transfer file and back.

## Considerations

- ◆ The batch job terminates with an error if you do not specify a function. (There is no default function.)
- ◆ For more information about each function described in this section, refer to *MANTIS Program Design and Editing, OS/390, VSE/ESA, P39-5013*.

## TYPE statement

---

TYPE = {  
PROGRAMS ^^  
SCREENS \*  
FILES \*  
PROMPTERS \*  
INTERFACES \*  
SCENARIOS \*  
TOTAL VIEWS \*  
EXTERNAL VIEWS \*  
DLIP \*  
DLIS \*  
DLIU \*  
ALL \* %  
}

\* Transfer function only

^^ Valid for all functions (Default for ALL but Transfer)

%Default for Transfer function

---

**Description** *Optional.* Specifies which entity is to be affected.

**Default** PROGRAMS

### Consideration

- ◆ For all PDM functions, TYPE=PROGRAMS is the only option available.
  - ◆ For the TRANSFER function, additional types can be used.
- 

## BIN statement

**Description** *Required* for the FUNCTION=TRANSFER operation. Specifies which bin you want to transfer entities to or from.

**Example** BIN=TEST,TESTPASS

**Consideration** You specify the bin's password on the BIN statement by following the name with a comma.

## Options

```

[ BOUNDONLY ]
[ ALL ]
[ COMPSTMT ]
[ NOCOMPSTMT ]
[ PRGMCOMP ]
[ DB2 ]
[ SQL/DS ]
[ DECOMPALL ]
[ NODECOMPALL ]
[ DISPDET ]
[ NODISPDET ]
[ DISPSUM ]
[ NODISPSUM ]
[ FORCECOMP ]
[ NOFORCECOMP ]
[ PRGMFORCE ]
[ GENTRIG ]
[ NOGENTRIG ]
[ KEEP ]
[ NOKEEP ]
[ KEEPERROR ]
[ NOKEEPERROR ]
[ REPLACE ]
[ NOREPLACE ]
[ SQLBLK ]
[ NOSQLBLK ]
[ SQLKEEP ]
[ SQLREVOKE ]
[ SQLMOD = xxxxxxxx ]
[ SQLOWNER = xxxxxxxx ]
[ SQLPASSWORD = xxxxxxxx ]
[ SQLSAVE ]
[ SQLREPL ]
[ SQLVARS1 ]
[ SQLVARS2 ]
[ SQLVARS3 ]
[ CREATEBIN ]
[ DELETEBIN ]
[ IN ]
[ OUT ]
[ DELETE ]
[ ADD ]
[ REPLACE ]
[ DATA ]
[ NODATA ]
[ HISTORY ]
[ NOHISTORY ]
[ NEWPASS = xxxxxxxxxxxxxxxxxx ]

```

OPTIONS =

**Description** *Optional.* Specifies the option(s) you want to designate for the function that you specify earlier in the input stream.

## Options



Defaults specified below are the initial defaults as supplied by Cincom for a new install and may have been changed at your site.

---

- ◆ **BOUNDONLY** Execute the function only on those entities that are currently bound (HPO).

ALL Bind all entities that match the **SELECT=** criteria (whether already bound or not). This option is introduced in the Batch Dialog Facility and does not currently exist online.

- ◆ **COMPSTMT** Comment the **COMPONENT** statements and generate the **CEND** statements to mark the end of components.

**NOCOMPSTMT** Omit commented **COMPONENT** and **CEND** statements.

PRGMCOMP Use the values coded in the **COMMENTS** parameter of the **CSIOPTNS** statement in your source program.

- ◆ DB2 Indicate that the SQL database to which you are connecting is DB2.

**SQL/DS** Indicate that the SQL database to which you are connecting is DB2 for VSE and VM (formerly SQL/DS).

- ◆ **DECOMPALL** Decompose all components.

NODECOMPALL Decompose only nominated components.

- ◆ DISPDET Display the detailed report.

**NODISPDET** Do not display the detail report.

- ◆ DISPSTAT Display the status of the function.

**NODISPSTAT** Do not display the status of the function.

- ◆ DISPSUM Display the summary report.

**NODISPSUM** Do not display this report.

- ◆ **FORCECOMP** Override the CSIOPTNS statement in the program and force the compose to occur.  
  
NOFORCECOMP Override the CSIOPTNS statement and display the COMPOSE Confirmation panel.  
  
PRGMFORCE Use the value coded in the FORCE parameter of the CSIOPTNS statement in your source program.
- ◆ **GENTRIG** (1) Create a compose trigger record if CEFCHECK fails, or (2) create a bind trigger if (HPO)CHECK fails.  
  
NOGENTRIG Do not generate trigger records when CEFCHECK or (HPO)CHECK fails.  
  
This option for (HPO)CHECK is introduced in the Batch Dialog Facility and does not currently exist online.
- ◆ **KEEP** Keep successfully executed trigger records instead of deleting them.  
  
NOKEEP Delete successfully executed trigger records.
- ◆ **KEEPERROR** Keep trigger records that execute with an error.  
  
NOKEEPERROR Delete trigger records that execute with an error.
- ◆ **REPLACE** Replace a program by the same name if it is found.  
  
NOREPLACE Replace a program by the same name if found. If the entity exists and NOREPLACE is specified, the Batch Dialog Facility does not create a trigger record.
- ◆ **SQLBLK** (*DB2 for VSE and VM—formerly SQL/DS—only*) Group rows retrieved by the Access Module in blocks to improve performance.  
  
SQLNOBLK (*DB2 for VSE and VM—formerly SQL/DS—only*) Access the rows individually.
- ◆ **SQLKEEP** (*DB2 for VSE and VM—formerly SQL/DS—only*) Keep the RUN authorities granted to the existing Access Module for the new Access Module.  
  
SQLREVOKE (*DB2 for VSE and VM—formerly SQL/DS—only*) Revoke the RUN authorities.

- ◆ SQLMOD=xxxxxxx
  - DB2—Indicate the name of the SQL Support Module. Up to 7 alphanumeric characters are allowed. Specify the option as: OPTIONS=SQLMOD=modname.
  - DB2 for VSE and VM (formerly SQL/DS)—Indicate the name of the DB2 for VSE and VM Access Module. Up to 8 alphanumeric characters are allowed. Specify the option as: OPTIONS=SQLMOD=modname.

- ◆ SLOWNER=xxxxxxx (DB2 for VSE and VM—formerly SQL/DS—only) Indicate the DB2 for VSE and VM owner of the Access Module. Specify the option as: OPTIONS=SLOWNER=sqlowner-name.

SQLPSWD=xxxxxxx (DB2 for VSE and VM—formerly SQL/DS—only) Specify a valid DB2 for VSE and VM user password. Specify the option as: OPTIONS=SQLPSWD=sqlpassword.

- ◆ SQLSAVE
  - DB2—Create the SQL Bind Information.
  - DB2 for VSE and VM (formerly SQL/DS)—Add the Access Module to the DB2 for VSE and VM catalogue.
- ◆ SQLREPL
  - DB2—Replace the existing SQL Bind Information for the program.
  - DB2 for VSE and VM (formerly SQL/DS)—Replace an existing Access Module with the Access Module created during the SQL bind.

- ◆ SQLVARS These options specify what should be done if undefined variables are encountered during the SQL Bind.

SQLVARS1 Indicate “quit with display” if any undefined variables are found.

SQLVARS2 Indicate “continue no display.”

SQLVARS3 Indicate “continue with display.”

- ◆ **CREATE BIN** Applies to FUNCTION=TRANSFER only. Specifies that a bin, identified by the BIN=keyword is to be created.

DELETE BIN Applies to FUNCTION=TRANSFER only. Specifies that a bin, identified by the BIN=keyword is to be deleted. All entities stores in the deleted bin will also be deleted.

IN Applies to FUNCTION=TRANSFER only. Specifies that an entity, identified by the SELECT=keyword is to be transferred into the MANTIS cluster from the Transfer file.

OUT Applies to FUNCTION=TRANSFER only. Specifies that an entity, identified by the SELECT=keyword is to be transferred from the MANTIS cluster to the Transfer file. OUT is the default.

DELETE Applies to FUNCTION=TRANSFER only. Specifies that an entity, identified by the SELECT=keyword is to be deleted from the Transfer file.

- ◆ **ADD/REPLACE** Applies to FUNCTION=TRANSFER only. Specifies that the entity being transferred is to either, be added if it does not already exist or replace an existing entity with the same name. ADD is the default.
- ◆ **DATA/NODATA** Applies to FUNCTION=TRANSFER only. Specifies that data in a MANTIS file should, or should not be transferring the file view. NODATA is the default.
- ◆ **HISTORY/NOHISTORY** Applies to FUNCTION=TRANSFER only. Specifies that the Extended Entity Program Record (EEPR) for an entity is transferred along with the entity. HISTORY is the default.
- ◆ **NEWPASS=xxxxxxxxxxxxxxxx** Applies to FUNCTION=TRANSFER only. Specifies a new password for the entity being transferred. See SELECT=keyword for specifying a new name for the entity as it is transferred.

## Considerations

- ◆ If you do not specify OPTIONS= , MANTIS defaults to the values found in the dialog (EDPR) record for that function. Options specified in the dialog override the defaults defined in the EDPR and are in effect until changed or MANTIS encounters a new FUNCTION= statement. Refer to *MANTIS Administration, OS/390, VSE/ESA, P39-5005*, to change the default options for an action.

- ◆ If you use NOFORCECOMP or PRGMFORCE and the FORCE= parameter of CSIOPTNS is set to FORCE=NO, the following will happen:
  - The Compose confirmation screen displays in the printer output.
  - The program will not compose.
  - The return code will be “00”.
- ◆ You can specify multiple OPTIONS= statements or put multiple options on one OPTIONS= statement (separated by commas).
- ◆ When you use DB2, the Batch Dialog Facility ignores any options you specify for DB2 for VSE and VM (formerly SQL/DS).
- ◆ The following table lists the options allowed by each of the functions:

Function	Options
HPOBIND	<u>BOUNDONLY</u> / <u>ALL</u> <u>DISPSTAT</u> / <u>NODISPSTAT</u>
CEFCHECK	<u>GENTRIG</u> / <u>NOGENTRIG</u> <u>DISPDET</u> / <u>NODISPDET</u> <u>DISPSUM</u> / <u>NODISPSUM</u>
HPOCHECK	<u>GENTRIG</u> / <u>NOGENTRIG</u> <u>DISPSTAT</u> / <u>NODISPSTAT</u>
COMPOSE	<u>COMPSTMT</u> / <u>NOCOMPSTMT</u> / <u>PRGMCOMP</u> <u>FORCECOMP</u> / <u>NOFORCECOMP</u> / <u>PRGMFORCE</u> <u>DISPSUM</u> / <u>NODISPSUM</u>
COPY*	<u>REPLACE</u> / <u>NOREPLACE</u> (to name required)
CREF	<u>DISPSUM</u> / <u>NODISPSUM</u>
DECOMPOSE	<u>DISPDET</u> / <u>NODISPDET</u> <u>DISPSUM</u> / <u>NODISPSUM</u> <u>DECOMPALL</u> / <u>NODECOMPALL</u>
ETRGCLEANUP	(no options allowed)

\* Indicates single program execution only, no wildcards or ranges allowed.

Function	Options
EXECUTE	KEEP / NOKEEP KEEPERROR / NOKEEPERROR
PURGE	(no options allowed)
RENAME*	REPLACE / <u>NOREPLACE</u> (to name required)
SQLBIND*	<u>DB2</u> / SQL/DS <u>SQLSAVE</u> / SQLREPL <u>SQLKEEP</u> / SQLREVOKE (DB2 for VSE and VM—formerly SQL/DS—only) <u>SQLBLK</u> / SQLNOBLK (DB2 for VSE and VM—formerly SQL/DS—only) <u>SQLVARS1</u> / <u>SQLVARS2</u> / <u>SQLVARS3</u> SQLMOD=xxxxxxx SQLOWNER=xxxxxxx (DB2 for VSE and VM—formerly SQL/DS—only) SQLPSWD=xxxxxxx (DB2 for VSE and VM—formerly SQL/DS—only)
SQLCHECK	<u>DISPSTAT</u> / NODISPSTAT
SQLUNBIND	<u>DISPSTAT</u> / NODISPSTAT
HPOUNBIND	<u>DISPSTAT</u> / NODISPSTAT
VALIDATE	(no options allowed)
TRANSFER	CREATE BIN / DELETE BIN / IN / <u>OUT</u> / DELETE <u>ADD</u> / REPLACE DATA / <u>NODATA</u> <u>HISTORY</u> / NOHISTORY NEWPASS=xxxxxxxxxxxxxxxx

\* Indicates single program execution only, no wildcards or ranges allowed.

## **SELECT = {*entity-name1*[, *entity-name2*]}**

**Restriction** This format is for PDF functions only.

**Description** *Required.* Specifies the program name for the function. (At this time the Batch Dialog Facility only allows programs.)

### **PDF Considerations**

- ◆ You **MUST** specify the SELECT statement. It does not default to ALL. If you do not specify SELECT=, the batch job terminates with an error.
- ◆ For the COPY and RENAME functions, *entity-name2* is the required *to* name. If you specify *entity-name2* for any other function, MANTIS considers your select statement a range.
- ◆ SQLBIND allows only one entity name (no ranges).
- ◆ You can use wildcard characters (\* and ?) in the SELECT= statement for all functions except SQLBIND, COPY, and RENAME.
- ◆ The *entity names* must be program names only. (Do not qualify it with user or password.)
- ◆ The EXECUTE, VALIDATE, and ETRGCLEANUP functions do not accept a SELECT= statement.
- ◆ Use a comma to separate names on the SELECT= statement.

---

**SELECT = {*name*[, *newname*]}**

**Restriction** This format is for the TRANSFER function only.

**Description** *Required.* Specifies the entity to be transferred.

**Transfer Considerations**

- ◆ For the TRANSFER Function, the select statement specifies the entity name to be transferred. If SELECT= is not specified, the batch job terminates with an error.
- ◆ If *newname* is specified it is considered the *newname* for the entity to be transferred. The select statement does not default to ALL.
- ◆ The Name must only include the name, not user or password.
- ◆ Use a comma to separate name and *newname* on the SELECT=statement.
- ◆ No wildcard characters are permitted in the select name.

**END**

**Description** *Optional.* Indicates the end of the input statements for the input stream.

**Example** The following sample batch input stream has a description of each line in italics to the right:



The input stream is shown with blank lines to allow for comments to the right. The Batch Dialog Facility allows blank lines, but, if you have five (5) or more blank lines in a row, the Batch Dialog Facility terminates with an error.

<pre>&lt;PAGESIZE=60x132&gt;;TEST;TEST; &lt;BLANK=ON&gt;;&lt;FAULT=ON&gt;;&lt;ECHO=OFF&gt;;1 CONTROL: BATCH_DIALOG FUNCTION= COPY TYPE= PROGRAMS OPTIONS= REPLACE SELECT= FROM_PROGRAM_NAME, TO_PROGRAM_NAME</pre>	<p><i>Specifies the environment for the batch job, and chooses option 1 (Run a Program by Name)</i></p> <p>-----</p> <p><i>Runs the program CONTROL: BATCH_DIALOG</i></p> <p>-----</p> <p><i>Specifies that a copy will be done</i></p> <p>-----</p> <p><i>Specifies the type of entity (optional)</i></p> <p>-----</p> <p><i>Specifies the REPLACE (if found) option</i></p> <p>-----</p> <p><i>Specifies the program-to-be-copied name and the program-to-be-created name</i></p>
--	---

**Action** Batch Dialog creates a trigger record:

COMMENTS ALLOWED	<i>Comments allowed</i>
FUNCTION=COMPOSE	<i>Specifies that a COMPOSE is to be done</i>
TYPE=PROGRAMS	<i>Specifies the type of entity (optional)</i>
OPTIONS=DISPSUM, COMPSTMT, PRGMFORCE	<i>Specifies the options Display Summary, Comment Component Statements, and Force Compose option found in the program</i>
SELECT=*@	<i>Selects all programs having a @ suffix (source program)</i>

**Action** Batch Dialog creates a trigger record:

FUNCTION=EXECUTE	<i>Specifies the EXECUTE command</i>
OPTIONS=KEEPOPTIONS	<i>Specifies the options for the EXECUTE. Keep the trigger records after successful execution (instead of deleting them). NOKEEPERROR deletes any trigger records where an error occurred when trying to execute them.</i>
OPTIONS=NOKEEPERROR	

**Action** Batch Dialog executes all trigger records:

END	<i>Ends the job stream</i>
<PA2>	<i>Issues CANCELs to end the program and log off MANTIS</i>
<PA2>	

## Tips for successfully running the Batch Dialog Facility

This section provides tips for running the Batch Dialog Facility.

### Running Batch Dialog without an EXECUTE function

When you use the Batch Dialog Facility for the first few times, you should run it without an EXECUTE statement and examine the trigger records to verify that it generates what you expect. You can do this by: (1) examining the trigger records online as the Batch Dialog Facility displays its output, (2) running QRW reports, or (3) writing a utility to print off the trigger records yourself. (The external file view for ETRG is available on the MASTER user.) You can run the Batch Dialog Facility again with just the EXECUTE function.

### Executing functions in the correct order

Because the Batch Dialog Facility generates trigger records, ensure that you execute functions in the order you want them to be processed. This is especially true if you mix actions which generate trigger records with actions that execute immediately, such as SQLBIND. The following is an example of a job stream that *will not execute correctly*:

```
JCL Statements
.
.
.
TEST;TEST;
1;
CONTROL: BATCH_DIALOG
FUNCTION=COMPOSE
SELECT=XYZ@
FUNCTION=SQLBIND
SELECT=XYZ
FUNCTION=EXECUTE
END
<PA2>
<PA2>
```

In the previous example, the wrong version of XYZ will be SQL-bound. The COMPOSE function only generates a trigger record. The SQLBIND function executes immediately on an older version of XYZ, since XYZ@ has not been composed yet. The trigger to compose XYZ@ is executed with the EXECUTE function.

To correct this job stream, put the EXECUTE function before the SQLBIND function.

Another example of an incorrectly positioned EXECUTE function follows. Assume that you want to decompose the executable and then compose the source that was created by the decompose. The following input stream may seem correct:

```
JCL Statements
.
.
.
TEST;TEST;
1;
CONTROL: BATCH_DIALOG
FUNCTION=DECOMPOSE
SELECT=ABC
FUNCTION=COMPOSE
SELECT=ABC@
FUNCTION=EXECUTE
END
<PA2>
<PA2>
```

MANTIS generates a trigger record for the decompose, but since the decompose has not been executed, the source program ABC@ does not exist. Therefore, the trigger record to compose ABC@ will not be created because ABC@ was not found.

To correct this situation, put an additional FUNCTION=EXECUTE statement after the decompose function and its corresponding select statement. In general, put a FUNCTION=EXECUTE statement after each function you want done immediately.

## Sample batch input streams

This section provides the following:

Topic	See
A sample input stream and its resulting output	<a href="#">“Sample batch input stream and BDF output”</a> on page 416
Sample input streams for the MVS and DOS environments, complete with JCL	<a href="#">“Sample MVS and DOS batch input streams”</a> on page 423

### Sample batch input stream and BDF output

The following shows a sample batch input stream for the Batch Dialog Facility. Comments display to the side.



The input stream is shown with blank lines to allow for comments to the right. The Batch Dialog Facility will allow blank lines, but, if you have five or more blank lines in a row, the Batch Dialog Facility terminates with an error:

<pre>&lt;PAGESIZE=60X132&gt;;TEST;TEST;</pre>	<p><i>Batch MANTIS command to format output and sign on</i></p>
<pre>&lt;BLANK=ON&gt;; &lt;FAULT=ON&gt;; &lt;ECHO=OFF&gt;; 1</pre>	<p><i>Batch MANTIS commands to format output and invoke the Run a Program by Name option</i></p>
<pre>CONTROL: BATCH_DIALOG</pre>	<p><i>Run the program CONTROL: BATCH_DIALOG</i></p>
<pre> </pre>	<p><i>Comments allowed</i></p>
<pre>FUNCTION=CEFCHECK</pre>	<p><i>Performs a CEFCHECK</i></p>
<pre>OPTIONS=GENTRIG,DISPDET,DISPSUM</pre>	<p><i>Specifies options for CEFCHECK</i></p>
<pre>SELECT=COMPTST</pre>	<p><i>Specifies the programs for the CEFCHECK</i></p>
<pre>SELECT=NO_SUCH_PROGRAM</pre>	<p><i>Comments allowed</i></p>
<pre> </pre>	<p><i>Comments allowed</i></p>
<pre>FUNCTION=CHECK</pre>	<p><i>Performs a CHECK</i></p>
<pre>OPTIONS=GENTRIG,DISPSTAT</pre>	<p><i>Specifies the options for CHECK</i></p>

TYPE=PROGRAMS	<i>Specifies the entity type</i>
SELECT=COMPTEST	<i>Specifies the program for CHECK</i>
	<i>Comments allowed.</i>
FUNCTION=EXECUTE	<i>Issues an EXECUTE</i>
OPTIONS=NOKEEP, NOKEEPERROR	<i>Specifies options for EXECUTE</i>
END	<i>Specifies the end of the batch input stream</i>
<PA2>	<i>Issues CANCELs to end the program and log off</i>
<PA2>	<i>MANTIS</i>

The following is the Batch Dialog output display for the previous stream:

1. The Batch Dialog Validation Report displays errors, warnings, and information messages. It also indicates generated statements and number of selected programs found shown in the following screen illustration:

```

YYYY/MM/DD - HH:MM:SS   B A T C H   D I A L O G   F A C I L I T Y
User - TEST

                                Input Statements
Statements:                  Response:
FUNCTION=CEFCHECK           :
OPTIONS=GENTRIG             :
OPTIONS=DISPDET             :
OPTIONS=DISPSUM             :
SELECT=COMPTEST             I FZC042I:1 Program(s) found
TYPE=PROGRAMS              I MPFXGDI:Generated by default
                            :
FUNCTION=CEFCHECK           I MPFXGDI:Generated by default
TYPE=PROGRAMS              I MPFXGDI:Generated by default
OPTIONS=                    I BDFOPFI:Options from previous function in effect
SELECT=NO_SUCH_PROGRAM      W MPFXNOW:No programs were found
                            :
FUNCTION=HPOCHECK           :
OPTIONS=GENTRIG             :
OPTIONS=DISPSTAT           :
SELECT=COMPTEST             I MPFXFNI:1 Program(s) found
TYPE=PROGRAMS              I MPFXGDI:Generated by default
                            :
FUNCTION=EXECUTE            :
OPTIONS=NOKEEP              :
OPTIONS=NOKEEPERROR        :
                            :
END                          :
                            :
Diagnostics : MPFXSRI:10 Input statements(s) read
              : MPFXSGI:4 Statement(s) generated by default
              : MPFXWIW:1 Warning(s) issued
              : MPFXEII:No erroneous statement(s) found

```

- After the Batch Dialog Validation Report, the Batch Dialog Facility displays any errors it encounters while creating trigger records shown in the following screen illustration:

```

PRGMENT01A      CEFCHECK Program Entry      YYYY/MM/DD HH:MM:SS
==>From
  Library . . . TEST
  Name . . . . NO_SUCH_PROGRAM      Password :      :
  Description .
Thru
  Name . . . .
Entry Options      Function Options      Process Statistics
Immediate? . . . N      Create trigger?      Y      Processed
Confirmation? . . . N      Display detail?      Y      Skipped
Addendum? . . . . N      Display summary?      Y      Errors      1
CEFCHECK      NO_SUCH_PROGRAM
FACF02: Not found

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

- Next, the Trigger Record Creation Summary displays indicating the success or failure of trigger record creation shown in the following screen illustration:

```

*****
* BDFTRIG01                               Page 1      *
*                               MANTIS Batch Dialog Facility      *
*                               *                               *
*   T r i g g e r   R e c o r d   C r e a t i o n   S u m m a r y   *
*                               *                               *
*Errors occurring while creating trigger records appear before      *
*this panel. Status of SQL Bind functions appear before this panel.*
*                               *                               *
*                               *                               *
*****
BDFTRCI:Trigger record 'CEFCHECK TEST:COMPTTEST' created
BDFTRFE:Error-trigger record 'CEFCHECK TEST:NO_SUCH_PROGRAM' not created
BDFTRCI:Trigger record 'HPOCHECK TEST:COMPTTEST' created
    
```

4. Then, an Eye Catcher panel displays to indicate the start of trigger record execution (caused by the EXECUTE function) shown in the following screen illustration:

```

*****
* BDFEXEC01                                     *
*           MANTIS Batch Dialog Facility       *
*                                           *
*   S t a r t   T r i g g e r   R e c o r d   E x e c u t i o n   *
*                                           *
*****

```

5. After the Batch Dialog Facility executes each trigger record, its profile is shown in the following screen illustration:

```

ETRGPROF           Trigger Record Profile
ACTION . . . . . CEFCHECK
Source
  Library . . . . . TEST                      SeqNo . . . . . 00027
  Date request . . . . . YYYY/MM/DD   HH:MM:SS
  Status . . . . . ACTIVE
From
  Library . . . . . TEST
  Name . . . . . COMPTST
  Description . . .
To
  Library . . . . .
  Name . . . . .
  Description . . .
Entry Options           Function Options
Immediate? . . . . . Y      Create trigger? . . . . . Y
Confirmation? . . . . . N    Display detail? . . . . . Y
Addendum? . . . . . N      Display summary? . . . . . Y
F3=EXIT  F6=EXECUTE  F8=SKIP  F12=CANCEL

```

- The results of the execution display (if DISPSTAT, DISPDET, and DISPSUM are specified).

A DISPDET is shown in the following screen illustration:

```

PRGMCHK01          CEFCHECK Detail Report          YYYY/MM/DD HH:MM:SS
                                          More:
Library . . . . . TEST
Name . . . . . COMPTEST
Composed . . . . . YYYY/MM/DD   HH:MM:SS
Changed . . . . . YYYY/MM/DD   HH:MM:SS
Components . . . . .
No Library      Name                Date      Time      Status
    
```

A DISPSUM is shown in the following screen illustration:

```

PRGMCHK02          CEFCHECK Summary Report          YYYY/MM/DD HH:MM:SS
Source
Library . . . . . TEST
Name . . . . . COMPTEST
Composed . . . . . YYYY/MM/DD   HH:MM:SS
Changed . . . . . YYYY/MM/DD   HH:MM:SS
Replace
Library . . . . .
Name . . . . .
Composed . . . . .
Changed . . . . .
Options          Specified          Default
Comments . . . . .          COMMENTS=YES
Force compose . . . . .          FORCE=NO
Sequence . . . . .          SEQUENCE 10,10
Summary Statistics
Components . . . . .          Replace status . . . . .          NOC
Changed . . . . .          Compose required? . . . . .          NO
Errors . . . . .          Trigger record created? . . . . .          NO
CEFCRSI: End of summary report
    
```

7. Next, another Trigger Record Profile is shown in the following screen illustration for the CHECK function:

```

ETRGPROF          Trigger Record Profile
ACTION . . . . . CHECK
Source
  Library . . . . . TEST                      SeqNo . . . . . 00028
  Date request . . . . . YYYY/MM/DD   HH:MM:SS
  Status . . . . . ACTIVE
From
  Library . . . . . TEST
  Name . . . . . COMPTEST
  Description . . .
To
  Library . . . . .
  Name . . . . .
  Description . . .
Entry Options          Function Options
Immediate? . . . . . Y      Display status? . . . . . Y
Confirmation? . . . . . N
Addendum? . . . . . N
F3=EXIT  F6=EXECUTE  F8=SKIP  F12=CANCEL

```

8. The results of the execution of CHECK display because DISPSTAT was specified for CHECK. A DISPSTAT is shown 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 . . . . . : CHECK
Program
  Library . . . . . : TEST
  Name . . . . . : COMPTEST
Status
  Code . . . . . : BCK
  Message . . . . . : CONSISTENT
ENTER  F1=HELP  F3=EXIT  F12=CANCEL

```

9. Finally, an Eye Catcher panel indicates the end of trigger record execution is shown in the following screen illustration:

```
*****  
* BDFEXEC02 *  
*           MANTIS Batch Dialog Facility *  
* * * * *  
*   E n d   T r i g g e r   R e c o r d   E x e c u t i o n *  
* * * * *  
*****
```

## Sample MVS and DOS batch input streams

The following shows sample batch input streams for the MVS and DOS environments:

### (1) MVS Batch MANTIS job:

```
//JOB CARD HERE
//*
//CNTLSTEP EXEC PGM=MANTISB,REGION=8192K
//STEPLIB DD DSN=your.mantis52.linklib,DISP=SHR
//SETPRAY DD DSN=your.mantis.cluster,DISP=SHR
//yourEEPR DD DSN=your.eepr.cluster,DISP=SHR
//yourEDPR DD DSN=your.edpr.cluster,DISP=SHR
//yourETRG DD DSN=your.etrq.cluster,DISP=SHR
//yourEREF DD DSN=your.eref.cluster,DISP=SHR
//yourELOG DD DSN=your.elog.cluster,DISP=SHR
//CSOT DD DSN=your.csot.cluster,DISP=SHR
//SYSPRINT DD SYSOUT=*,DCB=BLKSIZE=133
//TERMINAL DD SYSOUT=*,DCB=BLKSIZE=133 <== can be changed
//PRINTER DD SYSOUT=*,DCB=BLKSIZE=133 to 'DUMMY' to
//SYSUDUMP DD SYSOUT=* reduce output
```

```
//KEYBOARD DD *
<PAGESIZE=60X132>;TEST;TEST;
<BLANK=ON>;<FAULT=ON>;<ECHO=OFF>;1
CONTROL: BATCH_DIALOG
|
FUNCTION=CREF
OPTIONS=DISPSUM
SELECT=*@
|
FUNCTION=EXECUTE
OPTIONS=NOKEEP,NOKEEPERROR
END
<PA2>
<PA2>
<PA2>
/*
//
```



---

Do not put numbers in columns 72 to 80 of the input stream.

---

**(2) DOS Batch MANTIS job:**

```

* $$ JOB
* $$ LST
// JOB MANTISB
// DLBL SETPRAY,'your.mantis.cluster',,VSAM
// DLBL EEPR,'your.eepr.cluster',,VSAM
// DLBL EDPR,'your.edpr.cluster',,VSAM
// DLBL ETRG,'your.etrp.cluster',,VSAM
// DLBL EREF,'your.eref.cluster',,VSAM
// DLBL ELOG,'your.elog.cluster',,VSAM
// ASSGN SYS011,SYSLST
// ASSGN SYS012,SYSLST
// ASSGN SYS010,IGN                                PARM FILE
// DLBL PARM,'your parm dummy',0,SD
// EXTENT SYS010
// LIBDEF PHASE,SEARCH=user's CICS library
// EXEC MANTISB,SIZE=AUTO
<PAGESIZE=60X132>;TEST;TEST;
<BLANK=OFF>;<FAULT=ON>;<ECHO=OFF>;1
CONTROL: BATCH_DIALOG
|
FUNCTION=CREF
OPTIONS=DISPSUM
SELECT=*@
|
FUNCTION=EXECUTE
OPTIONS=NOKEEP,NOKEEPERROR
END
<PA2>
<PA2>
<PA2>
/*
/&
* $$ EOJ

```

## Sample Transfer function MVS batch input stream

The following shows a sample batch input stream for the installation function. Comments display on the right side:

---

<PAGESIZE- 60X132>;MASTER;PASSWORD;	<i>Specifies the environment for the batch job, and chooses option 1 (Run a Program By Name); must be MASTER</i>
<BLANK=ON>;<FAULT=ON>;<ECHO=OFF>; 1	
CONTROL: BATCH_DIALOG	<i>----- Runs the CONTROL: BATCH_DIALOG program -----</i>
FUNCTION=TRANSFER	<i>Issues a TRANSFER</i>
USER=TEST	<i>----- User is TEST -----</i>
BIN=MYBIN, MYBINPASS	<i>----- Bin is MYBIN, bin password is MYBINPASS -----</i>
OPTIONS=IN	<i>----- Transfer in to MANTIS Cluster -----</i>
OPTIONS=ADD, NODATA, HISTORY	<i>----- Options may be stacked on same line -----</i>
TYPE=PROGRAM	<i>----- Specifies the entity type -----</i>
SELECT=PROG1	<i>----- Specifies PROG1 -----</i>
CHANGE THE NAME/PASSWORD	<i>----- Comment allowed -----</i>
SELECT=PROG2, MYPROG	<i>----- New name of PROG2 will be MYPROG -----</i>
OPTIONS=NEWPASS=MYPASS	<i>----- Specifies the new password for PROG2 is MYPASS -----</i>
SELECT=PROG3	<i>----- Specifies PROG3 -----</i>
	<i>----- Comment allowed -----</i>
FUNCTION=TRANSFER	<i>----- Issues a TRANSFER -----</i>
USER=TEST2	<i>----- User is TEST2 -----</i>
BIN=OTHERBIN	<i>----- Bin is OTHERBIN. Bin has no password -----</i>
OPTIONS=OUT	<i>----- Transfer out to Transfer file -----</i>
TYPE=SCREENS	<i>----- Specifies the entity type -----</i>
SELECT=SCREEN1	<i>----- Specifies SCREEN1 -----</i>
BIN=NEWBIN	<i>----- Bin is changed to NEWBIN. Bin has no password -----</i>
SELECT=SCREEN2	<i>----- Specifies SCREEN2 -----</i>
END	<i>----- ENDs the job stream -----</i>
<PA2>	<i>----- Issues CANCELs to end the program and logoff MANTIS -----</i>
<PA2>	

---

## Batch Dialog return codes for OS

The Batch Dialog Facility provides a return code (indicating a run status) in the OS environment. A list of the codes appears in the following table:

Code	Description
0	Successful run.
4	Warning that a specified entity (or entities) was not found or there was an inconsistent (HPO)CHECK, CEFCHECK or SQLCHECK. Process continues.
8	Failure to create one or more trigger records. Failure while executing a trigger record or executing an SQLBIND function. Failure in executing one or more functions. Examine output. Process continues.
12	Error raised on Syntax/Input Stream or necessary files unavailable for update. Job canceled. Input Validation Report was printed. Examine output.
16	System error. No program output was produced. Check for errors.
20	Out of input job stream data. Usually occurs when you place only one or no <PA2> at the end of the batch input stream to end the program. Verify that all functions were executed. Also check to make sure you have an END coded in the input stream.



# 9

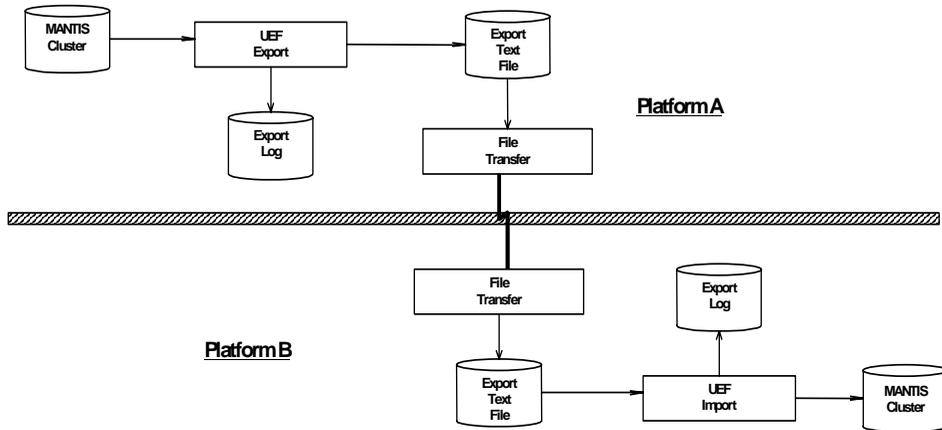
## Using export facilities

The Universal Export Facility (UEF) allows you to export and import one or more entities (such as, screens, files, programs, and views) from one MANTIS cluster to another. The MANTIS clusters can be on the same or different platforms.

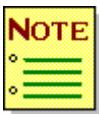
EXPORT transfers entities from the MANTIS cluster to the external file, and IMPORT transfers entities from the external file to the MANTIS cluster.

The following figure shows:

- ◆ The user on platform A exports entities to the empty export text file.
- ◆ Transfer of the export text file from platform A to platform B using your installation's preferred method.
- ◆ The user on platform B imports the export text file into the MANTIS cluster.



You import and export entities from the Universal Export Facility Menu. Some menu items are specific to IMPORT or EXPORT.



The composed indicator (@) is lost when you export/import a composed program.

---

## Using the Transfer Facility

You can use the Transfer Facility to assist UEF during the import process. The Transfer Facility uses entity selection and bins that can be useful to the designated MASTER or UEF user. One method of UEF administration is:

Before you begin:

1. (Both platforms) MASTER user creates a dedicated UEF user who has access to both the Transfer Facility and UEF.
2. Platform A users transfer entities to an empty UEF Transfer bin created by the MASTER or UEF user.
3. The MASTER or UEF user transfers this bin (or parts of it) into the empty libraries of the UEF user.

After entities are moved from platform A, UEF user libraries to platform B, UEF user libraries, using EXPORT and IMPORT:

1. The MASTER or UEF user on platform B creates an empty UEF bin and transfers entities from UEF user libraries to the UEF bin.
2. Platform B users transfer entities from the UEF bin into their libraries.



---

**Warning:** Because the export text file is a sequential file, UEF cannot prevent exporting two or more entities of the same type that have the same name. Thus, it is possible to have multiple versions of an entity in the export text file simultaneously. The problem becomes more evident during the IMPORT process. If you select the Add option from the UEF Menu and the entity does not yet exist in the target library, the first matching entity is successfully imported. Then the second and subsequent versions fail to be imported because the entity already exists. To prevent this problem, choose the Replace option from the UEF Menu and all versions of the matching entity are successfully imported, overlaying the previous version, with the last matching entity imported being the one in the library.

---

## Universal Export Facility menu

When you select the Universal Export Facility Option from the MANTIS Master Facility Selection Menu, is shown in the following screen illustration:

```
EXP001                MANTIS Universal Export Facility                YYYY/MM/DD HH:MM:SS

Direction (Imp/Exp) : EXP :
File Name : UEFCLU
Selection :
Create/Append (C/A) : A :

                                Add/Replace (A/R) : A :
                                : With Data (Y/N) : N :
                                : Directory (Y/N) : N :

                                Sel  Type of entity
                                :   : ALL
                                :   : SCREEN
                                :   : PROGRAM
                                :   : INTERNAL FILE
                                :   : PROMPTER
                                :   : EXTERNAL FILE
                                :   : INTERFACE
                                :   : SCENARIO
                                :   : TOTAL

F1=HELP  F4=VIEW LOG
```

---

**Direction (Imp/Exp)**

<b>Description</b>	<i>Required.</i> Specifies the direction of transfer.
<b>Options</b>	IMP Imports entities into the MANTIS file from an external file EXP Exports entities from the MANTIS file to an external file

---

**Add/Replace (A/R)**

<b>Description</b>	<i>Optional.</i> Specifies whether to Add or Replace the entities in the MANTIS file.
<b>Default</b>	A
<b>Options</b>	A Adds entities to the MANTIS file if they do not already exist. If they do exist in the MANTIS file, an error displays.  R Replaces entities in the MANTIS file if they already exist; adds entities to the MANTIS file if they do not exist.

**Considerations**

- ◆ This field is used only for IMPORT.
- ◆ If you select the option WITH DATA when replacing an existing internal file view, associated data is also replaced by the data in the export file. If you do not select the option WITH DATA when replacing, associated data is lost.

---

**File Name**

<b>Description</b>	<i>Required.</i> Specifies the external sequential file from which (IMPORT) or to which (EXPORT) you want the entity transferred.
--------------------	---

---

**With Data**

<b>Description</b>	<i>Optional.</i> Specifies whether to import/export the data of the internal file entities.
<b>Default</b>	N No
<b>Options</b>	N No Import/export file entity without data Y Yes Import/export file entity with data

**Consideration** This field applies to internal files only.

## Selection

**Description** *Optional.* Specifies the name of the single entity to import/export, for the type you select in the SEL field.

**Format** An entity name or a wild card expression

### Considerations

- ◆ Entering nothing imports/exports all entities of the selected type (SEL field).
- ◆ Specifying N for the field DIRECTORY exports all entities specified here. When you specify Y for the field DIRECTORY, you can select entities to export from the displayed portion of the directory.

---

## Directory

**Description** *Optional.* Specifies whether to display the directory of the selected entity type. From the directory, you can select entities to export.

**Default** N No

**Options** N No Does not display directory

Y Yes Displays directory

### Considerations

- ◆ This field is used only for EXPORT.
- ◆ Entering “Y” here and an entity name in the field SELECTION displays the part of the directory beginning with the specified name. However, entering a wild card expression in the field SELECTION displays only the relevant entities.

---

## Create/Append (C/A)

**Description** *Required.* Indicates whether entities are placed in a new external text file or appended to an existing external text file.

**Default** A Append

**Options** A Append to the existing export file

C Create new external text file (not available on IBM mainframe)

---

**Sel**

**Description**     *Required.* Selects the type(s) of entity to be imported/exported.

**Format**            S

**Considerations**

- ◆ You must select at least one of the types or “ALL”.
- ◆ If you select “ALL”, you cannot select any other types.
- ◆ Selecting “ALL” corresponds to selecting programs, screens, prompters, internal files, scenarios, interfaces, TOTAL views and external files.

---

**Message line**

**Description**     *Display.* When transfer of entities is complete or terminates, the Message Line displays the following informational messages:

Number of entities exported/imported

Number of data records exported/imported

Number of errors

Number of warnings

---

**F1=HELP**

**Description**     *Display.* Press F1 to view a series of Help panels.

---

**F4=VIEW LOG**

**Description**     *Display.* Press F4 to view the log. See “[View log](#)” on page 438 for more information on the VIEW LOG option.

## Export directory

When you choose the DIRECTORY Option in the Universal Export Facility Menu (see the screen illustration under the “**Universal Export Facility menu**” on page 432 ) and EXP, shown in the following screen illustration:

```

EXP002                Directory of PROGRAMS                YYYY/MM/DD
                   HH:MM:SS

Name of Design ====>

Sel----- Name ----- Status ---- Description ----->
ADV_TMP_SINGLE      TEMPLATE - SINGLE, INDEX F
ADV_TMP_SINGLE_DBM  TEMPLATE - SINGLE, DBM
ADV_TMP_SINGLE_DB2  TEMPLATE - SINGLE, DB2
ADV_TMP_SINGLE_DLI  TEMPLATE - SINGLE, DLI
ADV_TMP_SINGLE_INF  TEMPLATE - SINGLE, INTERFA
ADV_TMP_SINGLE_INFOX TEMPLATE - SINGLE, INFORMI
ADV_TMP_SINGLE_ORACLE TEMPLATE - SINGLE, ORACLE
ADV_TMP_SINGLE_PDM  TEMPLATE - SINGLE, PDM
ADV_TMP_SINGLE_RDM  TEMPLATE - SINGLE, INDEX F
ADV_TMP_SINGLE_SQLDS TEMPLATE - SINGLE, DB2
ADV_TMP_SINGLE_SUPRA TEMPLATE - SINGLE, SUPRA
ADV_TMP_SINGLE_SUPRA_EXT TEMPLATE - SINGLE, SUPRA E
ADV_TMP_TRN_MGMT    TEMPLATE - TRANSACTION MAN
ADV_USR_GENERATION  ADA II - EXAMPLE FOR USER
ADV_USR_LANGUAGE    ADA II - EXAMPLE TO SET LA

F1=HELP
    
```

To select or reposition the directory listing, enter the data in the fields as described below:

---

### Name of Design

<b>Description</b>	<i>Optional.</i> Specifies the new starting position of the directory.
<b>Format</b>	An entity name or wild card expression

---

### Sel

<b>Description</b>	<i>Optional.</i> Selects entities to export.
<b>Format</b>	S

**Consideration** When you enter a wild card expression in the field SELECTION (see the screen illustration under “[Universal Export Facility menu](#)” on page 432 ) for the directory, the default action selects (S) all entities displayed in the directory. You can omit an entity by erasing the “S” next to its name.

MANTIS supplies the following fields:

---

### Name

<b>Description</b>	Specifies the name of the entity.
--------------------	-----------------------------------

---

### Status

<b>Description</b>	Specifies the status message given on completion of the export process.
<b>Options</b>	ERROR An error occurred while exporting the entity EXPORTED Export successful

---

### Description

<b>Description</b>	Specifies the description of the entity specified in NAME.
<b>Consideration</b>	To see the full description, scroll right.

---

### F1=HELP

<b>Description</b>	<i>Display.</i> Press F1 to view a series of Help panels.
--------------------	---

When you select entities, press ENTER for export to begin.

To page through the directory, press ENTER or use the repoint option by entering an entity name or wild card expression in the field NAME OF DESIGN.

To return to the Universal Export Facility Menu (see the screen illustration under “**Universal Export Facility menu**” on page 432 ), press the CANCEL key.

## View log

When you select the PF4=VIEW LOG Option on the Universal Export Facility Menu (see the screen illustration under “**Universal Export Facility menu**” on page 432 ), the following screen displays.

View log is the only way you can see error messages and warnings that can occur during export or import. For explanations of the warnings and errors, refer to the *MANTIS Messages and Codes, OS/390, VSE/ESA, P39-5004*. This screen is informational, showing log messages and dates and times when messages were created shown in the following screen illustration:

```

                                UNIVERSAL EXPORT FACILITY LOG

1997/05/14 11:24:50 EXPE0BI:*** EXPORT START TO FILE MARXEXPC ***
1997/05/14 11:24:52 EXPE40I:Processing MASTER:PROMPTERS
1997/05/14 11:24:58 PROMPTER MASTER:TEST
1997/05/14 11:25:02 EXPE0CI:*** EXPORT END ***
1997/05/14 11:25:15 EXPE0BI:*** EXPORT START TO FILE MAJSUEFC ***
1997/05/14 11:25:16 EXPE40I:Processing MASTER:PROMPTERS
1997/05/14 11:25:18 PROMPTER MASTER:THIS_IS_A_TEST
1997/05/14 11:25:23 EXPE0CI:*** EXPORT END ***
1997/05/14 11:26:42 EXPE0BI:*** EXPORT START TO FILE MAJSUEFC ***
1997/05/14 11:26:43 EXPE40I:Processing MASTER:PROMPTERS
1997/05/14 11:26:55 PROMPTER MASTER:TEST
1997/05/14 11:26:59 EXPE0CI:*** EXPORT END ***
1997/05/14 11:27:29 EXPE0DI:*** IMPORT START FROM FILE MARXEXPC ***
1997/05/14 11:27:31 EXPE98I:Replaced PROMPTER TEST
1997/05/14 11:27:31 EXPE0EI:*** IMPORT END ***
1997/05/14 11:28:18 EXPE0BI:*** EXPORT START TO FILE MARXEXPC ***
1997/05/14 11:28:19 EXPE40I:Processing MASTER:SCREENS
1997/05/14 11:28:22 EXPE0CI:*** EXPORT END ***
1997/05/14 11:28:36 EXPE0BI:*** EXPORT START TO FILE MARXEXPC ***

CANCEL=TERMINATE  F7=PREV  F8=NEXT  F9=FIRST

```

To scroll through the log, press PF7 for the previous screen, PF8 for the next screen, PF9 for the first screen. You can scroll in either direction over 254 screens. If you scroll past the last screen and want to scroll back more than 254 screens, press PF9 to reposition the screen at the beginning of the log.



---

After the export/import occurs, the export text file and log file remain. You must delete these files frequently.

---

To return to the Universal Export Facility Menu (see the screen illustration under “[Universal Export Facility menu](#)” on page 432 ), press the CANCEL key.

---

## Platform to platform

After creating an export text file, you must transfer it to another platform using your installation's preferred method of platform-to-platform file transfer.

## UEF syntax

The Universal Export Facility lets you create or modify the export text file, which contains the following components:

- ◆ **PROGRAM.** See “[PROGRAM description](#)” on page 441.
- ◆ **SCREEN.** See “[SCREEN description](#)” on page 445.
- ◆ **Internal FILE.** See “[Internal FILE description](#)” on page 466.
- ◆ **Internal file DATA.** See “[Internal file DATA description](#)” on page 472.
- ◆ **PROMPTER.** See “[PROMPTER description](#)” on page 473.
- ◆ **External file ACCESS.** See “[External file \(ACCESS\) description](#)” on page 475.
- ◆ **SCENARIO.** See “[SCENARIO description](#)” on page 488.
- ◆ **ULTRA/TOTAL.** See “[ULTRA/TOTAL description](#)” on page 494.
- ◆ **INTERFACE.** See “[INTERFACE description](#)” on page 503.

## PROGRAM description

The following description defines the syntax for programs:

---

```

PROGRAM program_name(
    [PASSWORD=password]
    [DESCRIPTION=description]
    [ATTRIBUTES(pgr_attr[,pgr_attr...])]
    [SQL_OWNER_NAME=sql_owner_name]
    [SQL_MODULE_NAME=sql_module_name]
    [UNDEFINED_VARIABLES=undefined_vars]
    LINES(
        [line]...
    )
)

```

---

### program\_name

<b>Description</b>	Specifies the name of the program.
<b>Format</b>	1–30 character existing MANTIS program name

**password**

- Description** Specifies the password for the program.
- Format** 0–16 character password for the specified program

**description**

- Description** Specifies the description of the program.
- Format** 0–48 characters

**pgr\_attr**

- Description** Specifies the attributes of the program.

**Options**

Attribute	VAX	UNIX	PC	IBM
BOUND	✓	✓	✓	
ALPHANUMERIC	✓	✓		
HPO_BOUND				✓
SQL_BOUND				✓
EXTENDED_DYNAMIC				✓
STATIC				✓
DYNAMIC				✓
SUPRA				✓
DB2				✓
SQL/DS				✓
REPLACE				✓
REVOKE				✓
BLOCK				✓

- ◆ BOUND Export bound the program and therefore you find it bound on import.
- ◆ ALPHANUMERIC The type of string comparison used by the relational operator in the program.
  - If you specify ALPHANUMERIC—Strings always compare up to the shorter length; however, if the strings are equal up to this length, the longer string is greater.
  - If you do not specify ALPHANUMERIC—String lengths compare to determine which string is greater. Only if the lengths are equal are the strings compared for equality.
- ◆ HPO\_BOUND The program was HPO bound on export and therefore is HPO bound on import.
- ◆ SQL\_BOUND The program was SQL bound on export and therefore is SQL bound on import. DB2 and DB2 for VSE and VM (formerly SQL/DS) environments only.
- ◆ EXTENDED\_DYNAMIC Represents the type of SQL binding. Works with the SQL\_BOUND attribute.
- ◆ DYNAMIC Represents the type of SQL binding. Works with the SQL\_BOUND attribute.
- ◆ STATIC Represents the type of SQL binding. Works with the SQL\_BOUND attribute.
- ◆ SUPRA Represents the type of database environment.
- ◆ DB2 Represents the type of database environment. Works with the SQL\_BOUND attribute.
- ◆ SQL/DS Represents the type of database environment. Works with the SQL\_BOUND attribute.
- ◆ REPLACE A preprocess option used with the SQL\_BOUND attribute.
- ◆ REVOKE A preprocess option used with the SQL\_BOUND attribute.
- ◆ BLOCK A preprocess option used with the SQL\_BOUND attribute.

**sql\_owner\_name (IBM only)**

<b>Description</b>	Specifies the owner name of the SQL module for the SQL bound program.
<b>Format</b>	1–8 character SQL owner name

---

**sql\_module\_name (IBM only)**

<b>Description</b>	Specifies the corresponding module name for the SQL bound program.
<b>Format</b>	1–8 character SQL module name

---

**undefined\_vars (IBM only)**

<b>Description</b>	Specifies a preprogram option for what will be done if undefined variables are encountered during the SQL bind.
<b>Default</b>	1
<b>Format</b>	Number in the range 1–3 (see <i>MANTIS DB2 Programming, OS/390, VSE/ESA</i> , P39-5028).

---

**line**

**Description** Specifies a line number of the program.

**General considerations**

- ◆ Each PROGRAM description must be on a separate line.
- ◆ The closing parenthesis for LINES must be on a separate line.

## SCREEN description

The following description defines the syntax for screens:

---

```
SCREEN screen_name(  
    [LANGUAGE=language]  
    [DEVICE(dev_row,dev_col)]  
    [DESCRIPTION=description]  
    [PASSWORD=password]  
    [DOMAIN(dom_row,dom_col)]  
    [ATTRIBUTES(map_attr[,map_attr ...])]  
    [MASK_CHAR=mask_char]  
    [FILL_CHAR=fill_char]  
    [FIELD field_name((row,col),size[,field_attr[,field_attr...]])]  
    [VERTICAL(v_repeats,v_displacement)]  
    [HORIZONTAL(h_repeats,h_displacement)]  
    [COLOR=color]  
    [MASK=mask]  
    [VALIDATION(  
        [DEFAULT=default_value]  
        [LOW_RANGE=low_range]  
        [HIGH_RANGE=high_range]  
        [VARIABLE=dynamic_valid_variable_name]  
        [LIST_ITEMS(item[,item...])]  
        [ROUTINE=routine_name]  
    )]  
    ]...  
)
```

---

---

**screen\_name**

- Description** Specifies the name of the screen.
  - Format** 1–30 character MANTIS screen name
- 

**language (VAX/VMS, UNIX and PC only)**

- Description** Specifies the language of the screen.
  - Format** 1–15 character language for a given MANTIS system
- 

**dev\_row,dev\_col (VAX/VMS, UNIX only)**

- Description** Specifies the number of rows/columns of the output device that displays the screen.
  - Default** (24, 80)
  - Options** (43, 80) (32, 80) (27, 132) (24, 132) (24, 80)
- 

**description**

- Description** Specifies the description of the screen.
  - Format** 0–48 character MANTIS screen description
- 

**password (IBM only)**

- Description** Specifies the screen password.
  - Format** 1–16 character MANTIS screen password
- 

**dom\_row,dom\_col**

- Description** Specifies the domain (size) of the screen in terms of rows and columns.
- Options** (1–255, 2–255)

**map\_attr**

**Description** Specifies the attribute(s) of the screen.

**Default** See defaults in table below.

**Options** For paired attributes in the following table, if both are in the list of attributes specified in the EXPORT file, the last one takes effect. For example, if PBO displays after BOT in the list EXPORT file, then PBO takes effect.

On	Off	Default	VAX/VMS	UNIX	PC	IBM
ALA	NOA	NOA	✓	✓	✓	✓
ALK			✓	✓	✓	
AUW		AUW	✓	✓	✓	
FUL	NOF	NOF	✓	✓	✓	✓
	NFS		✓	✓	✓	
WIN	NHW/NVW	WIN	✓	✓	✓	
OPA			✓	✓	✓	✓
PBO	BOT	BOT	✓	✓	✓	✓

- ◆ **ALA-NOA Alarm.** Controls the sounding of the terminal alarm (bell) whenever the MANTIS CONVERSE statement displays a screen.
  - ALA—Sounds the terminal alarm (bell) whenever the MANTIS CONVERSE statement displays a screen.
  - NOA—Displays the screen without sounding the terminal alarm (bell).
- ◆ **ALK Align DBCS.** Aligns all Double Byte Character Set fields on the screen.
- ◆ **AUW Automatic Window.** Indicates that the viewing window will move when you tab to a field outside the current view.
- ◆ **FUL-NOF Full Display.** Controls the use of the input screen during a CONVERSE statement. The input screen consists of two lines that normally display over the last two lines of the physical display. The default screen domain size in Screen Design is 22 rows in length; the input screen displays without overlaying the screen design.

MANTIS uses the first line of the input screen to display field validation error messages and to display the cursor or window coordinates on the far right of the line (also called the window map). The second line of the input screen consists of the unsolicited input field and the reply field on the far right of the line.

- FUL—Inhibits display of the input screen on a CONVERSE statement and frees the bottom two lines of the physical display for use by Screen Design. To use any of the input screen fields, use the INPUTMAP terminal function during a CONVERSE to toggle the display of the input screen over the bottom two lines of the physical display.



---

The IBM environment does not have an INPUTMAP terminal function.

---

- NOF—Displays the input screen on a CONVERSE statement. The input screen overlays your screen design if it extends into the last two lines of the physical display.
- ◆ **NFS No field separators.** Do not precede each field by a field separator.
- ◆ **WIN-NHW/NVW Windowing.** Permits vertical and horizontal windowing.
  - WIN—Permits both horizontal and vertical windowing.
  - NHW (No Horizontal Windowing)—Disables horizontal windowing for the screen. When the windowing terminal functions, WINLEFT and WINRIGHT, are executed during a CONVERSE statement, the screen maintains its position in the physical display.

The map floats horizontally in the logical display so that its position in the physical display does not change by the horizontal terminal windowing functions. A map with this attribute is a floating map. NVW (No Vertical Windowing) disables vertical windowing for the screen. When the windowing terminal functions, WINUP and WINDOWN, are executed on a CONVERSE statement, the map maintains its position in the physical display. The map floats vertically in the logical display so that its position in the physical display does not change by the vertical terminal windowing functions.



---

The IBM environment does not have WINUP and WINDOWN terminal functions.

---

- ◆ **OPA Opaque.** The map occludes other maps in the map set that it overlays. All displayable data and spaces in the entire domain of the map overlay all data conceptually beneath this map in the map set. Maps overlay each other in the map set according to the order in which they are displayed onto the map set. If a map is not opaque, all spaces within its domain can have data from underlying maps showing through when you display the map set.
- ◆ **PBO—BOT Protect.** Controls the use of the input screen during a CONVERSE statement.
  - PBO—Protects the bottom line of the input screen (the bottom line of the physical display) against data entry. The terminal alarm (bell) sounds if you try to enter data into either the unsolicited input field or the reply field. You cannot tab to either of these fields.
  - BOT—Allows data entry into the bottom line of the input screen. The unsolicited input and reply fields of the input screen allow data input, provided that you display the input screen (see FUL—NOF for more information).

---

### mask\_char

- Description** Specifies the mask character used on the screen.
- Default** IBM, SNI—The character specified in the Customization Macro or the character specified in Screen Design when the screen was saved.
- VAX/VMS, UNIX, PC—The mask character as specified for the user.

---

### fill\_char

- Description** Specifies the fill character used on the screen.
- Default** IBM, SNI—The character specified in the Customization Macro or the character specified in Screen Design when the screen was saved.
- VAX/VMS, UNIX, PC—The fill character as specified for the USER.

---

### field\_name

- Description** Specifies name of the field.
- Format** 1–30 character MANTIS symbolic name
- Considerations**
- ◆ Field descriptors **MUST** appear in row column order.
  - ◆ A zero-length field name can be used only for heading (title) fields, for example, those fields with an attribute of HED. (See field\_attr below.)

---

### row,col

- Description** Specifies the position of the field on the screen in terms of rows and columns.
- Format** (1–255, 2–255) for all operating environments or (1–255, 1–255) on PC, VAX/VMS and UNIX with the map\_attr NFS specified (see map\_attr above).

---

### size

- Description** Specifies the length of the field in characters.
- Format** Integer greater than 1 and less than or equal to the number of columns in the domain (see dom\_col above).

**field\_attr**

**Description** Specifies attributes of the field.

**Default** See table below.

**Options** In the following list of options, if an attribute is one of a pair and both appear in the list of field attributes supplied in the EXPORT file, then the one appearing last takes effect. For example, if AUT displays after NAU in the list, AUT takes effect. This rule also applies to groups of attributes such as the colors.

On	Off	Default	VAX/VMS	UNIX	PC	IBM
AUT	NAU	AUT	✓	✓	✓	✓
B01			✓	✓		
B02			✓	✓		
B03			✓	✓		
B04			✓	✓		
B05			✓	✓		
B06			✓	✓		
B07			✓	✓		
B08			✓	✓		
B09			✓	✓		
B10			✓	✓		
B11			✓	✓		
B12			✓	✓		
B13			✓	✓		
B14			✓	✓		
B15			✓	✓		
BBL			✓	✓		
BBR			✓	✓		
BBT			✓	✓		
BLI	NOB	NOB	✓	✓	✓	✓
BLT			✓	✓		

On	Off	Default	VAX/VMS	UNIX	PC	IBM
BMH			✓	✓		
BMI			✓	✓		
BMV			✓	✓		
BRI	NOR	NOR	✓	✓	✓	✓
BRT			✓	✓		
BTL			✓	✓		
BTR			✓	✓		
BTT			✓	✓		
CUR			✓	✓	✓	✓
DEF			✓	✓	✓	✓
DET	NOD	NOD	✓	✓	✓	✓
DHE	SHE	SHE	✓	✓	✓	
DWI	SWI	SWI	✓	✓	✓	
FIL			✓	✓	✓	✓
FSV			✓	✓		
HED			✓	✓	✓	✓
HID	NOR	NOR	✓	✓	✓	✓
HIG	NOH	NOH	✓	✓	✓	✓
KAN			✓	✓	✓	✓
LBA	NOL	NOL	✓	✓	✓	✓
LIS			✓	✓	✓	
MAS			✓	✓	TXT	✓
MIX			✓	✓		
MOD	UNM	UNM	✓	✓	✓	✓
MSG	NMS	NMS	✓	✓		
NUM			✓	✓	✓	✓
PIO	UNP	UNP	✓	✓	PRO	PRO
PRO	UNP	UNP	✓	✓	✓	✓
OVE	NOO	NOO	✓	✓	✓	✓

On	Off	Default	VAX/VMS	UNIX	PC	IBM
	RAN		✓	✓	✓	✓
RBA	NRB	NRB	✓	✓	✓	✓
	REQ		✓	✓	✓	✓
REV	VID	VID	✓	✓	✓	
RFF	VID/REV	VID	✓	✓	REV	
	RTN		✓	✓		
	SDE		✓	✓	✓	✓
	TXT	TXT			✓	✓
UFF	NOU/UND	NOU	✓	✓	UND	
UND	NOU	NOU	✓	✓	✓	✓
UPP	LOW	LOW	✓	✓	✓	✓
	VAR		✓	✓	✓	
	VNA		✓	✓	✓	
???	NOC	NOC	✓	✓	✓	✓
???	NO	NO				✓

\*??? represents a color value.

- ◆ **AUT-NAU Autoskip.** Controls the cursor when you enter data in the rightmost position of a field.
  - AUT—Causes automatic tabbing to the next input data field.
  - NAU—Leaves the cursor one column beyond the right of the field.

Any attempt to enter data at this position usually is an error and a terminal alarm (bell) flags it.

- ◆ B01—B15 are box characters with a plus (+) sign base. The following list describes each character in terms of the plus sign:
  - 1 Left end of horizontal line
  - 2 Bottom end of vertical line
  - 3 Left corner
  - 4 Right end of horizontal line
  - 5 Horizontal bar
  - 6 Bottom right corner
  - 7 Bottom T-char
  - 8 Top end of vertical line
  - 9 Top left corner
  - 10 Vertical bar
  - 11 Left T-char
  - 12 Top right corner
  - 13 Top T-char
  - 14 Right T-char
  - 15 Cross
- ◆ **BBL Box Bottom Left.** Bottom-left-hand corner of a box.
- ◆ **BBR Box Bottom Right.** Bottom-right-hand corner of a box.

- ◆ **BBT Box Bottom T.** Vertical T.
- ◆ **BLI-NOB Blinking.** Controls the blinking (flashing) display attribute of a field.
  - BLI—Displays the field blinking.
  - NOB—Displays the field not blinking.
- ◆ **BLT Box Left T-char.** T character on its side with the top on the left (|-).
- ◆ **BMH Box Middle Horizontal.** Horizontal bar ( \_ ).
- ◆ **BMI Box Middle Intersection.** Intersection character ( + ).
- ◆ **BMV Box Middle Vertical.** Vertical bar ( | ).
- ◆ **BRI-NOR Bright.** Controls the intensity of the display.
  - BRI—Displays the field in bright (bold) intensity.
  - NOR—Displays the field in normal intensity.
- ◆ **BRT Box Right T-char.** T character on its side with the top on the right (-|).
- ◆ **BTL Box Top Left.** Top-left-hand corner of a box.
- ◆ **BTR Box Top Right.** Top-right-hand corner of a box.
- ◆ **BTT Box Top T-char.** T character correct side up ( T ).
- ◆ **CUR Cursor.** Controls the initial placement of the cursor when the MANTIS CONVERSE statement displays a screen. Specify CUR to display the cursor in the specified field on the screen.
- ◆ **DEF Default.** Indicates a specified default value.

- ◆ **DET–NOD Detectable.** Indicates the field is detectable by light pen.
  - DET—Makes the field detectable by light pen.
  - NOD—Makes the field undetectable by light pen.
- ◆ **DHE–SHE Double Height.** Specifies whether the field displays in double-height mode.
  - DHE—Displays the field in double-height mode.
  - SHE—Displays the field in single-height mode.
- ◆ **DWI–SWI Double Width.** Specifies whether the field displays in double-width mode.
  - DHE—Displays the field in double-width mode.
  - SHE—Displays the field in single-width mode.
- ◆ **FIL Fill.** Fills the entire field on data entry during a CONVERSE statement. Unless you fill the field's display area entirely with data characters, using blank padding if necessary, the field is invalid, an error message displays, and you must correct it.
- ◆ **FSV Field Sensitive Validation.** Validates dynamically when modified (by data-entry) and the cursor moves out by a tabbing or cursor movement function, or you perform a process function key operation (except for the CANCEL key). Validation occurs if the field has some extended edit validation attributes or is a numeric field (alphabetic characters are invalid). The CONVERSE statement termination validates a field with validation attributes. (Unless it has the FSV attribute and is already validated dynamically since last modified during the CONVERSE.)
- ◆ **HED Heading.** Indicates the field is a heading.

- ◆ **HID–NOR Hidden.** Controls the visibility of a field.
  - HID—Displays blanks instead of field data.
  - NOR—Displays field data in normal intensity. You can also use BRI to turn off the HID attribute.
- ◆ **HIG–NOH Highlight.** Specifies field highlighting.
  - HIG—Highlights the field using bold or underline, whichever highlighting method is best and supported by the terminal in use.
  - NOH—Turns off the HIG attribute.
- ◆ **DBC DBCS.** Indicates that the data type of the field is double-byte character set.
- ◆ **LBA–NOL Left Bar.** Displays a vertical bar on the left edge of the field.
  - LBA—Displays a vertical bar on the left edge of the field.
  - NOL—Displays no vertical bar on the left edge of the field.
- ◆ **LIS Valid List.** Indicates the field has a fixed validation list specified during screen design. A fixed validation list displays values, one of which must equal the value of the field before the CONVERSE statement accepts it. Unless the field's value equals one of the fixed list values, CONVERSE finds the field invalid, reports an error message, and requires you to correct it.
- ◆ **MAS Masked.** Indicates the field has a numeric edit mask (specified during screen design). The numeric edit mask specifies the number's display format as well as the rules for number specification during data entry.
- ◆ **MIX Mixed–CCB, PC.** Indicates that the data type of the field is mixed (e.g., the field can contain both DBCS and text characters). IBM—indicates that the field has double byte character support.

- ◆ **MOD–UNM Modified.** Indicates that the field is modified.
  - MOD—Marks the field as modified.
  - UNM—Does not mark the field (initially) as modified.
- ◆ **MSG–NMS Message.** Specifies which field displays MANTIS system messages such as Field Validation error messages. MSG nominates that field to display MANTIS messages during a CONVERSE statement. When a field has the MSG attribute, the MSG attribute resets on all other fields on the screen. MSG also sets PRO, which protects the field from user input. A TEXT data field (TEXT or MIXED data field for DBCS MANTIS) sets the MSG attribute. NMS Resets the MSG and PRO attributes (note that NMS is effective only on fields that have the MSG attribute).

During a CONVERSE operation, the following steps determine the message field:

1. The map set searches for a field with the MSG attribute that is visible to the terminal display, for example, screen, but not fully overlaid by another field. The active map (the map most recently added to the map set) is searched, then the map below it, and so on until the map set finds a visible message field.
  2. If no visible MSG field exists, then it uses the message field of the CONVERSE input map.
  3. If the input map is not visible (e.g., because the active map has the FULL DISPLAY attribute), the message does not display.
- ◆ **NUM Numeric.** Indicates that the data type of the field is numeric.
  - ◆ **PIO–UNP Protected Input Only.** Controls the ability to enter data in a screen field. PIO protects the field from any data entry. You tab into a protected field from input only, but you do not enter data into the field. MANTIS sounds the terminal alarm (bell) if you try to enter data into a field protected from input only. UNP allows tabbing and data entry into the field.

- ◆ **PRO-UNP Protected.** Controls access to a screen field. PRO protects the field from being tabbed into and from any data entry. You can use the terminal cursor functions to place the cursor in a protected field, but you cannot enter data into the field. MANTIS sounds the terminal alarm (bell) if you try to enter data into a protected field. UNP allows tabbing and data entry into the field.
- ◆ **OVE-NOO Overline.** Indicates overline displays on the top edge of the field.
  - OVE Displays overline on the top edge of the field.
  - NOO Displays no overline on the top edge of the field.
- ◆ **RAN Range.** Indicates the field has low-high range checking. Screen design specifies the low and high values. If a value outside the specified range displays in the field, CONVERSE finds the field invalid, reports an error message, and requires you to correct it.
- ◆ **RBA-NRB Right Bar.** Displays a vertical bar on the right edge of the field.
  - RBA—Displays a vertical bar on the right edge of the field.
  - NRB—Does not display a vertical bar on the right edge of the field.
- ◆ **REQ Required.** Requires the field to have a nonzero (numeric) or non-null (text) value. Otherwise, MANTIS finds the field invalid, reports an error message, and requires you to correct it.
- ◆ **REV-VID Reverse.** Controls the reverse video display attribute of a field. The attribute is effective only over the current data length of the field, not the field's maximum displayable length.
  - REV—Displays the field's data in reverse video (e.g., the reversed background and character colors). On a black and white terminal with a black background, the field displays as black letters on a white background.
  - VID—Displays the field's data in normal video, using the default background color.

- ◆ **RFF–VID Reverse Full Field.** Controls the reverse video display attribute over the entire screen field length. The REV attribute affects data displayed in the field.
  - RFF—Displays the entire screen field in reverse video, regardless of the contents of the field.
  - VID—Displays the field in normal video mode. REV changes from full field reverse to normal (data only) reverse video display.
- ◆ **RTN Validation Routine.** Indicates the field has a descriptor ROUTINE specified validation routine.
- ◆ **SDE Show Default.** Displays the field's default value if the field has a value of zero (numeric) or the null string (text). If not specified, the rules of the DEF attribute still apply, but you do not see the default value display during the initial CONVERSE of the map.
- ◆ **SOI SO/SI.** Indicates that the DBCS (Double Byte Character Set) and EBCDIC characters reside concurrently in a text variable (mixed-data type support).
- ◆ **TXT Text.** Indicates that the data type of the field is text.
- ◆ **UFF–NOU Underline Full Field.** Controls field underlining over the entire screen field length. The UND attribute affects only the data displayed in the field.
  - UFF—Displays the entire screen field with underlining, regardless of the contents of the field.
  - NOU—Displays the field without any underlining. UND changes from full field underlining to normal (data only) underlining.
- ◆ **UND–NOU Underline.** Controls the underlining display attribute of a field. The attribute is effective only over the current data length of the field, not the field's maximum displayable length.
  - UND—Displays the field's data with underlining.
  - NOU—Displays the field without any underlining.

- ◆ **UPP-LOW Uppercase.** Controls uppercase conversion during data entry into a screen field. UPP converts lowercase to uppercase during data entry. Lowercase characters display if assigned to the field by the MANTIS program. This attribute only affects data entry during a CONVERSE.
- ◆ **LOW.** Enters lowercase characters into the field during a MANTIS CONVERSE. This attribute does not convert any characters from uppercase to lowercase.
- ◆ **VAR Valid Variable.** Indicates the field has a validation variable specified. The validation variable name is a scalar or array variable containing one or more values for the field. If the field's value does not equal one of the options specified by the variable (nor in a fixed validation list, if specified), MANTIS finds the field invalid, reports an error message, and requires you to correct it.
- ◆ **VNA Valid Name.** Indicates a valid MANTIS symbolic name is required for the field. This attribute is only effective for text fields. If the field's value does not obey the rules for a valid MANTIS symbolic name, MANTIS finds the field invalid, reports an error message, and requires you to correct it.

**Consideration** When the IBM attributes LBA, RBA, and OVE combine with UND, the result is a BOXED field in MANTIS for IBM. Boxing in MANTIS for the PC, VAX, UNIX is completely different and is not compatible with MANTIS for IBM mainframe.

---

### v\_repeats

<b>Description</b>	Specifies the number of additional vertical repeats of the field (not the total number of occurrences).
<b>Format</b>	Any integer that does not result in field overlap
<b>Default</b>	0

---

### v\_displacement

<b>Description</b>	Specifies the spacing between vertical repeats of the field.
<b>Format</b>	Any integer that does not result in field overlap
<b>Default</b>	0

---

### h\_repeats

<b>Description</b>	Specifies the number of additional horizontal repeats of the field (not the total number of occurrences).
<b>Format</b>	Any integer that does not result in field overlap
<b>Default</b>	0

---

### h\_displacement

<b>Description</b>	Specifies the spacing between horizontal repeats of the field. For example, to repeat a 3-character field with two characters between fields, you specify a displacement of 5.
<b>Format</b>	Any integer that does not result in field overlap
<b>Default</b>	0

---

**color**

<b>Description</b>	Specifies the color used to display the field.
<b>Format</b>	Full keyword or its 3-character equivalent
<b>Default</b>	NOC (CCB), NO (IBM)
<b>Options</b>	BLU Blue RED Red PIN Pink GRE Green TUR Turquoise YEL Yellow NEU Neutral C00–C15

**Considerations**

- ◆ Color specified here overrides any color specified in the field attribute list.
- ◆ Options C00–C15 are not valid in the IBM environment.

## mask

- Description** Specifies the edit mask for the field or a heading literal.
- Format** A quoted valid edit mask or heading literal no longer than the size of the field

### Considerations

- ◆ If you supply an edit mask, you must set the field attribute MAS.
- ◆ If you supply a heading literal , you must set the field attribute HED.
- ◆ For more information, see “[Edit characters and edit masks](#)” on page 72.

---

## default\_value

- Description** Specifies the value in the field when the screen displays.
- Format** String no greater in length than the length of the field

### Considerations

- ◆ To display the default value of the field, set field\_attr to SDE.
- ◆ If you supply a default value, you set the field attribute DEF.

---

## low\_range

- Description** Specifies the value used as a low range check for validity. That is, any data you enter in the field that falls below this value is invalid.
- Format** Any value that matches the edit mask for the field
- Consideration** If you specify low\_range and/or high\_range, you must set the field attribute RAN.

---

**high\_range**

- Description** Specifies the value used as a high range check for validity. Any data you enter in the field that is above this value is invalid.
- Format** Any value that matches the edit mask for the field
- Consideration** If you specify low\_range and/or high\_range, you must set the field attribute RAN.

---

**dynamic\_valid\_variable\_name (VAX/VMS, UNIX and PC only)**

- Description** Specifies the MANTIS variable to verify the contents of the field.
- Format** MANTIS symbolic name
- Consideration** If you specify a dynamic\_valid\_variable\_name, you must specify the field attribute VAR.

---

**item (VAX/VMS, UNIX and PC only)**

- Description** Specifies the list of values against which you check the data entered into the field.
- Format** A value that matches the type and length of the field
- Consideration** If you specify the number\_of\_list\_items, you must set the field attribute LIS.

---

**routine (VAX/VMS and UNIX only)**

- Description** Specifies the MANTIS routine used to check the validity of data in the field.
- Format** 1–30 character MANTIS symbolic name
- Consideration** If you specify routine, you must set the field attribute RTN.

**General consideration**

Field descriptors must be in row, column order for UEF Screen Description.

## Internal FILE description

The following description defines the syntax for internal file descriptions:

---

```
FILE file_name(  
    [DESCRIPTION=description]  
    [VIEW_PASSWORD=view_password]  
    [ALTER_PASSWORD=alter_password]  
    [INSERT_PASSWORD=insert_password]  
    [STATUS=status]  
    [RECORD_LAYOUT=layout_name]  
    [FIELD field_name(  
        TYPE=field_type  
        [ATTRIBUTES(field_attr)]  
        [DIMENSIONS(dim_left,dim_right)]  
    )]  
    ...  
)
```

---

---

**file\_name**

**Description** Specifies the name of the internal file.

**Format** 1–16 character internal file name

---

**description**

**Description** Specifies the description of the internal file.

**Format** 0–58 characters

---

**view\_password**

**Description** Specifies the password that enables viewing of records in the file.

**Format** 0–16 character MANTIS password

---

**alter\_password**

**Description** Specifies the password that enables updating of records in the file.

**Format** 0–16 character MANTIS password

---

**insert\_password**

**Description** Specifies the password that enables inserting and deleting of records in the file.

**Format** 0–16 character MANTIS password

---

**status**

**Description** Specifies the status of the file.

**Format** 1–8 character string

**Options** ACTIVE status required to be ACTIVE if the internal file is to access from a MANTIS program. Anything other than ACTIVE prevents access to the internal file from a MANTIS program.

### layout\_name

**Description** Specifies the name of an existing internal file.

**Format** 1–16 character internal file name

#### Considerations

- ◆ Fields specified must exactly match the fields of the lowest associated record layout. For example, if you specify A in the export file, and A has an associated record layout of B, and B in turn has an associated record layout of C, then the fields specified for A are the fields of C.
- ◆ On IMPORT:
  - If any associated record layout in the associated record chain does not exist, then the internal file does not import. Using the example in consideration 1 above, B and C must exist and B must have an associated record layout of C before A is imported.
  - If the associated record layout specified does exist, then the fields specified must match exactly those of the lowest associated record layout. If the fields do not match, then the internal file will not import.

---

### field\_name

**Description** Specifies the name of a field of the internal file.

**Format** 1–16 character MANTIS symbolic name

**field\_type**

**Description** Specifies the data type of the field.

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
TEXT	✓	✓	✓	✓
BIG	✓	✓	✓	✓
SMALL	✓	✓	✓	✓
MIXED	✓	✓	TEXT	TEXT
DBCS	✓	✓	✓	✓

- ◆ TEXT Alphanumeric field
- ◆ BIG Numeric field for large numbers (recommended when using decimals)
- ◆ SMALL Numeric field for small numbers (recommended when using integers)
- ◆ MIXED Field of mixed DBCS and TEXT data
- ◆ DBCS Double byte character set field

**field\_attr**

**Description** Specifies the attributes of the field.

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
TEXT	✓	✓	✓	✓
SCRAMBLED	✓	✓	✓	✓

- ◆ KEY Indicates that the field is the key of the record
- ◆ SCRAMBLED Indicates that the data for the field is to be scrambled when stored, and unscrambled when used by a program

**Considerations**

- ◆ You must specify the KEY attribute for the first field of the record layout. The key length cannot exceed 32 characters. You can specify KEY on any contiguous fields to follow, as long as the total length does not exceed 32 characters.
- ◆ You can only specify SCRAMBLE as an attribute on any non-KEY field.
- ◆ You can assign only one attribute to any one field.

---

**dim\_left,dim\_right**

**Description** For field types of BIG and SMALL, dim\_left indicates the number of rows in a 2-dimensional array or 0 in a 1-dimensional array. Dim\_right indicates the number of columns in a 2-dimensional array or the number of occurrences in a 1-dimensional array. For field types of TEXT, MIXED and DBCS, dim\_left is the number of occurrences of this field in a list or 0 if the field is not in a list. Dim\_right indicates the length of each occurrence in a list or the length of the field if the field is not in a list.

**Format** Integer,Integer

**Options** TEXT fields 0–255, 1–255  
NUMERIC fields 0–255, 0–255

**Considerations**

- ◆ You must specify this descriptor for field types TEXT, DBCS and MIXED.
- ◆ Fields with an ATTRIBUTE of KEY cannot be arrays.

**General consideration**

Field descriptors must appear in order (field\_1 followed by field\_2, and so on) for the UEF Internal File Description.

## Internal file DATA description

The following description defines the syntax for internal file data:

---

```
DATA file_name([file_data,...]
)

```

---



---

### file\_name

<b>Description</b>	Specifies the name of the internal file.
<b>Format</b>	1–16 character valid internal file name for which there is an internal file description prior to this data description in the EXPORT File

---

### file\_data

<b>Description</b>	Specifies the data corresponding to the prior internal file description.
<b>Format</b>	comma-separated list of data for the internal file, matching the data type for the fields and presented in record order, for example, record 1 field 1, record 1 field 2, record 2 field 1, record 2 field 2 ...

### Considerations

- ◆ TEXT, DBCS, and MIXED data must follow the rules for strings (see Notation Conventions in the front of this manual).
- ◆ The trailing comma must be included.

### General considerations

- ◆ For each data description, there must be an equivalent internal file description immediately prior to the data description.
- ◆ The imported data goes to the same user as specified in the associated internal file description.

## PROMPTER description

The following description defines the syntax for prompters:

---

```

PROMPTER prompter_name(
    [LANGUAGE=language]
    [PASSWORD=password]
    [DESCRIPTION=description]
    [NEXT_PROMPTER=next_prompter_name]
    LINES(
    [line])...
    )
  
```

---

### **prompter\_name**

<b>Description</b>	Specifies the name of the prompter.
<b>Format</b>	1–16 character MANTIS prompter name

### **language (VAX/VMS, UNIX and PC only)**

<b>Description</b>	Specifies the language of the screen.
<b>Format</b>	1–30 character valid language for a given MANTIS system
<b>Default</b>	English

### **password**

<b>Description</b>	Specifies the prompter password.
<b>Format</b>	1–16 character MANTIS prompter password
<b>Default</b>	IBM—user name

---

## description

**Description** Specifies the description of the prompter.

**Format** 0–48 character MANTIS prompter description

---

## line

**Description** Specifies a prompter line.

**Format** 0–48 character string

### General considerations

The layout of the prompter description is:

- ◆ The closing parenthesis for the LINES descriptor must be on a separate line.
- ◆ Each prompter line must be on a separate line.

## External file (ACCESS) description

The following defines the syntax for external file ACCESS:

---

```

ACCESS access_name(
  [DESCRIPTION=description]
  [VIEW_PASSWORD=view_password]
  [ALTER_PASSWORD=alter_password]
  [INSERT_PASSWORD=insert_password]
  [SHARE_PASSWORD=share_password]
  [STATUS=status]
  [ATTRIBUTES(access_attr[,access_attr ...])]
  [FDL_NAME=fdl_name]
  FILE_NAME=file_name
  FILE_TYPE=file_type
  RECORD_TYPE=record_type
  [MAX_RECORD_LENGTH=max_record_length]
  [REFERENCE_VARIABLE=reference_variable]
  [NUM_REPEATS=controlling_repeat_field]
  FIRST_REPEATING_ELEMENT=first_repeat_field]
  [READ_TIMEOUT=mailbox_timeout]
  [KEY_OF_REFERENCE=n]
  [ACCESS_METHOD=file_access_method]
  [SAP_RELEASE=sap_release]
  [SAP_COMP=sap_comp]
  [SAP_TYPE=sap_type]
  [SAP_RECID=sap_recid]
  [AIX_NAME=aix_name]
  [FIELD field_name(
    TYPE=field_type
    FORMAT=format
    [ATTRIBUTES(field_attr)]
    [SIGN=sign]
    [DIMENSIONS(dim_left,dim_right)]
    [DECIMAL_PLACES=decimal_places] POSITION=position
    OFFSET=offset
  )] ...
)

```

---

---

### access\_name

**Description** Specifies the name of the access description.

**Format** 1–16 character MANTIS access profile name

---

### description

**Description** Specifies the description of the external file.

**Format** 0–58 character MANTIS access profile description

**Consideration** A description is required for IBM mainframe and SNI, and optional for PC, VAX/VMS and UNIX.

---

### view\_password

**Description** Specifies the password that enables viewing of records in the file.

**Format** 0–16 character MANTIS access profile password

---

### alter\_password

**Description** Specifies the password that enables updating of records in the file.

**Format** 0–16 character MANTIS access profile password

---

### insert\_password

**Description** Specifies the password that enables inserting and deleting of records in the file.

**Format** 0–16 character MANTIS access profile password

---

### share\_password (VAX/VMS, UNIX only)

**Description** Specifies the password that allows shared update of the records of the file.

**Format** 0–16 character MANTIS access profile password

---

---

**status**

**Description** Specifies the status of the file.

**Options** ACTIVE

**Consideration** To access the external file from a MANTIS program, the status must be ACTIVE. Anything other than ACTIVE prevents access to the external file from a MANTIS program.

---

**access\_attr (PC only)**

**Description** Specifies the attributes of the external file.

**Default** DELAY\_OPEN

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
DELAY_OPEN			✓	
DELAY_CREATE			✓	
AUTO_CREATE			✓	
AUTO_DELETE			✓	

- ◆ DELAY\_OPEN Opening of the file is delayed until the first I/O statement (GET, UPDATE, INSERT, or DELETE) is executed
- ◆ DELAY\_CREATE Creation of the file is delayed until the first I/O statement (GET, UPDATE, INSERT, or DELETE) is executed
- ◆ AUTO\_CREATE File is created immediately on execution of the ACCESS statement with NEW or REPLACE
- ◆ AUTO\_DELETE

**fdl\_name (VAX/VMS and UNIX only)**

**Description** Specifies the name of the FDL file that creates the file.

**Format** 0–32 character FDL file name

**file\_name**

**Description** Specifies the name of the external file.

**Format** VAX/VMS, UNIX, PC—1–58 character string file name

IBM and SNI—1–29 character file name

**Consideration** When using the EXPORT facility to transfer an ACCESS description from NON-IBM to IBM, the file name truncates.

**file\_type**

**Description** Specifies the file type of the external file.

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
INDEXED	✓	✓	✓	✓
SEQUENTIAL	✓	✓	✓	✓
RELATIVE	✓	✓	NUMBERED	NUMBERED
NUMBERED	RELATIVE	RELATIVE	✓	✓
ASCII	SEQUENTIAL	SEQUENTIAL	✓	SEQUENTIAL
MAILBOX	✓			

- ◆ INDEXED Indexed files
- ◆ SEQUENTIAL Sequential files
- ◆ RELATIVE/NUMBERED Relative files accessed by a Relative Record Number
- ◆ MAILBOX VAX/VMS MAILBOX files
- ◆ ASCII External file containing only text data

---

**record\_type**

**Description** Specifies the record type of the external file.

**Options** FIXED Fixed length records

VARIABLE Variable length records

---

**maximum\_record\_size**

**Description** Specifies the maximum size of the record.

**Options** 1–18000

---

**reference\_variable**

**Description** Specifies a record identifier for SEQUENTIAL, NUMBERED or RELATIVE file types.

**Format** 0–16 characters

---

**controlling\_repeat\_field**

**Description** Specifies the field used as the occurrence-controlling element that determines the record layout. Other fields, such as first\_repeat\_field, are dependent on the field you specify here.

**Format** 0–16 character string

---

**first\_repeat\_field**

**Description** If there is a group FIELDS specified that occurs N times, dependent upon the value of another field, then specify here the name of the first field in the group.

**Format** 0–16 character string.

**Consideration** This field applies only when record\_type (see above) is VARIABLE.

---

### mailbox\_timeout (VAX/VMS only)

**Description** Specifies whether mailbox requests are asynchronous.

**Default** NO

**Options** YES Mailbox requests are asynchronous.

NO Mailbox requests are not asynchronous. If you issue a GET, MANTIS waits until a record is available and if you issue an INSERT, MANTIS waits until another program reads the record.

**Consideration** This field applies only when file\_type (see above) is MAILBOX.

---

### key\_of\_reference (VAX/VMS, UNIX and PC only)

**Description** Specifies the key of reference for this file view if the file has alternate keys.

**Format** Integer

**Consideration** This field applies only when file\_type is INDEXED.

**file\_access\_method**

**Description** Specifies the access method (software) used to interface between MANTIS and the external file data.

**Options**

Access method	VAX/VMS	UNIX	PC	IBM
BINARY	✓	✓	VSAM	VSAM
CISAM	RMS	✓	VSAM	VSAM
DOS	RMS	TEXT	✓	VSAM
MISAM	RMS	✓	VSAM	VSAM
PC			PC	PC
RMS	✓	BINARY	VSAM	VSAM
TEXT	✓	✓	VSAM	VSAM
VSAM	RMS	MISAM	✓	✓

- ◆ RMS VAX/VMS file access method
- ◆ MISAM MANTIS proprietary Indexed Sequential Access Method
- ◆ BINARY Binary access method is for files containing any nonprintable characters (especially null and new line). These files do not have standard carriage control and are unsuitable for editing.
- ◆ TEXT Normal text files require text access method, for example files you want to edit, or pipe through a filter, but note that you must specify VARIABLE length records to obtain normal carriage control.
- ◆ DOS Personal computer DOS file
- ◆ VSAM IBM VSAM file or on PC a DOS file that emulates an IBM VSAM file
- ◆ PC PC CONTACT file

**Consideration** If one operating environment generates an export file and moves it to another, the IMPORT maps the access method to the most suitable for that operating environment.

**field\_name**

- Description** Specifies the name of the field.
  - Format** 1–16 character MANTIS symbolic name
  - Consideration** Field descriptors must appear in required order.
- 

**field\_type**

**Description** Specifies the data type of the field.

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
TEXT	✓	✓	✓	✓
BIG	✓	✓	✓	✓
SMALL	✓	✓	✓	✓
DBCS	✓	✓	✓	✓

- ◆ TEXT Alphanumeric field
- ◆ BIG Numeric field for large numbers (recommended when using decimals)
- ◆ SMALL Numeric field for small numbers (recommended when using integers)
- ◆ DBCS Double byte character set field

---

**format**

**Description** Indicates the format in which the external file stores data.

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
PACKED	✓	✓	✓	✓
ZONED	✓	✓	✓	✓
BINARY	✓	✓	✓	✓
FLOAT	✓	✓	✓	✓
TEXT	✓	✓	✓	✓
DBCS	✓	✓	✓	✓
MIXED	✓	✓	TEXT	TEXT

- ◆ PACKED Packed decimal
- ◆ ZONED Zones (unpacked) decimal
- ◆ BINARY Binary
- ◆ FLOAT Floating point
- ◆ TEXT Text (alphanumeric)
- ◆ DBCS Double byte character set
- ◆ MIXED Field of mixed DBCS and TEXT data

**field\_attr**

**Description** Specifies the attributes of the field.

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
KEY	✓	✓	✓	✓
SCRAMBLED	✓	✓	✓	✓
MBF			✓	

- ◆ KEY Key fields.
- ◆ SCRAMBLE Scrambles data for the field when stored, and unscrambles data when used by a program.
- ◆ MBF Float fields in DOS NUMBERED or SEQUENTIAL files, you can specify MBF to indicate Microsoft Binary Format. The default is IEEE float format.

**Considerations**

- ◆ This field is for indexed files only.
- ◆ You must specify the KEY attribute for the first field of the record layout. The key length cannot exceed 32 characters. You can specify KEY on any contiguous fields to follow, as long as the total length does not exceed 32 characters.
- ◆ You can only specify SCRAMBLE as an attribute on any non-KEY field.
- ◆ You can assign only one attribute to any one field.

**sign**

**Description** Specifies the sign of BINARY, PACKED or ZONED field types.

**Default** NO

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
YES	✓	✓	✓	✓
NO	✓	✓	✓	✓
TS	✓	✓	YES	YES
LO	✓	✓	YES	YES
LS	✓	✓	YES	YES
TZ	✓	✓	YES	YES

- ◆ YES Signed (trailing overpunched)
- ◆ NO Unsigned numeric
- ◆ TS Trailing separate (signed)
- ◆ LO Leading overpunched (signed)
- ◆ LS Leading separate (signed)
- ◆ TZ Trailing zoned (signed)

## **dim\_left,dim\_right**

**Description** Dim\_left indicates the number of dimensions of this field.

Dim\_right indicates the length of the field.

**Format** Integer, Integer

**Options** 1–255,1–255

### **Considerations**

- ◆ You must specify these descriptor field types TEXT, DBCS and MIXED.
- ◆ Fields with an ATTRIBUTE of KEY cannot be arrays.

---

## **decimal\_places**

**Description** The number of decimal places for numeric fields.

**Default** 0

**Options** 0–10

---

## **position**

**Description** Specifies the position of this field relative to 1 within the file record.

**Options** 1–99999

### **Considerations**

- ◆ You must specify these descriptor field types TEXT, DBCS and MIXED.
- ◆ Fields with an attribute of KEY cannot be arrays.

---

**offset**

**Description** Specifies the offset of the field. (If a field is part of a data structure that is also part of an array, the occurrence of such a field in the block of data is at an interval, or offset, equal to the length of the data structure.)

**Options** 1-9999

**Consideration** The value specified cannot be smaller than the length of the field.

**General consideration**

Field descriptors must appear in order (field\_1 followed by field\_2, and so on).

## SCENARIO description

The following description defines the syntax for scenarios:

---

```
SCENARIO scenario_name  
DESCRIPTION=description  
[PASSWORD=password]  
SCREEN_NAME=screen_name  
[PARENT_SCREEN=parent_screen_name]  
LEVEL=level  
[EXIT_KEY=exit_key]  
[HELP_KEY=help_key]  
[SCREENS([key:screen[,key:screen]...])]  
[PROGRAMS([key:program],key:program...)]  
SCREEN_LINE=screen_line  
[FILE_NAME=file_name]  
[FILE_PASSWORD=file_password]  
[SCREEN_RECORDS=screen_records]  
[FILE_TYPE=file_type]  
[KEY_TYPE=keytype]  
[BROWSE_KEY=browse_key]  
[ENTRY_KEY=entry_key]  
CALL_PROFILE=call_profile  
)
```

---

---

**scenario\_name**

**Description** Specifies the name of the scenario.

**Format** 1–16 character MANTIS scenario name

---

**description**

**Description** *Required on VAX and UNIX.* OPTIONAL on PC. Specifies the description of the scenario.

**Format** 1–28 character MANTIS scenario description

---

**password**

**Description** Specifies the password of the scenario.

**Format** 1–16 character MANTIS scenario password

---

**screen\_name**

**Description** Specifies the name of the screen for this level of the scenario, that enters the data, and/or browses the data for a file.

**Format** 1–16 character MANTIS screen name

---

**parent\_screen\_name**

**Description** Specifies the name of the screen that is one level above this level.

**Format** 1–16 character MANTIS screen name

**Consideration** You must omit this line level 1, but you must specify this line for all lower levels.

---

### level

- Description** Specifies the level of the hierarchical structure of the scenario.
- Format** Any 1–7 digit number (except 0)
- Consideration** The lower the level is in the hierarchy, the greater the level number.
- 

### exit\_key

- Description** Specifies the key that returns to the next higher level of the scenario, as you move up the hierarchy.
- Options** ENTER  
CANCEL  
CLEAR  
PF1–PF24
- Consideration** Do not define the key defined here also as key, help\_key, browse\_key or entry\_key on the same level.
- 

### help\_key

- Description** Specifies the key that obtains help information for the particular screen in the application.
- Options** ENTER  
CANCEL  
CLEAR  
PF1–PF24
- Consideration** Do not define the key defined here also as key, exit\_key, browse\_key or entry\_key on the same level

---

**key**

**Description** Specifies the key that invokes the next lower level composed of a screen and/or program.

**Options** ENTER  
CANCEL  
CLEAR  
PF1–PF24

**Consideration** The key defined here must not be also defined for the exit\_key, help\_key, browse\_key, entry\_key or key for a screen or program, on the same level. You can use the same key for both a program and a screen on the same level.

---

**screen**

**Description** Specifies the name of the screen that you invoke using the “key” specified.

**Format** 1–16 character MANTIS screen name

---

**program**

**Description** Specifies the program invoked by the “key” specified.

**Format** 1–16 character MANTIS program name

---

**screen\_line**

**Description** Specifies the total number of records on the screen.

---

**file\_name**

**Description** Specifies the name of the MANTIS file, ULTRA file view, or external file view, which you want the data from, to be associated with the screen defined by screen\_name.

**Format** 1–16 character MANTIS internal file view, external file view or ULTRA/TOTAL file view name

**Consideration** Create the file defined here before running the scenario.

---

### file\_password

**Description** Specifies the password of the file specified by file\_name.

**Format** 1–16 character MANTIS internal file view, external file view or ULTRA/TOTAL file view password

**Consideration** Specifies the password if file\_name specified.

---

### screen\_records

**Description** Specifies the total number of records appearing on the screen defined by screen\_name.

**Default** 1

**Options** 1–99

**Consideration** You must specify screen\_records if you specify file\_name. (The total number is the original line plus the total number of repeat occurrences.)

---

### file\_type

**Description** Specifies the type of file to be used, specified by file\_name.

**Default** MANTIS

**Options** MANTIS, ULTRA, EXT, or DL1

---

### key\_type

**Description** Specifies the type of the primary key, for the file specified by file\_name.

**Options** N Numeric

T Text

**Consideration** You must specify the key\_type if you specify file\_name.

---

---

**browse\_key**

**Description** Specifies the browse\_key indicates that you want to browse the data in the file specified by file\_name.

**Options** ENTER  
CANCEL  
CLEAR  
PF1–PF24

**Consideration** The key you specify here you must not specify for any other purpose (e.g., as key, help\_key, exit\_key or entry\_key) for this level of the scenario.

---

**entry\_key**

**Description** Specifies the entry\_key indicates that you want to enter data into the file specified by file\_name.

**Options** ENTER  
CANCEL  
CLEAR  
PF1–PF24

**Consideration** The key you specified here you must not specify for any other purpose (e.g., as key, help\_key, exit\_key or browse\_key) for this level of the scenario.

---

**call\_profile**

**Description** Specifies the name of the call profile.

**Format** 1–16 character name of a call profile

**Consideration** The file type must be DL1.

## ULTRA/TOTAL description

The following description defines the syntax for ULTRA/TOTAL files:

---

```
ULTRA ultra_name(  
  [DESCRIPTION=description]  
  [VIEW_PASSWORD=view_password]  
  [ALTER_PASSWORD=alter_password]  
  [INSERT_PASSWORD=insert_password]  
  [STATUS=status]  
  FILE_NAME=pdm_data_set  
  FILE_TYPE=file_type  
  [LINK_PATH=linkpath]  
  [RECORD_CODE=record_code]  
  [REFERENCE_VARIABLE=ref_var]  
  DBMOD=dbmod_name  
  [CODE_ELEMENT=code_element]  
  [FIELD field_name(  
    ELEMENT=pdm-element  
    TYPE=field_type  
    FORMAT=format  
    [ATTRIBUTES(field_attr)]  
    [SIGN=sign]  
    DIMENSIONS(dim_left,dim_right)  
    [DECIMAL_PLACES=decimal_places]  
  )]...  
)
```

---

---

**ultra\_name**

<b>Description</b>	Specifies the name of the ULTRA/TOTAL file.
<b>Format</b>	1–16 character MANTIS ULTRA/TOTAL file name

---

**description**

<b>Description</b>	Specifies the description of the ULTRA/TOTAL file.
<b>Format</b>	1–58 character MANTIS ULTRA/TOTAL file view description
<b>Default</b>	1 space character

---

**view\_password**

<b>Description</b>	Specifies the password that enables viewing of records in the file.
<b>Format</b>	0–16 character MANTIS ULTRA/TOTAL file view password

---

**alter\_password**

<b>Description</b>	Specifies the password that enables updating of records in the file.
<b>Format</b>	0–16 character MANTIS ULTRA/TOTAL file view password

---

**insert\_password**

<b>Description</b>	Specifies the password that enables inserting and deleting of records in the file.
<b>Format</b>	0–16 character MANTIS ULTRA/TOTAL file view password

---

**status**

<b>Description</b>	Specifies the status of the file.
<b>Default</b>	ACTIVE
<b>Options</b>	ACTIVE Status required to be ACTIVE if the you access the internal file from a MANTIS program.
<b>Consideration</b>	Anything other than ACTIVE prevents access to the internal file from a MANTIS program.

---

**pdm\_data\_set**

**Description** Specifies the name of the ULTRA/TOTAL file to which this view applies.

**Format** 4 character ULTRA/TOTAL data set name

---

**file\_type (VAX/VMS, UNIX, PC only)**

**Description** Specifies the file type.

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
RELATIVE	✓	✓	✓	
PRIMARY	✓	✓	✓	

- ◆ PRIMARY This file type is a keyed file. Each data record contains a physical field that uniquely identifies that record.
- ◆ RELATIVE This file type is related to one or more primary files. A data record in the primary file can point to records in the related file.

---

**link\_path**

**Description** Specifies the linkage path MANTIS uses to retrieve, update, delete and insert records into your variable entry file.

**Format** 8 character link path

---

**record\_code**

**Description** Specifies the record code that you associate with the ULTRA/TOTAL file view.

**Format** 2 character record code

---

**ref\_var (VAX/VMS, UNIX, PC only)**

**Description** Specifies the variable name that MANTIS creates when you process the ULTRA file view to mark the current position in the set of records.

**Format** 16 character name

---

---

**dbmod\_name (VAX/VMS, UNIX, PC only)**

- Description** Specifies the name of the SUPRA compiled database description that describes the PDM file.
- Format** 6 character name
- Consideration** The compiled database description must exist as *XXXXXX.MOD*, where *XXXXXX* is the database description name. *XXXXXX.MOD* must exist or be a logical name that identifies a database description module.

---

**code\_element**

- Description** Specifies the name of the ULTRA/TOTAL element that contains the record code (derived from *dbmod\_name*, see above).
- Format** 4 character name; IBM only—2 character name

---

**field\_name**

- Description** Specifies the name of the field.
- Format** 1–16 character MANTIS symbolic name
- Consideration** Field descriptors must appear in the required order.

---

**pdm\_element**

- Description** Specifies the name of the PDM element.
- Format** 1–8 character standard PDM element, where the first four characters are the data set name; the last four characters are the name given to the field when the database was created

## field\_type

**Description** Specifies the data type of the field.

### Options

Attribute	VAX/VMS	UNIX	PC	IBM
TEXT	✓	✓	✓	✓
BIG	✓	✓	✓	✓
SMALL	✓	✓	✓	✓
DBCS	✓	✓	✓	✓

- ◆ TEXT Alphanumeric field
- ◆ BIG Numeric field for large numbers (recommended when using decimals)
- ◆ SMALL Numeric field for small numbers (recommended when using integers)
- ◆ DBCS Double byte character set field

---

**format**

**Description** Indicates the format in which the you store the data on the external file.

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
PACKED	✓	✓	✓	✓
ZONED	✓	✓	✓	✓
BINARY	✓	✓	✓	✓
FLOAT	✓	✓	✓	✓
TEXT	✓	✓	✓	✓
DBCS	✓	✓	✓	✓
MIXED	✓	✓	TEXT	TEXT

- ◆ PACKED Packed decimal
- ◆ ZONED Zoned (unpacked) decimal
- ◆ BINARY Binary
- ◆ FLOAT Floating point
- ◆ TEXT Text (alphanumeric)
- ◆ DBCS Double byte character
- ◆ MIXED Mixed DBCS and TEXT data

**field\_attr**

**Description** Specifies the attributes of the field.

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
KEY	✓	✓	✓	✓
SCRAMBLED	✓	✓	✓	✓
MBF			✓	

- ◆ KEY Key field
- ◆ SCRAMBLE Indicates that the data for the field scrambles when stored, and unscrambles when used by a program
- ◆ MBF Float fields in DOS NUMBERED or SEQUENTIAL files, you can specify MBF to indicate Microsoft Binary Format. The default is IEEE float format.

**Considerations**

- ◆ This field is for indexed files only.
- ◆ You must specify the KEY attribute for the first field of the record layout. The key length cannot exceed 32 characters. You can specify KEY on any contiguous fields to follow, as long as the total length does not exceed 32 characters.
- ◆ You can only specify SCRAMBLE as an attribute on any non-KEY field.
- ◆ You can assign only one attribute to any one field.

---

**sign****Description** The sign of BINARY, PACKED or ZONED field types.**Default** NO**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
YES	✓	✓	✓	✓
NO	✓	✓	✓	✓
TS	✓	✓	YES	YES
LO	✓	✓	YES	YES
LS	✓	✓	YES	YES
TZ	✓	✓	YES	YES

- ◆ YES Signed (trailing overpunched)
- ◆ NO Unsigned numeric
- ◆ TS Trailing separate (signed)
- ◆ LO Leading overpunched (signed)
- ◆ LS Leading separate (signed)
- ◆ TZ Trailing zoned (signed)

---

**dim\_left,dim\_right****Description** *Required* for field types TEXT, DBCS, and MIXED. Dim\_left indicates the number of dimensions of this field. Dim\_right indicates the length of the field.**Format** Integer,Integer**Options** 1-255

1-255

**Consideration** Fields with an ATTRIBUTE of KEY cannot be arrays.

## **decimal\_places**

**Description** The number of decimal places for numeric fields.

**Default** 0

**Options** 0–10

### **General consideration**

Field descriptors must appear in order (field\_1 followed by field\_2, and so on) for ULTRA/TOTAL file description.

## INTERFACE description

The following description defines the syntax for interfaces:

---

```
INTERFACE interface_name  
  
  [DESCRIPTION=description]  
  
  [PASSWORD=password]  
  
  [ATTRIBUTES(attr[,attr ...])]  
  
  [ROUTINE=routine_name]  
  
  [IMAGE=image_name]  
  
  [PIPE_NAME=pipe_name]  
  
  [PIPE_SIZE=pipe_size]  
  
  [TIMEOUT=timeout]  
  
  [PROGRAM=progname]  
  
  [STATUS=status]  
  
  [RECORD_LAYOUT=layout]  
  
    [FIELD field_name(  
      TYPE=field_type  
      FORMAT=format  
      [ATTRIBUTES(attribute)]  
      [SIGN=sign]  
      DIMENSIONS(left,length)  
      [DECIMAL_PLACES=decimal_places]  
    )] ...  
  
)
```

---

---

## interface\_name

- Description** Specifies the name of the interface profile.
- Format** VAX/VMS, UNIX, IBM—1–16 character MANTIS interface name  
PC - 1–30 character MANTIS interface name
- Consideration** When importing on IBM, SNI, VAX/VMS or UNIX, the interface\_name truncates if it is greater than 16 characters.

---

## description

- Description** Specifies the description of the interface.
- Format** VAX/VMS, UNIX, IBM—1–58 character MANTIS interface description.  
PC—1–50 character MANTIS interface description
- Consideration** When importing on PC, the interface description truncates if it is greater than 50 characters.

---

## password

- Description** Specifies the password of the interface profile.
- Format** 1–16 character password

**attr**

**Description** Specifies the attribute(s) of the interface.

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
<EXTERN>			PROGRAM	
INTERNAL	✓	✓	DLL	
LOCAL_BUF	✓	✓		
PROGRAM	<EXTERN>		✓	
DLL	INTERNAL	INTERNAL	✓	
REMOTE			✓	
MAINFRAME			✓	
INPUT			✓	
OUTPUT			✓	
FULL			✓	
CREATE_PIPE			✓	

- ◆ <EXTERN> Indicates that the given interface is external. The string <EXTERN> does not appear in the export format; it is a default. Thus if you do not specify any of the other attributes, EXTERN is the attribute used.
- ◆ INTERNAL Indicates the INTERNAL INTERFACE attribute of the interface profile. You must include this line for an internal interface, and omit it for all other interfaces. Including this attribute indicates that you want MANTIS to invoke your interface program using VMS dynamic image activation.
- ◆ LOCAL\_BUF Indicates the INTERNAL INTERFACE BUFFER attribute of the interface profile. You must include this line for an internal interface, and omit it for all other interfaces. This specifies the type of common storage area to use for the interface parameters.

- ◆ PROGRAM Indicates which type of interface to use. Starts an external program. DLL - Indicates which type of interface to use. Accesses a routine in a dynamic link library.
- ◆ REMOTE Indicates which type of interface to use. Accesses a server program or another MANTIS session via a specified named pipe, possibly on a network.
- ◆ MAINFRAME Indicates which type of interface to use. Provides for design only, to be migrated to a mainframe.
- ◆ INPUT Specifies data flow. Data passes from the interface program to MANTIS.
- ◆ OUTPUT Specifies data flow. Data passes from MANTIS to the interface program.
- ◆ FULL Specifies data flow. Data passes in both directions.
- ◆ CREATE\_PIPE Indicates whether MANTIS must create a pipe or use the one created by the server program or by another MANTIS session.

### Considerations

- ◆ When moving interface designs between VAX/UNIX and PC, the data flow attribute of FULL is used as a default.
- ◆ You must specify LOCAL\_BUF if you specify the INTERNAL INTERFACE attribute.
- ◆ CREATE\_PIPE is REQUIRED for REMOTE interfaces when you specify data\_flow as either INPUT or OUTPUT. You must omit it in all other cases.

---

**routine\_name (VAX/VMS, UNIX, PC only)**

**Description:** VAX: The routine name to be called when you invoke your shareable image.

PC: Specifies the name of the dynamic link library routine you want to call at the CALL statement.

**Format** PC: 1–16 character MANTIS program name  
 VAX/VMS: 1–31 character MANTIS program name (VMS universal symbol)

**Considerations**

VAX: you must specify a routine name if the interface is internal.

PC:

- ◆ The routine name is REQUIRED for DLL interfaces.
- ◆ You must omit the routine name for all interface types except DLL.
- ◆ The routine name must match the name declared in the module definition (.DEF) file for the DLL.
- ◆ If an interface description originated on VAX/VMS, the routine name may truncate.

---

**image\_name (VAX/VMS, UNIX, PC only)**

**Description** Specifies the name of the executable file included in the program name.

**Format** 1–31 character executable for the given operating environment

**Consideration** Derive the image name from the program name specified by “programe”.

---

**pipe\_name (PC only)**

**Description** Specifies the name of the pipe that communicates with the server program.

**Format** 1–50 characters in the format: [servername]\PIPE\pipename

**Considerations**

- ◆ Pipe\_name is REQUIRED for REMOTE interfaces.
- ◆ You must omit pipe\_name for all types other than REMOTE.

### **pipe\_size (PC only)**

**Description** Indicates the size of the pipe in bytes.

**Options** 8–64000

#### **Considerations**

- ◆ Pipe\_size is REQUIRED if you specify the attribute create\_pipe.
- ◆ You must omit pipe\_size in all other cases.

---

### **timeout (PC only)**

**Description** Specifies the maximum time limit (in seconds) for executing the CALL statement.

**Options** 0–64000

#### **Considerations**

- ◆ Timeout is OPTIONAL for REMOTE interfaces.
- ◆ You must omit timeout for all interfaces other than REMOTE.

---

## progname

**Description** Specifies the name of the program MANTIS calls when you use this interface, or you load the dynamic link library for PC environment, at the CALL statement.

**Format** External file specification

- ◆ IBM: 1–16 character program name
- ◆ PC: 1–64 character program name
- ◆ VAX: 1–252 character program name
- ◆ UNIX: 1–252 character program name

### Considerations

VAX/VMS:

- ◆ For internal interfaces, you must specify a logical name for the shareable image; otherwise, a logical name or file specification can be entered.
- ◆ For external interfaces, you can append DCL RUN command qualifiers to the image name. MANTIS adds the prefix “RUN” to whatever you specify here before executing the whole command in a sub program.

UNIX:

You can enter the file specification of an executable file (program or shell script) or the name of an environment variable.

PC:

- ◆ Progname is REQUIRED for PROGRAM, DLL and MAINFRAME interfaces.
- ◆ You must omit progname for REMOTE interfaces.

## status

**Description** Allows access to this interface from a program.

**Options** ACTIVE

**Consideration** Anything other than ACTIVE prohibits access to this interface from a program.

---

## layout

**Description** Specifies the name of an existing interface whose record layout is the one you want your interface to use.

### Format

- ◆ IBM: 1–16 character layout name
- ◆ VAX: 1–16 character layout name
- ◆ UNIX: 1–16 character layout name
- ◆ PC: 1–30 character layout name

### Considerations

- ◆ Fields specified must exactly match the fields of the lowest associated record layout. For example, if you specify A in the export file, and A has an associated record layout of B, and B in turn has an associated record layout of C, then the fields specified for A are the fields of C.
- ◆ On IMPORT:
  - If any associated record layout in the associated record chain does not exist, the interface does not import. Using the example in the first consideration, B and C must exist, and B must have an associated record layout of C before A will be imported.
  - If the associated record layout specified does exist, then the fields specified must match exactly those of the lowest associated record layout. If the fields do not match, then the interface does not import.

---

**field\_name****Description** Specifies the name of the field.**Format** 1–16 character name

---

**field\_type****Description** Specifies the type of MANTIS field into which the data transfers.**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
TEXT	✓	✓	✓	✓
BIG	✓	✓	✓	✓
SMALL	✓	✓	✓	✓
MIXED	✓	✓	✓	TEXT
DBCS	✓	✓	✓	✓

- ◆ TEXT Alphanumeric field
- ◆ BIG Numeric field for large numbers (recommended when using decimals)
- ◆ SMALL Numeric field for small numbers (recommended when using integers)
- ◆ MIXED Field of mixed DBCS and TEXT data
- ◆ DBCS Double byte character set field

**Consideration** The field type must correspond to the format specified.

---

**format**

**Description** Indicates the external format in which the data transfers.

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
PACKED	✓	✓	✓	✓
ZONED	✓	✓	✓	✓
BINARY	✓	✓	✓	✓
FLOAT	✓	✓	✓	✓
TEXT	✓	✓	✓	✓
DBCS	✓	✓	✓	✓
MIXED	✓	✓	TEXT	TEXT

- ◆ PACKED Packed decimal
- ◆ ZONED Zoned (unpacked) decimal
- ◆ BINARY Binary
- ◆ FLOAT Floating point
- ◆ TEXT Text (alphanumeric) field
- ◆ DBCS Double byte character set field
- ◆ MIXED Mixed DBCS and TEXT data

---

**attribute**

**Description** Specifies the attribute of the field.

**Options** SINGLE\_LEVEL

**Consideration** Assigning SINGLE\_LEVEL on any element holds the information in the interface area only once, regardless of the LEVEL specification in the INTERFACE statement.

**sign**

**Description** Indicates whether the field has a sign.

**Default** NO

**Options**

Attribute	VAX/VMS	UNIX	PC	IBM
YES	✓	✓	✓	✓
NO	✓	✓	✓	✓
TS	✓	✓	YES	YES
LO	✓	✓	YES	YES
LS	✓	✓	YES	YES
TZ	✓	✓	YES	YES

- ◆ YES Signed (trailing overpunched)
- ◆ NO Unsigned numeric
- ◆ TS Trailing separate (signed)
- ◆ LO Leading overpunched (signed)
- ◆ LS Leading separate (signed)
- ◆ TZ Trailing zoned (signed)

**Considerations**

- ◆ For binary fields, specify YES to indicate the field is signed.
- ◆ For zoned fields, use any one of the values listed.
- ◆ For text fields, the value of sign is ignored.
- ◆ Float and packed fields must always be signed.

---

## left

**Description** Specifies the number of occurrences of the field. The dimension of the array is equal to the value specified here.

**Options** 1–255

---

## length

**Description** Specifies the length of the field in bytes.

**Options** PACKED (1–9)

ZONED (1–16)

BINARY (1, 2, 4, or 8)

FLOAT (4 or 8)

TEXT (1–254)

**Consideration** The length of the field in bytes is not the number of digits in a packed decimal.

---

## decimal\_places

**Description** Specifies the number of decimal places for PACKED, ZONED, and BINARY numeric fields.

**Options** 0–10

# 10

## Using search facilities

The MANTIS Search Facility (MSF) is a programmer's tool to search through the text of MANTIS entities and find matches for supplied criteria.

MSF searches program lines for supplied criteria, including optionally searching comments with a program. Other entities are searched for matching field names. These entities include screens, internal files, external file views, prompts, interfaces, and TOTAL file views. Additionally, the entity description field can be searched.

### Accessing MANTIS Search Facility

The MANTIS Search Facility is executed using online or Batch MANTIS. Sign on to the appropriate user desired, and select Search Facility.



This facility can be run online or in batch and produce a report of matches found.



---

**entity name**

**Description** The entity name is the name of the entity you want to search

**Options** A complete valid entity name—searches only that entity.

**Considerations**

- ◆ **A partial name with an asterisk (\*) as a wildcard.** Searches all entities beginning with the partial name. For example, CUST\* searches all entities beginning with “CUST”.
- ◆ **An asterisk (\*).** Searches all entity names.

---

**entity type**

**Description** The entity type can be one or more one-character letters representing the different types of entities to be searched.

**Options**

- P Programs (default)
- S Screens
- F MANTIS Internal Files
- I Interfaces (both old and new-style)
- O Prompters
- V VSAM/PC/Access External File Views
- T TOTAL File Views
- \* All entity types

You can also press PF6 to display an entity type selection screen shown in the following screen illustration:

```

MSF001                MANTIS Search Facility                YYYY/MM/DD HH:MM:SS
===>
Search Criteria:
  Username . . . . . MASTER
  Password . . . . .
  Entity Name . . . . *
  Entity Type . . . . P
  Search Comments? . N      Search Desc
  Saved Search . . .
Search String(s):
=>
=>
=>
=>
=>
=>
=>
=>
=>
=>
=>
=>
=>
=>
-----+-----
MSF005  MANTIS Search Facility
'S'elect Type and Press 'ENTER'
P = Programs
S = Screens
V = VSAM/PC External Views
F = MANTIS Internal Files
I = Interfaces (New & Old)
O = Prompters
T = TOTAL/PDM Views
* = All Entity Types
F1=HELP  F3=EXIT  F12=CANCEL
-----+-----
F1=Help  F3=Exit  F5=Reset  F6=Entity List  F7=Save Search  F8=Load Search
F9=Delete Search  F12=Cancel  F15=Menu  F24=Logoff
  
```

Place an “S” next to the type(s) of searches you want and press ENTER to fill the Entity Type field on the MSF panel.

---

## Show status

**Description** When a large scope search is conducted online, it may appear that the MANTIS Search Facility is hanging up. Searching hundreds of programs with thousands of lines of code can cause delays as matches are found. By changing the Show Status indicator, you can receive feedback during the search. You can enter:

- ◆ **S.** Indicates summary feedback. After 25 or more entities are searched without a match found, a message displays to the screen.

```
Scanning Programs ...
MSFSUMI:Scanned 25 entities without finding match - ENTER to continue search
```

Pressing ENTER will continue the search. You can optionally enter KILL (or whatever your Master User has designated) to abort the search.

- ◆ **D.** Indicates detailed feedback. Every entity where no match is found will be listed to the screen.

```
Scanned Program MASTER:ADD_TO_MENU ...
Scanned Program MASTER:ADV_ANALYZE_LOG ...
Scanned Program MASTER:ADV_DUMMY ...
Scanned Program MASTER:ADV_SIGN_ON ...
Scanned Program MASTER:ADV_SQL_CONNECT ...
Scanned Program MASTER:ADV_SYS_EXTERNAL ...
...
```

Pressing ENTER will continue the search. You can optionally enter KILL (or whatever your Master User has designated) to abort the search.

- ◆ **N (default).** Indicates no feedback. MANTIS Search Facility will only display the results screen.

---

### Search comments

- ◆ Entering “Y” indicates that while searching programs, comments are to be included in the search.
- ◆ Entering “N” (default) excludes comments from the search.

---

### Search description

- ◆ Entering a “Y” indicates that entity descriptions are to be included in the search.
- ◆ Entering “N” (default) excludes entity descriptions from the search.

---

### Saved search

- ◆ You have the ability to save and recall search criteria. This is discussed in the following section.

---

### Search string(s)

- ◆ You may enter up to nine separate search criteria. Each search criterion is examined and compared separately as the search is conducted. If a string within an entity matches one or more of the search strings, it is included in the results display.

## **Saving and recalling searches**

You may save search criteria and on subsequent sessions recall the criteria so you do not have to reenter it each time you need it. Only the search string information is saved. No user name, password, entity name, entity type, search comments, or search description information is saved.

### **Saving searches**

To save a search, enter the search information (in the search strings) and then enter a save-name (spaces are allowed) in the Saved Search field then press PF7. Your search criteria is saved. If search criteria by that name already exists, it is updated with the new search criteria. No confirmation message is presented on updates.

### **Recalling searches**

To recall a search, press PF8. You are presented with a selection list shown in the following screen illustration:



## Deleting searches

To delete a saved search, press PF9. You are presented with a selection list shown in the following screen illustration:

```

MSF001                MANTIS Search Facility                YYYY/MM/DD HH:MM:SS
===>
Search Criteria:  +-----+
  Username . . . . MSF004 MANTIS Search Facility          11 Users)
  Password . . . .                                     11 Names/Wildcard)
  Entity Name . . 'D'elete Search and Press ENTER
  Entity Type . . _ MY SEARCH STUFF
  Search Comments?
  Saved Search . .
Search String(s):
=>
=>
=>
=>
=>
=>
=>
=>
=>
=>
=>
F3=EXIT  F8=FORWARD  F12=CANCEL
+-----+

F1=Help  F3=Exit  F5=Reset  F6=Entity List  F7=Save Search  F8=Load Search
F9=Delete Search  F12=Cancel  F15=Menu  F24=Logoff

```

Enter a “D” next to the saved search and press ENTER to delete that saved search. No deletion confirmation is presented.

The following table lists the COMMANDS you enter on the MSF's command line:

Command	Description
PROGRAM <i>filename</i>	Loads the "filename" program into the Full Screen Editor. Can be abbreviated as PROG <i>filename</i> .
SCREEN <i>filename</i>	Loads the "filename" screen into Screen Design Facility. Can be abbreviated as SCRN <i>filename</i> .
ACCESS <i>filename</i>	Loads the "filename" external file into the External File Design Facility.
VSAM <i>filename</i>	Same as ACCESS <i>filename</i> .
INTERFACE <i>filename</i>	Loads the "filename" interface into the Interface Design Facility. Can be abbreviated as INT <i>filename</i> .
PROMPTER <i>filename</i>	Loads the "filename" prompter into the Prompter Design Facility. Can be abbreviated as PROM <i>filename</i> .
FILE <i>filename</i>	Loads the "filename" internal MANTIS file into the MANTIS File Design Facility.
TOTAL <i>filename</i>	Loads the "filename" TOTAL file view into the TOTAL File View Design Facility.
DIRECTORY	Runs the MANTIS Directory Facility for entity reference. Can be abbreviated as DIR.
EXIT	Leaves the MANTIS Search Facility.
CANCEL	Leaves the MANTIS Search Facility.
MENU	Returns to the MANTIS main menu.
LOGOFF	Logs off MANTIS.
HELP	Presents a series of help prompters.

## Sample search

### Sample search using the MANTIS Search Facility

In this sample search:

- ◆ The selected user is the “TEST” user.
- ◆ The selected entity names are represented by the “\*” wildcard, which means “all entity names.”
- ◆ The selected entity types are “PSVFIO,” meaning the following entity types:
  - Programs
  - Screens
  - VSAM
  - Files
  - Interfaces
  - Prompters
- ◆ The answer to “Search Comments?” is “Y(es).”
- ◆ The answer to “Search Descriptions?” is “Y(es).”
- ◆ The search criteria are:
  - “date”
  - “test”

```

MSF001                MANTIS Search Facility                YYYY/MM/DD HH:MM:SS
===>
Search Criteria:
Username . . . . . TEST_____                (*=All Users)
Password . . . . .
Entity Name . . . . *_____                (*=All Names/Wildcard)
Entity Type . . . . PSVFIO                Show Status? . . S
Search Comments? . Y                Search Descriptions? . . Y
Saved Search . . . . _____
Search String(s):
=> date
=> test
=>
=>
=>
=>

F1=Help  F3=Exit  F5=Reset  F6=Entity List  F7=Save Search  F8=Load Search
F9=Delete Search  F12=Cancel  F15=Menu  F24=Logoff

```

Press ENTER. The following screen appears:

```
MSF002                MANTIS Search Facility                YYYY/MM/DD HH:MM:SS

MSFS01I:Program 'TEST:AAA_RENAMED_NOW_X' Items Found
MSFDESI:Description contains: 'THIS IS A TEST TEST'
00200 SCREEN MAP("TEST:TEST")

MSFS01I:Program 'TEST:AAA_RENAMED_NOW_XXX' Items Found
MSFDESI:Description contains: 'THIS IS A TEST TEST'
00200 SCREEN MAP("TEST:TEST")

MSFS01I:Program 'TEST:AAA_TRANSFORMED' Items Found
MSFDESI:Description contains: 'THIS IS A TEST TEST'
00002 SCREEN MAP("TEST:TEST")

MSFS01I:Program 'TEST:ABC' Items Found
00100 ENTRY COMPTEST
00200 |@SOURCE"TEST:COMPTEST@/TEST"
00300 |*REPLACE"TEST:COMPTEST/TEST"
00600 | THIS IS THE MAIN ROUTINE OF COMPTEST
00701 |SCREEN MAP("TEST:CUST_NAME")
00901 | PUTTING IN CHANGE TO TEST A Y2K BUG.  NEED DATE TO
01300 |*COMPONENT"TEST2:COMPONENT1/TEST2"
01400 ENTRY THISISATEST

MSFS01I:Program 'TEST:ABC_BACKUP' Items Found
00100 ENTRY COMPTEST
00200 |@SOURCE"TEST:COMPTEST@/TEST"
00300 |*REPLACE"TEST:COMPTEST/TEST"
00600 | THIS IS THE MAIN ROUTINE OF COMPTEST
01300 |*COMPONENT"TEST2:COMPONENT1/TEST2"
```

Press ENTER. The following screen appears:

```
MSF002                                MANTIS Search Facility                                YYYY/MM/DD HH:MM:SS

MSFS01I:Program 'TEST:TESTXXX' Items Found
00001 ENTRY TESTXXX
00002 INTERFACE X("TESTXXX", "TEST")

MSFS01I:Program 'TEST:12345678901234567890' Items Found
00001 ENTRY THIS_IS_A_TEST

MSFS02I:Screen 'TEST:GREEN_TEST' Items Found
MSFDESI:Description contains: 'THIS IS A TEST FOR GREEN'

MSFS02I:Screen 'TEST:TEST' Items Found
MSFDESI:Description contains: 'TEST'

MSFS02I:Screen 'TEST:TEST_FOR_MCPU' Items Found
MSFDESI:Description contains: 'TEST FOR MCPU'
TEST                                (2,2),253,TEXT,UNP,NOR,UPP

MSFS02I:Screen 'TEST:TEST_MASK' Items Found
MSFDESI:Description contains: 'TEST_MASK'

MSFS02I:Screen 'TEST:TEST_MDF' Items Found
MSFDESI:Description contains: 'TEST MSF'
TEST                                (1,2),4,HEADING,PRO,NOR,LOW

MSFS02I:Screen 'TEST:TEST_MENU' Items Found
MSFDESI:Description contains: 'TEST'
```

Press ENTER. The following screen appears:

```
MSF002                MANTIS Search Facility                YYYY/MM/DD HH:MM:SS
MSFS05I:Interface 'TEST:MYTESTTOO' Items Found
MSFDESI:Description contains: 'MY TEST TOO'

MSFS05I:Interface 'TEST:TEST' Items Found
MSFDESI:Description contains: 'THIS IS A TEST'

MSFS05I:Interface 'TEST:TESTXX' Items Found
DATEFIELD            TEXT 21  TEXT  8

MSFS04I:File 'TEST:TEST_FILE' Items Found
MSFDESI:Description contains: 'TEST'
TEST1                TEXT  9  KEY
TEST2                TEXT  3

MSFS04I:File 'TEST:TEST_FILE3' Items Found
MSFDESI:Description contains: 'TEST'
TEST1                TEXT  9  KEY
TEST2                TEXT  3

MSFS08I:Prompter 'TEST:TEST' Items Found
MSFDESI:Description contains: 'TEST'

MSFS08I:Prompter 'TEST:TEST2' Items Found
ASDASDASFASDFSADF DATE

MSFENDI:Search completed:  142 Entity(s) processed -  319 Line(s) found
```



**WARNING:** Consider carefully before conducting large-scale searches. Searching across all users, or searching all entities in one large user (with hundreds of entities), may impact CPU resources. Cincom recommends that you use Batch MANTIS to perform large-scale searches.

## Running MSF in Batch MANTIS

Below is an MVS JCL sample of a Batch MANTIS Search Facility search:



This MVS JCL sample produces the same results as the sample search in [“Sample search using the MANTIS Search Facility”](#) on page 525.

---

... JOBCARD	
... FILE DEFINITIONS, ETC.	-----
:	-----
:	-----
<PAGESIZE=60X132>; TEST; TEST;	<i>Specifies the environment</i>
<BLANK=ON>; <ECHO=ON>; 1;	<i>Run a Program By Name</i>
CONTROL: SEARCH_FACILITY;	<i>Run MANTIS Search Facility</i>
;;;	<i>Skip to entity type field</i>
'PSVFIOT;	<i>Set entity type(s)</i>
'Y;	<i>Search comments</i>
'Y;	<i>Search descriptions</i>
';	<i>Skip to the search fields</i>
'DATE;	<i>The search criteria are DATE and/or TEST</i>
'TEST;	
LOGOFF;	<i>Exit MSF and MANTIS</i>

---



In the preceding MVS JCL sample:

- ◆ The apostrophe (') is used as a continuation character that spreads a single screen's input over multiple lines. This provides better readability.
- ◆ The ENTER key is not simulated until after the last input ('TEST;) line, because there is no continuation character on the LOGOFF line. LOGOFF is a primary line command, available in MSF.
- ◆ The semicolon (;) at the end of each line in the MVS JCL sample is optional.



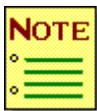
# A

## Using the Old Interface Design Facility

This appendix contains information on using the Old Interface Design Facility, which does not automatically convert data on the CALL statement. If you have interfaces designed with the Interface Design Facility provided with MANTIS 4.0 or under, note the following considerations. You can then choose to continue using Old Interface designs, or update them to the Enhanced Interface design.

### General considerations

- ◆ You must use the Old Interface Design Facility to fetch an interface design in the old format. If you fetch through the new Interface Design Facility, your interface displays in the new format. Internally, however, it will remain the same until you save or replace it.
- ◆ Use the Old Interface Design Facility to replace an interface design in the old format. If you replace it using the new Interface Design Facility, MANTIS replaces your old interface with the new format.
- ◆ In the Old Interface Design Facility, numeric fields are specified first in the called subroutine even if they do not appear first in the interface design layout. In the new Interface Design Facility, data fields are specified in the same order as they appear in the interface design layout. Therefore, you should not fetch or replace old designs using the new format until you are prepared to modify the called program.



---

Users of the DL/I interface (Releases 3.5 and 3.7) must continue to use the Old Interface Design Facility for access to DL/I.

---

- ◆ MANTIS converts numeric fields defined as arrays to a vector specification. For example, a BIG field defined as 2 rows and 12 columns will be converted to BIG specified with 24 columns. This impacts the MANTIS programs that use these interfaces.

## Interface Design Facility for earlier versions of MANTIS

To access the Old Interface Design Facility, run the program CONTROL:INTERFACE\_37. You can run this program from programming mode, or you can enter the Run a Program by Name option on the MANTIS Facility Selection Menu (see “MANTIS Facility Selection Menu” on page 21). For information on using Run a Program by Name, see “Running a program by name” on page 321.

When you run the CONTROL:INTERFACE\_37 program, the Interface Design Facility menu shown in the following screen illustration:

```
INT001                                M A N T I S

                                     Interface Design Facility

Create or update interface profile ... 1
Update area layout ..... 2
Library functions ..... 3
Directory of interfaces ..... 4
Print completed design ..... 5
Terminate this facility ..... CANCEL

                                     :   :
```

The options on the Interface Design Facility menu display in the order in which you perform them to create a new interface profile. If you are updating an existing interface profile, select Library Functions to fetch the interface profile from your library (see “Using the Library Functions” on page 541 for information on using Library Functions), then update the interface profile information as desired.

The following table provides a brief description of and section references for the Interface Design Facility menu options:

This option	Allows you to	Section
Create or update interface profiles	Create a new interface profile or update an existing one.	“Creating or updating an interface profile” on page 534
Update area layout	Create a new area layout or update an existing one.	“Updating the Area Layout” on page 537
Library functions	Save, replace, fetch or delete interface profiles.	“Using the Library Functions” on page 541
Directory of interface profiles	View a list of all interface profiles in your library.	“Using the Directory of Interfaces” on page 543
Print completed design	Obtain a hard copy of your current area layout.	“Printing the completed design” on page 545

You can move among the Interface Design Facility menu options listed above without losing the interface design currently in your work area. Remember to save your interface design or any updates via the Library Functions (see “Using the Library Functions” on page 541) before exiting from the Interface Design Facility. If you attempt to exit the facility without saving current changes, MANTIS asks you to confirm your exit.

The sections listed above discuss the Interface Design Facility options and provides an example design session; “Interface program description” on page 546 provides program descriptions and storage requirements.

## Creating or updating an interface profile

Use the Create or Update Interface Profile function to create a new interface profile or update an existing one. Select the Create or Update Interface Profile option from the Interface Design Facility menu (see “Interface Design Facility for earlier versions of MANTIS” on page 532) by typing a 1 in the selection field and pressing ENTER, or by pressing PF1. MANTIS returns the Interface Design Facility screen shown in the following screen illustration:

```
INT002                                M A N T I S

                                     Interface Design Facility

Name and Description ..... :
:
Associated area Layout Name ....
:
Password for using ..... :
Program to be called ..... :
Status ..... :
```

If you are updating an existing interface profile or returning to this function after performing some other functions, the interface description currently in your work area displays (after you fetch it using Library Functions).

Enter data for the fields on this screen as described in the field descriptions on the following pages.

---

## Name and description of interface

- Description** Name is *Required*. Description Is *Optional*. Specifies the name and the description of the interface profile.
- Format** *name* 1–16 alphanumeric character symbolic name  
*description* 1–38 alphanumeric character description of the interface
- Consideration** The description you specify here displays in the Directory of Interfaces (see “[Using the Directory of Interfaces](#)” on page 543).

---

## Associated area layout

- Description** *Optional*. Specifies the name of an existing interface whose area layout your interface should use.

### Considerations

- ◆ If you are specifying an existing associated area layout, you do not need to redefine the area layout.
- ◆ Do not delete the associated interface while the current interface remains ACTIVE. Do not change the associated area layout while it is being used by this interface.
- ◆ If you do not define an associated area layout, leave this field blank—do not enter NONE or MANTIS will search for an interface named NONE.

---

## Password for using

- Description** *Optional*. Specifies the password that will allow future access to the interface.
- Format** 1–16 alphanumeric character password

## Program to be called

**Description** *Required.* Specifies the name of the program that MANTIS will call when this interface is used.

**Format** 1–8 alphanumeric character password

**Consideration** If you do not include the program in the MANTIS Load Module, you must:

- ◆ Define the CICS program in the PPT table (if you write the program in COBOL, you must specify the program as COBOL since the PPT assumes Assembler).
- ◆ Define any files that program uses in the FCT tables.

If you do include the program in the MANTIS Load Module, you do not have to define a PPT entry. However, ensure that you specify INCLUDE=interfaces in CSOPCUST.

---

## Status

**Description** *Required.* Indicates the status of the program being called by the interface.

**Consideration** Enter ACTIVE. Do not enter anything other than ACTIVE (e.g., ACTIVE followed by a blank space) or programs will not be able to access this interface.

After you enter the appropriate data, press ENTER. MANTIS accepts the data and returns you to the Interface Design Facility menu. Your interface profile is temporarily saved. Before you can save the interface profile permanently using the Library Functions option, you need to create the area layout. (See “[Updating the Area Layout](#)” on page 537 for information on creating the area layout.)

If you specify an associated area layout for an interface profile, you can proceed directly to Library Functions to save the profile.

## Updating the Area Layout

To update an Area Layout, select the Update Area Layout option from the Interface Design Facility menu by typing a 2 in the selection field and pressing ENTER, or by pressing PF2. MANTIS returns the Interface Area Definition screen shown in the following screen illustration:

MANTIS Interface Area Definition				YYYY/MM/DD
Name:	Page 1	Element count		HH:MM:SS
Element	-----Name-----	Data-Type	Dimensions	Attributes
-	-	-	-	-

(Use PF1 - PF10 to page; use CANCEL to exit)

The following field descriptions apply to the Interface Area Definition screen:

---

### Name

**Description** *Display.* Shows the name of the interface currently in your work area.

**Considerations** You specify the interface name in Create or Update an Interface Profile or in Library Functions.

---

### Page

**Description** *Optional.* Shows the page of the view layout currently being displayed.

**Default** 1

**Consideration** Use PF1 through PF10 to page through the area layout or type the new page number (1–10) over the current page number and press ENTER.

---

### Element count

**Description** *Display.* Shows the total number of elements currently in your area layout.

**Considerations** The Interface Design Facility sets and maintains this field to indicate the current number of fields in the area layout.

---

### Size

**Description** *Display.* Specifies the current interface length in bytes.

**Considerations** The Interface Design Facility sets and maintains this field.

---

## Element

**Description** *Required.* Indicates (1) the action you want to take with the element definitions on the screen, and (2) the line number on which you want the action to take place.

### Options

◆ **First tab position.**

- A—Alter this line. Type the new information over the existing fields.
- I—Insert this line.
- D—Delete this line.

◆ **Second tab position.** Number of the line to be altered, inserted, or deleted.

You can insert one or more elements between two existing elements (e.g., between elements 4 and 5) by inserting (I) the new element as line 4 and pressing ENTER. MANTIS renumbers the new element as line 5, the original line 5 as line 6, and so on. To insert before element 1, use element 0.

---

## Name

**Description** *Required.* Specifies the name of the element.

**Format** 1–16 alphanumeric characters (with PREFIX if specified)

---

## Data-Type

**Description** *Required.* Indicates the type of data the element contains.

**Options** TEXT All text fields (requires you to enter a length in the first tab field under DIMENSIONS).

KANJI Kanji (DBCS) data (DBCS language support is required)

BIG Numeric field

## Dimensions

**Description** Indicates the length of a text (or Kanji (DBCS)) or the number of occurrences of this field in a list.

**Options** TEXT FIELDS

First tab position: The length of this field or the number of occurrences of this field in a list.

Second tab position: The length of each occurrence of this field in a list.

NUMERIC FIELDS

First tab position: The number of occurrences in a 1-dimensional array, or the number of rows in a 2-dimensional array.

Second tab position: The number of columns in a 2-dimensional array.

---

## Attributes

**Description** *Optional.* Indicates whether the associated element is a SINGLE\_LEVEL element.

**Options** SINGLE LEVEL

### Considerations

- ◆ You can assign SINGLE\_LEVEL to any element. This causes MANTIS to hold the information in the interface area only once regardless of the LEVEL specification in the INTERFACE statement of the associated program. (It does not become an array when LEVEL is used in the INTERFACE statement.)
- ◆ MANTIS typically uses fields marked SINGLE\_LEVEL for interface program context between interface calls.

When you enter all data, press ENTER to temporarily store the area layout definition. If you press the CANCEL key or any other key, you will lose the additions and updates. After you press ENTER, press the CANCEL key to return to the Interface Design Facility menu. Then select Library Functions to permanently save or replace the area layout definition.

## Using the Library Functions



Updates of old interfaces will be saved in the old format and do not need renaming.

Use the Library Functions to save, replace, fetch and delete interface profile designs. Select the Library functions option from the Interface Design Facility menu (see “[Interface Design Facility for earlier versions of MANTIS](#)” on page 532). MANTIS returns the Interface Library Facility menu shown in the following screen illustration:

```

M A N T I S

Interface Library Facility

Name of interface ..... :

Save ..... 1
Replace ..... 2
Fetch ..... 3
Delete ..... 4
Terminate ..... CANCEL

:

```

If there is an interface profile currently in your work area the name of the design displays. Type a 1 in the selection field and press ENTER, or press PF1. If you are updating an interface design, you must first fetch it from the library. You can then perform the necessary functions on the interface.

Field descriptions for this screen are on the following pages.

---

## Name of interface

**Description** *Required.* Identifies the interface profile you want to save, fetch, replace, or delete.

**Format** 1–16 alphanumeric characters

### Considerations

- ◆ If you have a new interface profile in your work area, the name automatically displays in this field.
- ◆ Enter an existing interface profile name to perform fetch, replace, or delete actions.

You can perform the following actions from the Interface Library Facility menu by typing the number of the action in the selection field and pressing ENTER or by pressing the corresponding PF key.

Action	Description
Save	Saves interface profiles in your library. Use this function only when the interface profile does not already exist in your library.
Replace	Replaces an interface profile in your library with an updated version currently in your work area.
Fetch	Retrieves an interface profile from your library and places it in your work area. You cannot fetch an interface that is in the new format.
Delete	Deletes an interface profile from your library. You can delete an interface in the new format as well as one in the old format. MANTIS will ask you to confirm the deletion.

When you have completed the specified library function, MANTIS exits to the Interface Design Facility menu and displays a confirmation message in the lower left-hand corner of the screen.

---

## Using the Directory of Interfaces

Use the Directory of Interfaces to display an alphabetic listing of all existing interface profiles. Select the Directory of Interfaces option from the Interface Design Facility menu by typing a 4 in the selection field and pressing ENTER, or by pressing PF4. MANTIS returns the Directory of Interfaces screen. The status and description of the interfaces shown in the following screen illustration:

Directory of Interfaces				YYYY/MM/DD
EXAMPLES				HH:MM:SS
-----Name-----	----Password----	Fmt	-----Description-----	
TESTFACE	user password	OLD	TEST INTERFACE	

## General considerations

- ◆ You can view the list, but you cannot change it. If you want to print the list, use the Directory Facility. (See “Listing MANTIS entities using the Directory Facility” on page 326 for information on using the Directory Facility.)
- ◆ If the list of interfaces is long and you want to reposition the list starting at a different interface name, do the following:
  1. Enter 1–16 characters of the interface name from which you want to start the list.
  2. Press ENTER.
- ◆ To display a particular range of interface names, enter a Starting Name and an Ending Name, separated by a colon (e.g., AUX:INTER), in the bottom-left corner of the screen.



---

When specifying a range of interfaces, you cannot use the wildcard characters described below.

---

- ◆ If you want to search for a set of interfaces whose names correspond to a particular pattern of characters, use the wildcard characters, the asterisk (\*) and the question mark (?), as follows:
  - \* Represents an indefinite number of characters. For example, \*2\* will display a list of all interfaces whose names contain a 2.
  - ? Represents a single character. INTER??? designates an interface (or interfaces) whose name begins with INTER and ends with any three characters.

Enter either parameter in the lower-left corner of the Directory of Interfaces list.

If the directory list has more than one page, MANTIS scrolls to the next page when you press ENTER. After you finish viewing the list of interfaces, press ENTER. MANTIS returns to the Interface Design Facility menu. You can exit the Directory of Interfaces list and return to the Interface Design Facility menu at any time by pressing the CANCEL key.

## **Printing the completed design**

Use the Print Completed Design option to obtain a hard copy of your current interface area layout. Select the Print Completed Design option from the Interface Design Facility menu by typing a 5 in the selection field and pressing ENTER, or by pressing PF5. You can return to the Interface Design Facility menu at any time during the interface design phase and select this option. MANTIS routes the current interface area layout to a designated printer.

## Interface program description

You access an interface profile by using the CALL statement in your program. When you issue the CALL statement, MANTIS calls the program named in your interface definition (Program to be called, see “[Creating or updating an interface profile](#)” on page 534) by issuing an EXEC CICS LINK instructions (for CICS environments, if the interface has not been linked to MANTIS), or standard IBM subroutine linkage (for CICS if the interface has been linked to MANTIS, and for Batch MANTIS), and by passing a storage area to this program. This storage area contains any information provided by the program that issued the CALL.

You can make alterations, do calculations, perform I/O operations (including terminal I/O), perform database functions, perform subroutine calls, and so on with the contents of this storage area. Any acquired storage area should be released prior to returning to MANTIS. Return to MANTIS by issuing a DFHPC TYPE=RETURN (CICS) instruction, or standard IBM subroutine linkage (CICS if the program has been linked to MANTIS).

### General considerations

- ◆ If you *do not* include the program in the MANTIS Load Module, you must:
  - Define the CICS program in the PPT table. (If you write the program in COBOL, you must specify the program as COBOL since the PPT assumes Assembler.)
  - Define any files that program uses in the FCT tables.
- ◆ If you *do* include the program in the MANTIS Load Module, you do not have to define a PPT entry. However, ensure that you specify INCLUDE=interfaces in CSOPCUST.



---

Your program must not make any alterations to the contents of the TWA for CICS. You can save these areas and then restore.

---

## CICS and batch storage requirements

Numeric and text (or DBCS) fields are *not* stored in the order in which they appear in the interface layout. Instead, you must define all numeric fields first (even if they are interspersed with text fields in the interface area layout), followed by all text fields. Within the numeric and text sections, MANTIS assumes fields to be in the same relative order as in the interface area layout. For each numeric field, specify a double precision internal floating-point field (COMP-2 in COBOL). For each text field, specify the same size as was specified during the interface area layout definition.

### CICS requirements

In the linkage section, you must define the storage area that MANTIS passes to your interface program. CICS reserves the first and last 8 bytes of the storage area for its own use; do not overwrite it. MANTIS uses the second 8 bytes of the storage area as a text variable associated with your interface name. The MANTIS program which issued the CALL can, therefore, test the text variable associated with your interface name for a value returned by the interface program.

For example, if your MANTIS program contains the following statements:

```
120..CALL TESTPGM ("GET" ,"1234" )
130..IF TESTPGM="NOTFOUND"
140..MESSAGE="ERROR,EMPLOYEE DOES NOT EXIST"
150..END
```

the interface program may have returned "NOTFOUND" in the second 8 bytes of the storage area. This second 8 bytes always contains blanks upon entry to your interface program.

Your interface program must establish addressability to the storage area. The first 4 bytes of the TWA contain the address of the storage area. This address is the start of the 8 bytes reserved for CICS. The half word of 4 bytes into the TWA contains the displacement (the next offset) to the first user-defined text field in the interface area.

## **CMS requirements**

In the linkage section, you must define the storage area that MANTIS passes to your interface program. MANTIS uses the first 8 bytes of the storage area as a text variable associated with your interface name. The MANTIS program which issued the CALL may, therefore, test the text variable associated with your interface name for a value returned by the interface program. If, for example, your MANTIS program contains the following statements:

```
120..CALL TESTPGM ("GET" , "1234" )
130..IF TESTPGM="NOTFOUND"
140..MESSAGE="ERROR,EMPLOYEE DOES NOT EXIST"
150..END
```

the interface program may have returned "NOTFOUND" in the first 8 bytes of the storage area. This first 8 bytes always contains blanks upon entry to your interface program.

It is not necessary for your interface program to establish addressability to the storage area in CMS.

## **Batch requirements**

When a Batch MANTIS interface program is invoked, the following register convention is used:

R13	18 full word save area
R14	Return address
R1	Address of parameter list (end marked by x "80" in first byte of parm 2)
	Parm 1: Address of interface area
	Parm 2: Address of a half word containing the offset to the first text field

## Interface debugging

If an interface fails to perform properly, check the following areas:

- ◆ Ensure that the name of the interface specified in the CALL statement matches the name given in the INTERFACE statement.
- ◆ Ensure that the name of the interface profile specified in the INTERFACE statement matches the name assigned during interface design.
- ◆ Make sure that the program is linked to the DFHRPL (OS CICS), to the Core Image Library (DOS CICS), or to the MANTIS LINKLIB library or a separate TEXT file. The program can also be linked to MANTIS through the Customization Macro and by modifying the appropriate linkdeck.

### CICS considerations

- ◆ You must add an entry to the PPT specifying the same program name as that which appears in the interface profile, unless you include the program in the MANTIS Load Module (see your Master User).

The entry in the PPT must specify the correct programming language.

If you write the program in Command Level:	Link-edit the following module with the interface program as the first module:
COBOL	DFHECI
PL/1	DFHPL101
Assembler	DFHEAI

- ◆ The fields defined in the INTERFACE profile must all have corresponding fields of the correct length and type in the LINKAGE SECTION of the INTERFACE program.
- ◆ The INTERFACE program should not use the first 3500 bytes of the TWA.

## Example interface program

In this interface, the following elements have been defined on the Interface Area Definition screen shown in the following screen illustration:

MANTIS Interface Area Definition				YYYY/MM/DD
Name:TESTFACE				HH:MM:SS
Page 1		Element count 4		Size 44
Element	-----Name-----	Data-Type	Dimensions	Attributes
1	FUNCTION	TEXT	8	
2	NID	BIG		
3	NOM	TEXT	20	
4	BRUT	BIG		

(USE PF1 - PF10 TO PAGE; USE CANCEL TO EXIT)

In your MANTIS interface program, code:

```

10/ INTERFACE TESTPGM("TESTFACE", "ALIBABA")
20 .
30 .
.
90 CALL TESTPGM
    
```

The CICS/VS Command-Level source listing will be as follows:

```

000001 IDENTIFICATION DIVISION.
000002     PROGRAM-ID.  USERFACE.
000003 ENVIRONMENT DIVISION.
000004 DATA DIVISION.
000005 WORKING-STORAGE SECTION.
000006 01  RECORD-AREA.
000007 03  REC-NID  PIC S9(5)    COMP-3.
000008 03  REC-AMT  PIC S9(7)    COMP-3.
000009 03  REC-SEQ  PIC S9(3)    COMP-3.
000010 03  REC-BRUT PIC S9(5).
000011 03  REC-SUPLL PIC S9(5)    COMP-3.
000012 03  REC-BAL  PIC S9(5)V99 COMP.
000013 03  REC-NOM  PIC X(20).
000014 LINKAGE SECTION.
000015 01  DFHBLDLS  COPY DFHBLDLS.
000016 02  SAACBAR.  PIC 9(8)     COMP.
000017 01  DFHCSADS  COPY DFHCSADS.
000018 01  DFHTCADS  COPY DFHTCADS.
000019 02  TWA
000020 05  INTERFACE-AREA-ADDR PIC S9(8)    COMP.
000021 01  DFHSAADS  COPY DFHSAADS.
000022 02  DATA-AREA.
000023     05  MANTIS-HEADER.
000024         07  STATUS RETURN  PIC X(8).
000025     05  MANTIS-DATA.
000026         07  FUNCTION-REQ PIC X(8).
000027         07  MAN-NID  PIC S9(5)    COMP-3.
000028         07  MAN-BRUT PIC S9(5).
000029         07  MAN-NOM  PIC X(20).
000030         07  MAN-AMT  PIC S9(7)    COMP-3.
000031         07  MAN-BAL  PIC S9(5)V99 COMP.
000032 PROCEDURE DIVISION.
000034 EXEC CICS ADDRESS CSA(CSACBAR)                <===== Establish
000035     END-EXEC.                                     address to inter-
000036 MOVE CSACDTA TO TCACBAR.                         face area (buffer)
000037 MOVE INTERFACE-AREA-ADDR TO SAACBAR.            MANTIS sent.
000038 MOVE MAN-NID TO REC-NID.
000039 MOVE MAN-BRUT TO REC-BRUT.
000040 MOVE MAN-NOM TO REC-NOM.
000041 MOVE MAN-AMT TO REC-AMT.
000042 MOVE MAN-BAL TO REC-BAL.
000043 MOVE 'OK' TO STATUS-RETURN.
000044 EXEC CICS          RETURN
000045     END-EXEC.

```

The CMS source listing will be as follows:

```
000001 IDENTIFICATION DIVISION.
000002     PROGRAM-ID. TESTCOB.
000003 ENVIRONMENT DIVISION.
000004 DATA DIVISION.
000005 WORKING-STORAGE SECTION.
000006 01 RECORD-AREA.
000007     02 REC-NIDPIC S9(5) COMP-3.
000008     02 REC-AMTPIC S9(7) COMP-3.
000009     02 REC-SEQPIC S9(3) COMP-3.
000010     02 REC-BRUT PIC S9(5).
000011     02 REC-SUPLL PIC S9(5) COMP-3.
000012     02 REC-BALPIC S9(5)V99 COMP.
000013     02 REC-NOMPIC X(20).
000014 LINKAGE SECTION.
000015 01 DATA-AREA.
000016     05 MANTIS-HEADER.
000017         07 STATUS-RETURNEDPIC X(8).
000018     05 MANTIS-DATA.
000019         07 FUNCTION-REQPIC X(8).
000020         07 MAN-NID PIC S9(5) COMP-3.
000021         07 MAN-BRUT PIC S9(5).
000022         07 MAN-NOM PIC X(20).
000023         07 MAN-AMT PIC S9(7) COMP-3.
000024         07 MAN-BAL PIC S9(5)V99 COMP.
000025 PROCEDURE DIVISION USING DATA-AREA.
000026     MOVE MAN-NID TO REC-NID.
000027         = .
000028         etc. .etc.
000029     MOVE 'OK' TO STATUS-RETURNED.
000030     GOBACK.
```

# B

## Recovery

MANTIS provides data integrity by ensuring that any updates to data stored in external, TOTAL, SUPRA RDM, or MANTIS files are properly maintained. While MANTIS automatically ensures most aspects of data integrity, certain applications require you to have specialized knowledge of how MANTIS handles data to ensure proper data integrity and recovery. In these cases, you direct MANTIS to provide special recovery points, called COMMIT points. There are two types of COMMIT points:

- ◆ MANTIS-generated COMMIT points
- ◆ User-specified COMMIT points

### MANTIS-generated COMMIT points

MANTIS groups update accesses to user data into units of work called Logical Units of Work (LUW). The maximum span of the LUW is from one terminal read to another terminal read. In other words, the LUW cannot cross terminal reads. This is a very important point since it is critical to correctly determine the scope of the LUW for proper application design. The following table illustrates update accesses.

The end limits of the LUW are the COMMIT points (sometimes called synchronization points). If at terminal-read time there are uncommitted updates, MANTIS generates a COMMIT. (MANTIS statements that generate a COMMIT are CONVERSE, OBTAIN, SHOW, and WAIT.) For this reason, the COMMIT points normally coincide with terminal reads. You can also specify extra COMMIT points in your application program through the COMMIT statement.

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	...
...	ru	ri	ru	tw	cm	tr	ru	ru	ru	rd	ri	ri	ru	tw	cm	tr	ru	...

In the preceding table:

- ◆ **ru.** Represents record update operations.
- ◆ **ri.** Represents record insertion.
- ◆ **rd.** Represents record deletion.
- ◆ **tw.** Represents terminal-write operation.
- ◆ **tr.** Represents terminal-read operation.
- ◆ **cm.** Represents COMMIT point.

Once MANTIS commits the updates, they cannot be backed out. If the updates are uncommitted (due to system or application failure), MANTIS causes the TP monitor to back out the updates to the last COMMIT point. Such update back-out is called transaction recovery.

The following table illustrates an incomplete LUW and the next table, subsequent transaction recovery:

TIME	1	2	3	4	5	6	7	8	9	10	11	
...	ru	ri	ru	tw	Cm	tr	ru	ru	ru	rd	ri	*

In the preceding table, “\*” represents system failure

MANTIS, with the help of CICS, backs out events 7, 8, 9, 10, and 11.

The backing out happens in the reverse order. Event 3 (record update) is not backed out since it is committed (event 5).

TIME	1	2	3	4	5	6
...	ru	ri	ru	tw	cm	tr

At the end of transaction recovery, your files and the DBMS are restored to their positions at the last COMMIT point, as shown in the preceding table. You can therefore be sure that an incomplete LUW is always backed out and data integrity is intact.

## Specifying your own COMMIT points

In addition to MANTIS-generated COMMIT points, you can use the COMMIT statement to add COMMIT points to suit the demands of the application. Code explicit COMMITs in the MANTIS program when an interface program is doing updates, deletes, or inserts. MANTIS only implicitly commits resources that it has updated. It does not know if an interface has made modifications that require committing. (For details on the COMMIT statement, refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002.) To ensure that file/database updates are committed in interface programs, consider using the customization option COMFACE=Y which will issue a COMMIT at the next terminal I/O following an interface program call. (For details on the COMFACE parameter, refer to *MANTIS Administration, OS/390, VSE/ESA*, P39-5005).

If we take the example from the previous section and add a user-generated COMMIT point after event 9, we have the following sequence of events:

TIME	1	2	3	4	5	6	7	8	9	10	11	12	
...	ru	Ri	ru	tw	cm	tr	ru	ru	ru	cm	rd	ri	*

Transaction recovery will back out events 12 and 11, but will not back out 9, 8, and 7 due to the user-generated COMMIT point.

Such subdivisions of LUWs may be necessary for certain applications, but you should carefully consider the additional COMMIT points you want to place in the application. Apart from the fact that such COMMIT points may adversely impact the original aim of the application, they also consume a considerable amount of machine resources.

## Enqueueing on resources

Application programs running concurrently may try to update the same record. For example, Program A reads a record, then does other processing. Meanwhile, Program B reads and updates the same record. Now, Program A wants to update the record without first rereading it. If allowed, Program A would update the record without any regard to what changes Program B might have made to the record.

To prevent such situations, MANTIS provides a facility for application programs to enqueue on resources. There are two ways to enqueue on resources, depending on whether the record resides on the DBMS:

- ◆ Issue a GET statement with the ENQUEUE parameter (DBMS, external files and RDM files).
- ◆ Code an ENQUEUE statement to control updates to specific data.

### Method 1

The first method (for DBMS, external files, and RDM files) involves issuing a GET statement with the ENQUEUE parameter. This reserves the record for UPDATE access for the current application program and prevents any other application programs from updating the record at the same time. The record is only reserved within the scope of the DBMS and RDM systems. When the record is updated by the application program and the end of the LUW is reached, the record becomes available for any other application program that needs to perform an UPDATE. Regardless of the record update, the scope of the ENQUEUE using the GET statement may not stretch past the end of the LUW, which in turn cannot stretch past a terminal-read operation. (MANTIS statements that terminate the scope of ENQUEUE by generating a COMMIT are CONVERSE, OBTAIN, SHOW, and WAIT.)

## Method 2

The second method involves the ENQUEUE statement and an arbitrarily named resource. The resource name is a text expression you assign as an agreed representation for all programs of the actual resource. For example, the following MANTIS statement inserted in all application programs having an UPDATE capability for the invoices file ensures that the application program has exclusive control of "INVOICE.xxxxxx" before changing any data affecting that particular invoice:

```
ENQUEUE "INVOICE." +TXT(INVOICE_NUMBER)
```

The exclusive control of the named resource is released when the application program issues the DEQUEUE statement for the same resource name or when the end of the LUW is reached.



---

If the user was defined as pseudo-conversational (CONVERSATIONAL MODE=NO in the user definition) the scope of the ENQUEUE will not stretch past a COMMIT. If the user is defined as conversational, the scope of the ENQUEUE will be until a DEQUEUE is done on the same resource.

---

When an application needs to reserve more than one resource, the application program *must* ensure that the sequence in which the resources are reserved is always the same and is also identical to the sequence used by other programs reserving these resources. If this rule is not observed, application program lockouts may occur due to two or more programs trying to obtain exclusive control of resources that are already controlled by these programs.

## Concurrent updating

To ensure that an application program operates on the most recent version of files and resources, you must provide for concurrent updating. This section contains information on concurrent updating of:

- ◆ DBMS, external, and RDM files
- ◆ MANTIS and external files
- ◆ Resources accessible through the interface

### DBMS, external, and RDM files

To ensure that an application program operates on the most recent version of the DBMS or RDM record, the application program can first issue a GET statement with the ENQUEUE parameter to obtain the latest copy of the record or issue the ENQUEUE statement for the named resource prior to issuing a GET to read the record. When exclusive control is obtained, the application program can decide either to update or to delete the record. If the record is already enqueued by another program, the current program is suspended until the other one comes to the end of the LUW.

The application program releases control of reserved records by issuing the COMMIT or the DEQUEUE (DBMS and external files only) statement. The COMMIT confirms that the end of LUW has been successfully reached and that all the enqueued resources are now available for access by other programs. The DEQUEUE (DBMS and external files only) statement means that other programs may now enqueue on the released resources (if the reserved record was not updated), but it does not mean that the end of the LUW has been reached. (A COMMIT will be issued by MANTIS for the CONVERSE, OBTAIN, SHOW, and WAIT statements.)

## **MANTIS and external files**

To ensure that no duplicate updates occur, you must issue the ENQUEUE statement to reserve the named resource. When the resource is properly reserved, the program will obtain the record through the GET statement and update or delete it. When all the updates that may affect the resource are complete, the program should issue the DEQUEUE or COMMIT statement to enable other programs update access to the resource. (Remember that the DEQUEUE statement means other programs can enqueue on the released resources, but it does not mean that the end of the LUW has been reached.)

## **Resources accessible through the interface**

Your interface program can access data in the DBMS, in external files, or in a combination of both. You must carefully review the implications of concurrent updates before writing the interface program. In general, if resource enqueueing is required, the interface program should do it. The interface program should follow the recommendations for CICS programs for proper resource protection.

## Transaction recovery

This section provides information for performing transaction recoveries after a system failure and after an application failure.

### System failure

The LUW provides a convenient yardstick for assessing the point to which a transaction is backed out after a system failure.

Updates that are associated with a completed LUW are left intact. Updates that are associated with an incomplete LUW are backed out after system restart. The backing out occurs for all application programs that at the time of failure were in the middle of an incomplete LUW. All application programs are signed off after the restart and are not allowed to continue.

### Application failure

If the application fails, MANTIS backs out any updates done during the scope of the incomplete LUW and displays an error message.

Under CICS, MANTIS terminates the application program and does not sign off from the system.

When you detect a logical application failure, you can issue the RESET statement to reset all updates done during the LUW. MANTIS processes the RESET as a typical application failure. All the above rules apply in this case, but MANTIS generates no error message.

# C

## Using edit masks to format numeric fields

Edit masks are edit characters you use to format a numeric data field. You use edit masks mainly for formatting output (that is, protected) fields. However, you can use edit masks for input/output fields. In these cases, the formatting characters are ignored by MANTIS.

For example, if you want to display a list of dollar amounts in a column, you can use an edit mask that displays the amounts in a right-justified format:

```
123.48  
1,245.78  
22,587.33
```

## General considerations

- ◆ Masks are used in both screen design for numeric fields and for the FORMAT function.
- ◆ If you are unsure of the results of a particular mask and how the various characters interact, you can experiment with the FORMAT function to determine the output. You can also use the FORMAT function to have changeable output masking for a single field on the screen. Then you would normally need to do a VALUE function to convert the screen text field to a numeric value.
- ◆ When you use edit masks in screen design, they must contain at least one hash character (#), or MANTIS treats the field as a heading field.



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By default, MANTIS uses a # for the mask character. Your system administrator may have changed this default.

In screen design, you must use a vertical bar ( | ) to represent a blank within a single field. (Otherwise, a blank space separates two different fields.) In the FORMAT function mask argument, you use a blank character, since there is no chance for ambiguity. In the FORMAT function, a vertical bar is treated as any other fixed position or fill character.

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- ◆ An edit mask cannot contain any numeric characters. If MANTIS encounters a numeric character in an edit mask, it treats the number as the blank fill character (default is the vertical bar [ | ]).
- ◆ Use a blank fill character ( | ) to represent any blanks in a screen design field.
- ◆ MANTIS fills an edit mask from right to left. If the mask contains a decimal point, MANTIS first tries to fill the spaces following the decimal, then continues by filling the mask to the left of the decimal point, from right to left.

In the first example below, MANTIS uses an implied decimal after the 4, so it fills the mask to the left of the decimal point from right to left. In the second example, a decimal point is provided with the data, so MANTIS first fills the positions to the right of the decimal point, then finishes filling the mask to the left of the decimal from right to left shown in the following table:

Edit mask	Data	Display
1. #####.##	12004	12004.00
2. ####.##	120.04	120.04



In some countries a comma (,) is defined as a decimal point instead of a period(.). Your system administrator will assign which character to use in your user profile.

- ◆ Specifying a fixed-position character causes formatting to occur. For example, |##### causes formatting so only the integer value is displayed and the digits are right-justified. Edit masks containing only hash characters (#) cause the numeric field to be left-justified and displayed in best-fit format, including E-notation when needed.
- ◆ When you enter data into a numeric field, MANTIS checks the number for correct format. If your entry is in an invalid format, MANTIS highlights the invalid field, positions the cursor at the beginning of the field, and displays a NUCIINE message in the message field. At this point, MANTIS has moved all correct data into the corresponding variables in the program, but not for any fields in error. Control does not pass back to the application program. You must correct the invalid field or enter KILL before processing can continue.

Edit masks use certain types of edit characters for different formatting functions. You can use these edit character types singly or string them together to achieve the desired format. MANTIS uses five types of edit characters for formatting edit masks.

Float characters	Any character except the mask character (#) and a blank or blank fill character.
Fill characters	Any character except the mask character (#) and a blank or blank fill character.
Sign characters	Plus (+) and minus (-) signs, CR, DR, and DB.
Fixed-position characters	Any character except the mask character (#) and + or - when used as sign characters.
Data position characters	The mask character (#) and Z.



---

If the result is all zeros, and the zero fill (Z) has not been used: no fill, float or fixed position characters will appear.

---

## Using float characters

A float character is any character (other than blank, #, +, or -) that occupies the first and at least one more consecutive position of the edit mask. A float character is one that can be used as a data position character, but the character itself “floats” to immediately precede the first significant digit or last occurrence of the float character. An example of this would be a currency symbol that floats to precede the first digit.

You can break a string of float characters with a comma (fixed-position character) as long as two or more float characters occur consecutively before and after the comma. The float character string terminates on the first occurrence of another character regardless of whether the float character appears elsewhere in the mask.

The sign characters, plus (+) and minus (-), are automatically float characters when they appear in the first position of the mask. If an additional sign character occurs, MANTIS treats it as a fill character and negates the effect of the floating sign character.

One float character will always appear in the display format since the first float character can never be replaced with a data character. Remember to specify one more float character than the maximum number of data characters you want to display.

In the following examples, MANTIS treats the \$ and + sign as float characters:

Edit mask	Data	Display
<<<<<<.##>	1234.98	<1234.98>
<<<##,###.##>	1234.98	< 1,234.98>
\$\$\$,\$\$#,###.##	0	
\$\$\$,\$\$#,###.##	1234.98	\$1,234.98

## Using fill characters

A fill character is any character (other than blank or #) that occurs in consecutive positions in a mask, but does not begin in the first position. A fill character is a data position character that substitutes as-is for all non-significant 0 digits. An example of this is a “\*” fill character used in checkwriting numbers. Using the # as a data position character will result in blanks displaying for non-significant digits.

Multiple fill characters can appear in the same mask. All fill character positions can be filled with numeric data characters.

An exception to this rule is the sign characters (+ and -) incorrectly specified as floating characters so a consecutive string of sign characters appears at the beginning of the edit mask; MANTIS treats only the first occurrence as a floating sign. MANTIS treats additional occurrences of the sign characters as fill characters. If there is only one additional occurrence, MANTIS treats the sign character as a fixed character shown in the following table:

Edit mask	Data	Display
###BBT	546	546T (fill character)
BBT###	546	BT546 (float character)
+++###	1546	++1546 (fill character)
+#####	1546	+1546 (float character)

The following is an example of an edit mask format that you might use on a display screen in a check writing application. The example uses an asterisk (\*) as a fill character.

Edit mask	Data	Display
\$*****.##	1234.98	\$**1234.98

## Using sign characters

Sign characters include the plus (+) or minus (-) signs and the Credit (CR) or Debit (DR or DB) signs. The sign characters signify the algebraic sign of the numeric value. The plus (+) or minus (-) sign character can appear in the first or last position of an edit mask. A floating sign character appears in the first position of the mask or the right-most, blank fill position from the beginning of the mask. The Credit (CR) and Debit (DR or DB) signs can appear in the last two positions of the mask.



You can use the sign characters CR, DR, and DB only for displaying the output of numeric fields. MANTIS does not interpret CR, DR, and DB as sign characters on input.

The sign characters work in an edit mask as follows:

- + + displays for a positive value and - displays for a negative value.
- A blank character displays for a positive value and - displays for a negative value.
- CR Credit displays for a positive value and DR (Debit) displays for a negative value.
- DR A blank character displays for a positive value and DR (Debit) displays for a negative value.
- DB Blank characters display for a positive value and DB (Debit) displays for a negative value.

If you have a sequence of at least three sign characters (+ and -) in the first position of the edit mask, the first occurrence acts as a floating character and those following are treated as fill characters shown in the following table:

Edit mask	Data	Display
\$\$\$\$.## CR	138	\$138.00 CR
\$\$\$\$.## CR	-138	\$138.00 DR
+---###.##	138	+---138.00
+---###.##	-138	---138.00
+****#.##	138	+***138.00
+***---**#.##	-138	-***138.00

The Customization Macro contains a parameter called POSITIV that reverses the effect of a CR/DR edit mask. If you set POSITIV to CR (default), blanks display for a positive value; CR displays for a negative value. If you set POSITIV to DR, blanks display for a negative value; DR displays for a positive value. (See your system administrator for your installation's setting of this value.) For example:

Numeric value	Mask string	Default result	POSITIV=DR result
+19	"### CR"	19 CR	19
-19	"### CR"	19 DR	19 CR
+19	"### DR"	19	19 DR
-19	"### DR"	19 DR	19

For more information on setting the POSITIV parameter in the Customization Macro, see your Master User or refer to *MANTIS Administration, OS/390, VSE/ESA*, P39-5005.

## Using fixed-position characters

A fixed-position character is any character (other than # or the sign characters when they occur as fill or floating characters) that does not occur in consecutive positions in a mask. A fixed-position character is substituted verbatim into the output field. MANTIS always treats a blank or a vertical bar (|) as a fixed-position character.

Fixed-position characters always display in the mask except in the following cases:

- ◆ When a comma is a fixed position character, the period is used as a decimal point and zero-filling does not occur. For example, a fixed-position comma will be replaced by a blank character if the character to the left of the comma is blank. See the following table:

Edit mask	Data	Display
###,###.##	200	200.00

An additional example is the fixed-position character being replaced by the float character, if the character to the left of the comma is a float character (zero or blank fill, in this case). See the following table:

Edit mask	Data	Display
\$\$\$,\$\$#.##	200	\$200.00

- ◆ If the comma is used as a decimal point and zero-filling is not occurring, a period will be replaced under the same conditions that appear for the comma as shown in the above example.
- ◆ If the decimal point character occurs more than once as a fixed-position character, it is treated as a punctuation character, not a decimal point, and the mask has no decimal places.

Edit mask	Data	Display
Exactly****Z.##	200	Exactly**200.00
Quantity>#####	200	Quantity> 200
Quantity>#####	0	
(###) ###-####	5136122300	(513) 612-2300
Z##:##@#####	0123456789	012:34@56789

## Using data position characters

A data position character is used where digits of the numeric value are substituted. Use a hash character (#) or a single Z for data position characters, where the Z is preceded or trailed by hash signs, by a fill character (other than a Z), or by a decimal point (period or comma).

Data position characters to the right of the decimal point are always zero-filled.

Numbers will be rounded to the number of decimal places present in the mask, including no decimals if a decimal point does not appear. If this numeric value is modified on the screen or the MODIFIED attribute is set, the variable will have the rounded value.

The first occurrence of the Z character indicates that MANTIS should zero-fill the mask from this position. This position and any data position characters that occur in the mask to the right of this position will be filled with zeros. MANTIS replaces non-significant data position characters to the left of the Z with blanks, as shown in the following table:

Edit mask	Data	Display
\$\$#Z.##	100	\$100.00
\$\$#Z.##	0	\$ 0.00
\$\$\$Z.##	0	\$0.00
Z##-##-####	012345678	012-34-5678
#####Z	0	0

## General considerations

- ◆ You will probably not want to use the Z data-position character to format a field in a data-entry (unprotected, input) field. For example, if you format a field with the following mask and converse the screen, the field appears with the cursor in the first position and a 0 in the fifth position. The terminal operator will need to erase or overlay characters to do data input.

Edit Mask        #####Z

Conversed Screen \_     0

Any unformatted data occurring in the mask at the Z or to the right of Z is filled with zeros when it is displayed on the screen. MANTIS interprets this as part of the data you entered if your input does not completely fill the field. This format is, in most cases, more appropriate for a data display screen.

- ◆ MANTIS does not display data position characters (except zero-fill) in the formatted mask if the resulting numeric value would not fill all available data positions. (Fill and float characters can also designate data positions, but they provide the special formatting capabilities discussed earlier.)
- ◆ MANTIS treats consecutive occurrences of the Z character under the conditions of the fill and float characters discussed earlier. They do not trigger zero-fill.
- ◆ If there are not enough data position characters to display all the significant digits of the number (with the exception of (rounded) decimal places, the entire field is filled with asterisks ( \* ).

## Using an edit mask to specify autoskip

For easy data entry, you can specify that your cursor automatically skips from one unprotected field to the next. You can specify automatic skipping in two ways:

- ◆ Specify autoskip when you define field attributes (see “[Updating field specifications](#)” on page 73).
- ◆ Follow a field with a blank character or with a group of characters. The group of characters should include a blank character, a blank fill character (e.g., a vertical bar), and a blank character (b). If more than one blank follows a field (before the next heading or data field) and you do not define the AUTOSKIP attribute, the cursor does not skip automatically.

Edit characters embedded in a numeric field affect the length of that field for automatic skipping. They also affect the terminal operation in that extraneous edit characters must be skipped over or residual characters on the end of the field deleted.

For example, if you enter a field eight characters long including two edit characters (##/##/##), six characters are required for input, but eight characters are required for automatic skipping to the next field, as shown in the following table:

Edit mask	Data	Display
##/##/##	082297 (August 22, 1997)	08/22/97
##/##/##	12297 (January 22, 1997)	1/22/97
##/##/##	12297 (December 2, 1997)	1/22/97—invalid



Edit masks provide you with an extremely flexible mechanism for defining complex formatting patterns for numeric data. Since it is important to ensure that the edit mask you create will produce the expected results, you can test an edit mask in programming mode using the SHOW statement and FORMAT function as follows:

```
SHOW FORMAT (number, "mask")
```

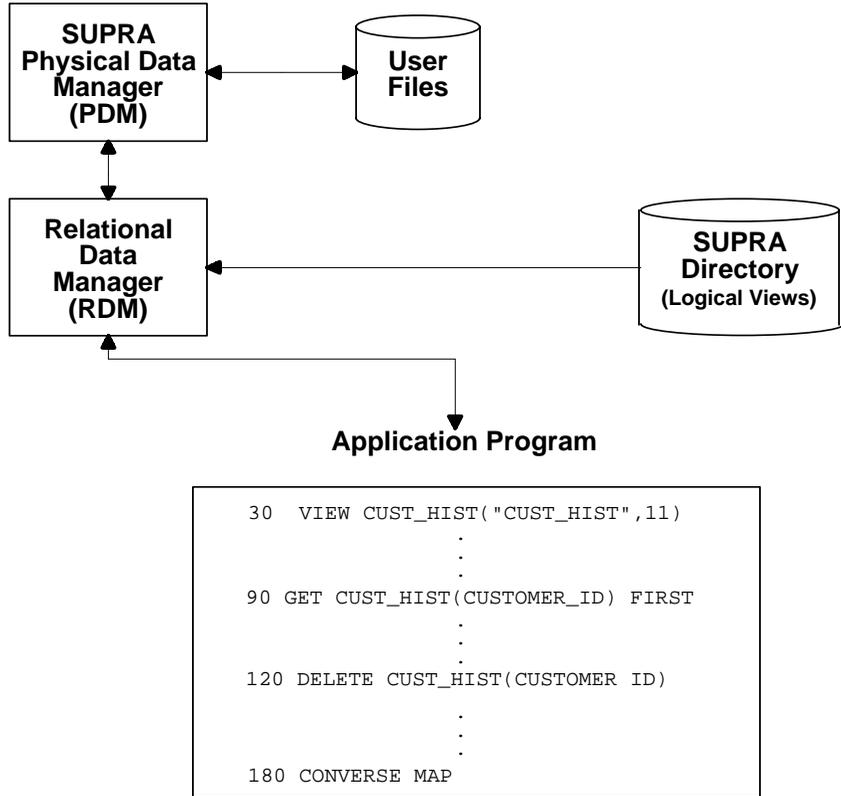
Refer to [MANTIS Language, OS/390, VSE/ESA](#), P39-5002, for information on using the SHOW statement.

# D

## Accessing logical views using SUPRA RDM

The SUPRA Relational Data Manager (RDM) is the SUPRA component that allows MANTIS programs to access SUPRA logical views. A logical view is a set of one or more logical records (data) defined by the DBA. The RDM is a record-by-record Relational Data Manager. Fields are mapped between the externally constructed logical record and the Physical Data Manager (PDM) through the Directory.

You can access the data contained in logical views through your MANTIS program by using the RDM. The following figure illustrates the flow of information from your MANTIS program to the RDM. For details on the syntax and use of MANTIS statements in this chapter, refer to *MANTIS Language, OS/390, VSE/ESA*, P39-5002.



The DBA defines logical views in the SUPRA Directory by describing the fields needed and by providing access to the files containing these fields. Once your DBA has defined the fields to be included in a logical view, you can use all or part of the logical view.



You can only design logical views in the SUPRA Directory. There is no MANTIS RDM Design Facility.

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## Accessing the RDM

To access the RDM, your MANTIS password and your password on the SUPRA Directory should be the same or you can use a VIEW statement to perform an RDM sign on.



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Your password may be up to 16 characters in length.

---

The VIEW statement in your MANTIS application program specifies the logical view you want to use. The specified view will then be retrieved from the SUPRA Directory. MANTIS variables will appear as they are defined in the directory with two exceptions:

- ◆ MANTIS converts all hyphens in logical view field names to underscores in MANTIS variable names and vice versa.
- ◆ The \$ and # characters are invalid in MANTIS. If a logical view has field names with these characters, MANTIS returns an error message.

The SELECT clause in the VIEW statement allows you to indicate that you only want a subset of fields for your logical view. This subset is called a user view.

The GET, UPDATE, INSERT, and DELETE statements allow you to manipulate records on an occurrence-by-occurrence basis.

The MARK statement obtains the current position of the logical view established by the last GET, UPDATE, or INSERT statement. You must open the file by processing the associated VIEW statement before you can mark that view. Use the RELEASE statement to free RDM's internal storage for all views currently opened. You can also specify individual views on the RELEASE statement.

In the process of building a logical record, if RDM is unable to acquire a packed or zoned field from a physical file, it will mark the field as missing or null. If it is unable to acquire a TEXT field, it will mark the field as blank. If an UPDATE is issued and the field is no longer null, RDM will automatically insert the physical record containing the field. MANTIS will keep track of these fields to ensure that RDM knows a field is missing when an update is attempted.

## Accessing the Directory of Logical Views

The Directory of Logical Views allows you to view an alphabetic listing of all SUPRA RDM logical views. To access this directory, select the Directory Facility option or by typing the option number in the selection field and pressing ENTER. The MANTIS Facility Selection Menu is shown in the following screen illustration:

```

FAC002                MANTIS Facility Selection Menu                YYYY/MM/DD
                        TEST                                        HH:MM:SS
Please select one of the menu options below.

_____
Run a Program by Name ..... 1  Sign On as Another User .... 11
Display a Prompter ..... 2  Search Facility ..... 12
Design a Program ..... 3  Query Report Writer ..... 13
Design a Screen ..... 4  Directory Facility ..... 14
Design a MANTIS File View .. 5  Transfer Facility ..... 15
Design a Prompter ..... 6  Cross Reference Facility ... 16
Design an Interface ..... 7  Entity Transformers ..... 17
Design a TOTAL File View ... 8  Universal Export Facility .. 18
Design an External File View 9  Print Facility ..... 19
DL/I Access View ..... 10

F1=HELP  F3=END  F12=CANCEL
    
```

Select the Logical Views option by typing an 8 in the selection field and pressing ENTER or by pressing PF8. MANTIS returns the Directory Facility menu screen shown in the following screen illustration:

```

DIR001                M A N T I S                YYYY/MM/DD
List                  HH:MM:SS

                        Directory Facility

Programs ..... 1          DL/I Call Profiles ..... 13
Screens ..... 2          DL/I Segment Layouts ..... 14
MANTIS File Profiles .. 3
Prompters ..... 4
Interfaces ..... 5
TOTAL File Views ..... 6
External File Views ... 7          Toggle Print On ..... 24
Logical Views ..... 8          Terminate This Facility .. Cancel
Scenarios ..... 9

                        :      :
    
```

MANTIS returns the Directory of Logical Views displays a list of the logical views you can access. Enter an S in the Sel field (as shown below) to indicate the logical views you want to display as shown in the following screen illustration: (For information on printing this list, see “Printing MANTIS entities using the Print Facility” on page 330.)

DIRECTORY OF Logical Views			YYYY/MM/DD
USER			HH:MM:SS
Sel	-----Name-----	--Date--	--Time--
	CUSTOMER-INFO	YYYY/MM/DD	HH:MM:SS
	INVC	YYYY/MM/DD	HH:MM:SS
	INVL	YYYY/MM/DD	HH:MM:SS
	INVOICE	YYYY/MM/DD	HH:MM:SS
	COMPLETE INVOICE INFORMATION		
	MAIN-WAREHOUSE-INVENTORY	YYYY/MM/DD	HH:MM:SS
	WAREHOUSE PRODUCTS AND SUPPLIERS OR ASSEMBLIES		
	MANF	YYYY/MM/DD	HH:MM:SS
	MANIFEST	YYYY/MM/DD	HH:MM:SS
	VIEW OF MANIFEST INFORMATION		
	MANL	YYYY/MM/DD	HH:MM:SS
	MANTIS-WORKSHOP-1	YYYY/MM/DD	HH:MM:SS

MANTIS displays the name of the current user and the current date and time at the top of the screen. The following field descriptions apply shown in the preceding screen illustration:

---

**Sel**

**Description** *Required* to display a view. Indicates the logical view you want to see.

**Consideration** Enter an S in the Sel field on the line or lines in front of the view(s) you want to see in detail.

---

**Name**

**Description** *Display*. Shows an alphabetical listing of the logical views you are authorized to access. A description of the logical view appears below.

---

**Date**

**Description** *Display*. Shows the date of the most recent update to the view.

---

**Time**

**Description** *Display*. Shows the time of most recent update to the view.

---

**Description**

**Description** *Display*. Shows the description of the logical view, if one was specified when it was created.

At any time during the directory listing, you can press the CANCEL key to return to the MANTIS Directory Facility menu (see “[Accessing the Directory of Logical Views](#)” on page 576).

When you enter an S in a Sel field and press ENTER, MANTIS returns the RDM Logical View definition screen shown in the following screen illustration:

```

                                Logical View
Name : CUST-INFO
Date :YYYY/MM/DD   Fields :  8   Keys :  1   Nonuniques :      Insertable :
Time : HH:MM:SS   Levels :  2   Reqs :  2   Deletable  :      Replacable :
Option Name----- Type  Len Lvl Dec Format Allow-----
KEY  CUSTOMER_NO      TEXT   6      CHAR
     CUSTOMER_NAME    TEXT  20      CHAR
     CUSTOMER_ADDR    TEXT  20      CHAR
     CUSTOMER_CITY    TEXT  13      CHAR
     CUSTOMER_STATE   TEXT   2      CHAR
     CUSTOMER_ZIPCODE BIG    5      ZONED
REQUIR INVOICE_NO     TEXT   4   1      CHAR
       INVOICE_TOTAL  BIG    9   1  2  ZONED

MPFX42I:Use ENTER for next page; PF1 for next view; CANCEL to exit

```

The following field descriptions apply to the RDM Logical View Definition screen shown in the preceding screen illustration.

---

**Name**

**Description** *Display.* Shows the name of the logical view currently being accessed.

---

**Date and Time**

**Description** *Display.* Shows the date and time of the last update to the logical view.

---

**Fields**

**Description** *Display.* Shows the number of fields in the view.

---

**Levels**

**Description** *Display.* Shows the number of levels in the view.

---

**Keys**

**Description** *Display.* Shows the number of keys in the view.

---

**Reqs**

**Description** *Display.* Shows the number of required fields in the view.

---

**Nonuniques**

**Description** *Display.* Shows the number of nonunique fields in the view.

---

**Deletable**

**Description** *Display.* Shows the number of deletable fields in the view.

---

**Insertable**

**Description** *Display.* Shows the number of insertable fields in the view.

---

**Replacable**

**Description** *Display.* Shows the number of replaceable fields in the view.

---

**Option**

**Description** *Display.* Shows the field type, for example, KEY or REQUIRED.

---

**Name**

**Description** *Display.* Shows the field name in the view.

---

**Type**

**Description** *Display.* Shows the MANTIS internal data type—TEXT, BIG, SMALL, or KANJI.



---

A FORMAT of PACKED with a length greater than 8 bytes and no decimals will have a type of TEXT. A FORMAT of ZONED with a length greater than 15 bytes and no decimals will have a type of TEXT.

---

---

**Len**

**Description** *Display.* Shows the length of the field in bytes.

---

**Lev**

**Description** *Display.* Shows the level of the field in the view hierarchy.

**Consideration** Fields from the first physical record accessed in the view have LEVEL 0. Fields from the physical record(s) accessed directly from the first level are LEVEL 1, and so on.

---

**Dec**

**Description** *Display.* Shows the number of decimal places in the field.

## Format

**Description** *Display.* Shows the format in which the data is stored on the view.

**Options** CHARACTER Character string  
BINARY Binary (full word)  
PACKED Decimal packed  
HALFWORD Half word binary  
ZONED Zoned (unpacked ) decimal  
KANJI Kanji (DBCS) data



---

A FORMAT of PACKED with a length greater than 8 bytes and no decimals will have a type of TEXT. A FORMAT of ZONED with a length greater than 15 bytes and no decimals will have a type of TEXT.

---

## Allow

**Description** *Display.* Shows the allowed function(s) for the view.

**Options** DEL Delete  
INS Insert  
REP Replace  
ALL  
BLANKS (indicates READ access allowed)

When you finish viewing the field definitions on this page, press ENTER to move to the next page of the view definition. Press PF1 to move to field definitions for the next selected view or press the CANCEL key until you return to the Directory of Logical Views screen (illustrated earlier in this section).

# Glossary of terms

## **\* (asterisk)**

Wildcard character entered on directory list screens and in the Starting Name field of the Transfer facility to represent an indefinite number of characters in a generic pattern of entity names (e.g., PROG\*).

## **? (question mark)**

Wildcard character entered on directory lists and in the Starting Name field of the Transfer Facility to represent a single character in a generic pattern of entity names. For example, BURRYS??? designates an entity (or entities) whose name begins with BURRYS and ends with any three characters.

## **| (vertical bar)**

Default blank fill character used in Screen Design. Because MANTIS interprets a blank space as a new field, *you use* the blank fill character to connect words or letters in heading fields. Using the blank fill character optimizes transmission and screen storage.

## **area layout**

Defines the elements within an interface profile, for example, element name, type, format, and so on. An existing area layout can be associated with other interface designs.

## **attribute**

Specific characteristic(s) assigned to the fields in a screen during a screen design session, for example, field name, field length, vertical and horizontal repeats, color, highlight, protected, unprotected. Most field attributes can also be set in programming mode using the ATTRIBUTE statement.

## **autoskip**

Screen design attribute that causes the cursor to skip automatically from one unprotected field to the next when data is transmitted to and from the data fields. Autoskip can also be invoked if you use blank spaces instead of vertical bars to separate data fields.

## **background task**

An active CICS MANTIS task which is not attached to a terminal device.

## **batch access subroutine (MANTIS1)**

Subroutine that allows non-MANTIS batch programs to access online MANTIS files.

## **batch input stream**

Statements you create and submit to run a batch facility. The input stream contains JCL for environment specifications and function statements for your batch job.

## **Batch Dialog Facility**

A facility that allows you to run several Program Design Facility functions in batch. Like the MANTIS Print Facility, the Batch Dialog Facility uses a batch stream containing function statements to execute, as opposed to using a batch stream that simulates online mode.

## **BIG**

A data type occupying a double-precision floating point variable.

## **CHAIN**

A generic data structure which has a beginning and an end. A chain is normally searched sequentially, and elements can be inserted into or deleted from a chain at any point (e.g., a prompter chain).

## **cluster**

A VSAM data set, specifically the VSAM data set used to hold MANTIS entities and MANTIS (internal) files.

**column scale line**

Indicates current column position on screen design. The column scale line is particularly useful when you design very large screens.

**command line**

The area on a Screen Design screen where you can enter Screen Design commands such as COPY, DELETE, INSERT, and so on.

**command**

An action you enter on the command line when designing a screen or program. A command can be made up of an *action* (COPY, INSERT, MOVE, and so on) and an *operand* (e.g., the line number[s] to copy).

**COMMIT points**

Point at the end of a Logical Unit of Work (LUW) (sometimes called a synchronization point) where MANTIS automatically generates a COMMIT if it encounters any uncommitted updates. COMMIT points can also be specified by the user.

**concurrent updating**

Process that ensures an application program operates on the most recent version of files and resources. Concurrent updating can be performed on DBMS, External and RDM files.

**copy**

In the Transfer Facility, the action that copies an entity or group of entities *from* your library (or another library) *to* a Transfer bin, or *from* your Transfer bin (or another bin) *to* your library.

**cyclic prototype**

Type of prototype intended to be the basis for successive refinements to create a system. Reflects a wider set of system functionality such as standard technical concepts, system architecture, and presentation interfaces.

### **data element**

A single variable within a DATA BLOCK—for example, a single SMALL/BIG/TEXT/KANJI entry.

### **data fields**

Fields defined in Screen Design to display input and display output data.

### **data position characters**

Type of edit characters used in an edit mask to specify characters the mask should contain.

### **data prototyping**

Type of prototyping that represents the data that supports the prototype in terms of data views. The data defined should represent the smallest set of data necessary for the system being prototyped.

### **disposable prototypes**

Type of prototype intended to demonstrate a specific set of system needs. Not generally used for long-term development strategies.

### **domain**

The space in, or the invisible column around, a defined screen or field. Domains ensure the screen and field definitions (including attributes and repeat specifications) made during screen design are retained until they are modified.

### **double byte character set (DBCS)**

Special 2-byte, text character used on Asian language support terminals.

### **edit characters**

Special characters used to allow flexible formatting of numeric data fields. Edit characters display only when the user enters data in a numeric field. For example, to display a field with a dollar amount, use the dollar sign as an edit character. When numbers are entered in the field, the edit character will display; otherwise, it remains hidden.

**edit masks**

Special characters that allow you to format numeric fields to display data in a certain way. Edit masks are mainly used for formatting output fields. For example, to display a list of check amounts in a column, use an edit mask that displays the amounts in the correct, right-justified format.

**extended entity profile records (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. The EEPR does not include information about CREF (cross-reference) data because CREF data applies only to the source cluster.

**entity (or MANTIS entity)**

Generic name for complex variable descriptions (SCREEN, INTERFACE, FILE), MANTIS programs, and MANTIS internal file data.

**extended attribute support**

Support in Screen Design for all attributes available on the latest 3270-style terminal. This includes color, blinking, underlining, range checking, reverse video, and so on.

**external file view**

Detailed information about the contents and format stored in an external file, such as a personal computer file. A file view allows you to control access to the information by password-protecting certain portions of the file data.

**facility**

A program provided by Cincom or a user that is used by a programmer; for example, a menu program, screen design, file design, and so on, as opposed to user-written application programs.

## **field attribute**

Attribute such as color, highlighting, blinking, underlining, and so on defined for a field.

## **file code**

A code that is part of the MANTIS cluster VSAM key. This code identifies records belonging to an individual internal file. FILE CODES less than 17 and greater than 999 are reserved for Cincom use.

## **fill characters**

Any edit mask character (other than a blank and #) that occurs in consecutive positions in a mask, but does not begin in the first position. You can use fill characters to display columns of numeric information in a particular way, such as a list of check amounts that need to be right-justified.

## **fixed-position characters**

Any edit mask character (other than # and the sign characters when used as fill or floating characters) that does not occur in consecutive positions in a mask.

## **float characters**

Any character (other than blank, #, +, and -) that occupies the first and at least one consecutive position of the edit mask.

## **function key area**

The area at the bottom of your screen where MANTIS displays function key numbers and their settings.

## **function key**

The program function (PF) keys that issue a specific action. PF keys are available for each facility and differ from screen to screen within the facility. Your Master User can permanently customize PF key settings for each user.

## **functional prototyping**

Type of prototyping that represents the program's functional processing and the end user's process flow. This type of prototype demonstrates the commands and data transformation that the final system will perform.

## **generic pattern**

A partial entity name that uses the wildcard character asterisk (\*) to represent an indefinite number of characters or the question mark (?) to represent a single character or several characters. Examples are CUST\* and CUST?. You supply the partial entity name with wildcard characters on directory list screens and in the Starting Name field of the Transfer Facility. When you issue the action, individual entities that match the selection criteria of the generic pattern are processed. For example, the program CUST\_BROWSE is processed if the generic pattern CUST\* is designated.

## **heading fields**

Fields defined in Screen Design to specify screen and field names. Heading fields always appear on the completed design exactly as they were entered.

## **horizontal repeats**

Attribute set in screen Design to indicate the number of times a field on a screen is to be repeated horizontally.

## **interface area**

A context block used to pass data between MANTIS and an interface program.

## **INTERFACE**

A complex data type that defines an area used by a non-MANTIS program when CALLED. Also used to refer to the program as the object of a CALL statement.

## **internal file**

Same as FILE or MANTIS FILE, that is, a file defined by a MANTIS user and residing on the MANTIS cluster.

## **Kanji**

A generic term indicating a 16-bit text data type, and specifically a Japanese language 16-bit character set.

## **Levels**

In Scenario Design, screens are assigned to levels to reflect the order in which they are to appear in the application. For example, a level one screen would be a main menu screen. A screen at level two would be a menu screen selected from the main menu screen, and so on.

## **library functions**

Functions available for saving, replacing, fetching and deleting screens, file views, interfaces, and prompters.

## **list**

A type of screen in which entities are presented in order, along with additional, extended information provided by the system for reference. Directory lists are provided for programs, screens, file views, prompters, interfaces, logical views, scenarios, DL/I Call Profiles, DL/I Segment Layouts.

## **logical terminal**

An abstract device with 255 rows and 255 columns and a superset of all terminal features. Screen I/O is directed to the logical terminal, and subsets of dimensions and features are directed to the physical terminal device, depending upon its actual capabilities.

## **map**

Commonly used as a synonym for screen or panel.

## **mapset**

The collection of all screens displayed to the logical terminal at any one time. You add a screen to the mapset with either a CONVERSE statement, using the SET and WAIT options. You clear a mapset by a CLEAR, or CONVERSE statement.

## **Master User**

Person or persons designated to perform administrative functions for an installation site. The Master User can set up user profiles, specify which users can use which facility programs, alter sign-on and sign-off procedures, set printing specifications, establish system security, edit text of MANTIS and Kanji messages, maintain files and codes, display program statistics, check bound programs, transfer entities, capture data from a background task, share frequently used programs among users, and run reports.

## **mixed-data type support**

Support allowing both EBCDIC (English) and DBCS (Asian language) to reside concurrently in a variable to indicate whether EBCDIC or DBCS characters are present. Set by the SO/SI attribute in Screen Design or by the MIXMODE ON statement in programming mode.

## **numeric data**

BIG and SMALL variables or expressions or function outputs.

## **numeric fields**

Fields defined for the input and output of numeric data only.

## **opaque map**

Attribute in the Screen Design Library Facility that allows a screen (map) to be opaque (rather than transparent) when it is conversed. You can set this attribute only from the Screen Design Library Facility menu.

## **parent screen**

In Scenario Design, the parent screen is the main menu screen from which all subsequent screens are selected in an application program.

## **prompter**

MANTIS entity for creating online help screens and documentation.

## **prototyping**

Creating a working model of a data processing system that reflects system requirements and that can be demonstrated and refined as necessary.

## **record layout**

Provides the format in which the data in a file is stored and transmitted. You can associate an existing record layout to other file designs.

## **repoint option**

Way to reposition a directory list by entering the 1–16 alphanumeric entity name or partial entity name. When a user presses ENTER, MANTIS repositions the list at the indicated entity name.

## **reserved word**

A word that cannot be used for user variable names, such as PAD, FILE, SCREEN, and so on. (See “[MANTIS reserved words](#)” on page 38 for a complete listing of MANTIS reserved words.)

## **scenario**

A prototype of an application processing system that demonstrates the user/machine interface. You can convert scenarios to production applications by replacing the levels in a scenario with MANTIS programs.

## **screen**

A grouping of information arranged in a particular design. The MANTIS Facilities are made up of a series of screens. You can create your own screens for application programs using the Screen Design Facility.

## **selection field**

The field of three underscores (\_\_\_) you use to select an options number on the MANTIS Facility Selection Menu you use to select options.

**sign character**

Includes the plus (+) and minus (-) signs and the Credit (CR) and Debit (DR or DB) signs. You use the sign characters only for displaying the output of numeric fields.

**simple variable**

A scalar or array defined by the TEXT, BIG, SMALL, or KANJI statements, or as a result of executing a complex statement (which implicitly defined it).

**skeleton programs**

Generic programs supplied with MANTIS for modification by users, including sample browse programs, entry programs, menu programs, and so on.

**symbolic name**

User-defined name that represents user-defined data. In MANTIS, symbolic names represent the data to be processed by a program.

**terminate (exit)**

A common dialog action that terminates the current function and returns a higher level function. For example, exiting from the Update Field Specifications function takes you back to the Screen Design Facility menu.

**TEXT character**

A character data type containing an EBCDIC (English) text string.

**Transfer File**

A VSAM file used by the Transfer Facility to hold MANTIS entities or data for sharing between users or systems.

### **tree structure**

Option on the Scenario Design facility menu that displays a diagram of the structure of a scenario design. This is useful for checking the scenario to see that it is built correctly.

### **uppercase**

Attribute in Screen Design to indicate whether data entry text fields will be translated to uppercase characters. This setting is overridden by the ATTRIBUTE statement. Uppercase is also available in Prompter Design.

### **user interface prototyping**

Represents the end user's view of the system. Users should be able to react directly to the prototype as they would in a production environment (e.g., the prototype should demonstrate screen design and flow).

### **vertical repeats**

Attribute set in Screen Design to indicate the number of times a field is to repeat vertically on a screen.

### **wildcard characters**

The asterisk (\*) is used to represent an indefinite number of characters and the question mark (?) is used to represent a single character in a generic pattern of program names. Enter a generic pattern using these wildcard characters on Directory list screens or in the Starting Name field in the Transfer Facility. For example, CUST\* processes all CUST screens; CUS? processes all screens with 4-character names beginning with CUS.

### **window mode**

Mode in MANTIS that allows you to view a screen design that is larger than the physical terminal.

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