AD/ADVANTAGE

MANTIS for Windows Facilities Reference Manual

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AD/Advantage® MANTIS for Windows Facilities Reference Manual

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We welcome your comments

We encourage critiques concerning the technical content and organization of this manual. A Reader Comment Sheet is included at the end of the manual for your convenience.

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About this book

Using this document

MANTIS® is an application development system that consists of design facilities (e.g., screens and files) and a programming language. This manual describes the MANTIS facilities such as Transfer and Universal Export.

Document organization

The information in this manual is organized as follows:

Chapter 1—Introduction
Provides introductory information about MANTIS for Windows including terminology, character sets, reserved words, and considerations.

Chapter 2—Screen design
Describes the MANTIS Screen Design Facility and how to use it to create and update screens, field specifications, and repeat specifications.

Chapter 3—File design
Explains how to create MANTIS files, external file views, and TOTAL file views.

Chapter 4—Prompter design
Describes how to use the Prompter Design Facility to create, save, update, and maintain prompters.

Chapter 5—Interface design
Describes how to design, save, update, and maintain interface profiles.

Chapter 6—Prototyping
Provides an overview of prototyping and describes two MANTIS facilities you can use to prototype your applications.

Chapter 7—Program design
Describes how to create, maintain, view, print, bind, unbind, and edit MANTIS programs.

Chapter 8—Transfer Facility
Describes the Transfer Facility, which enables you to copy entities such as screens, files, and programs between one or more MANTIS users, in one or more MANTIS libraries, using the Transfer File as a staging area.

Chapter 9—Miscellaneous facilities
Describes MANTIS facilities which allow you to run a program by name without being in programming mode, display a prompter, sign on as another user, and view and print directories of programs, screens, files, and other MANTIS entities.

Chapter 10—DL/I Call Profile Design Facility
Explains how to create and modify DL/I call profiles using MANTIS for Windows.

Chapter 11—Compatibility considerations (personal computer and IBM mainframe)
Describes the feature discussed in this manual which are affected by compatibility mode or need special consideration in applications which are migrated to the IBM mainframe.

Chapter 12—Universal Export Facility
Describes the Universal Export Facility, which allows you to export one or more entities from one MANTIS file to another.

Appendix A—Dissimilarity debugging
Defines the types of dissimilarity and suggests how you may locate and correct these errors.

Appendix B—Messages
Provides the error messages you may receive when executing the MANTIS facilities.

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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 (ø)	Indicates a space (blank). The example indicates that a password can have a trailing blank.	`WRITEPASSø`
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 [`*`program-name`*`]`
	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.)	**NEXT** **PRIOR** **FIRST** **LAST**

Convention	Description	Example
Braces { }	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. The example indicates that you must enter FIRST, LAST, or a value for *begin*.	**FIRST** ***begin*** **LAST**
Underlining	Indicates the default value supplied when you omit a parameter. The example indicates that if you do not specify ON, OFF, or a row and column destination, the system defaults to ON.	**SCROLL** [**ON** **OFF** [***row***] [**,*col***]]
	Underlining also indicates an allowable abbreviation or the shortest truncation allowed. The example indicates that you can enter either PRO or PROTECTED.	PROTECTED
Ellipsis points...	Indicate that the preceding item can be repeated. The example indicates that you can enter (A), (A,B), (A,B,C), or some other argument in the same pattern.	(*argument*,...)
SMALL CAPS	Represent a keystroke. Multiple keystrokes are hyphenated.	ALT-TAB

Convention	Description	Example
UPPERCASE	Indicates MANTIS reserved words. You must enter them exactly as they appear. The example indicates that you must enter CONVERSE exactly as it appears.	`CONVERSE` *`name`*
lowercase	Indicates generic names of parameters for which you supply specific values as needed.	`COMPOSE[`*`program-name`*`]`
Italics	Indicate variables you replace with a value, a column name, a file name, and so on. The example indicates that you can supply a name for the program.	`COMPOSE [`*`program-name`*`]`
Punctuation marks	Indicate required syntax that you must code exactly as presented. `( )` parentheses `.` period `,` comma `:` colon `' '` single quotation marks	[LET] *v* [(*i*) / (*i*, *j*)] [ROUNDED(*n*)] = *e1* [, *e2*, *e3*...]

MANTIS documentation series

MANTIS is fourth-generation programming language used for application development. MANTIS is part of AD/Advantage®, which offers additional tools for application development. The following list shows the manuals offered with MANTIS for Windows, organized by task. You may not have all the manuals that are listed here.

Getting started

- *MANTIS for Windows Administration Guide*, P19-2304*

General use

- *MANTIS for Windows Language Reference Manual*, P19-2302
- *MANTIS for Windows Facilities Reference Manual*, P19-2301
- *MANTIS for Windows Quick Reference*, P19-2303

SQL support

- *MANTIS for Windows SQL Support for SUPRA Programming Guide*, P19-2307
- *MANTIS for Windows SQL Support for SUPRA Administration Guide*, P19-2308*

Master user tasks

- *MANTIS for Windows Administration Guide*, P19-2304*
- *MANTIS for Windows SQL Support for SUPRA Administration Guide*, P19-2308*

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

MANTIS educational material is available from your regional Cincom education department.

1

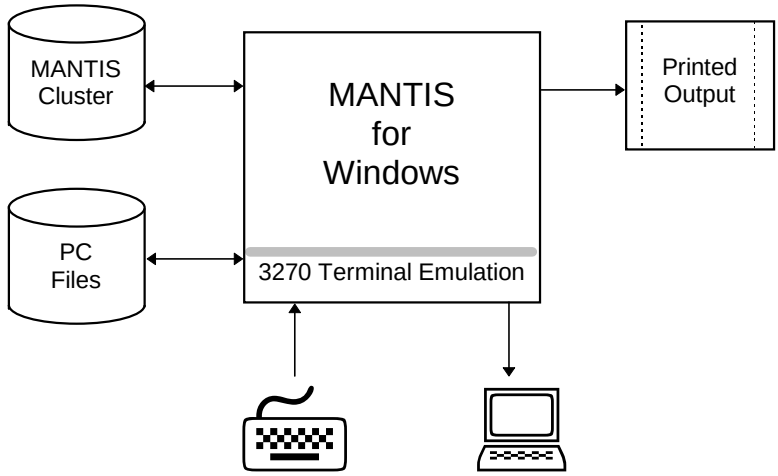
Introduction

MANTIS for Windows is an application development workbench for users of MANTIS on the mainframe, offering the functionality of MANTIS for Windows. MANTIS is composed of screen design facilities (for creating MANTIS entities such as screens and files) and the MANTIS programming language. This manual discusses the MANTIS design facilities (for information on the MANTIS language and the conventions it uses, refer to the *MANTIS for Windows Language Reference Manual*, P19-2302).

MANTIS entities (such as programs, screens, and files) are maintained by MANTIS in its own library. MANTIS entities can be ported to and from the IBM mainframe and copied between two personal computers. They can also be copied to diskettes or printed. MANTIS can also be used to do the following:

- Design and create formatted screens.
- Design and create permanent files for storing and manipulating data.
- Create and test programs interactively. MANTIS provides a compatibility mode for creating programs that are compatible with MANTIS for the IBM mainframe. This mode prevents execution of statements and features not currently supported by MANTIS for the IBM mainframe.

The following figure outlines how MANTIS for Windows works:



MANTIS for Windows considerations

MANTIS for Windows considerations include:

- This product simulates an IBM 3270-type device to the extent possible with the associated personal computer hardware. MANTIS for Windows supports VGA monitors, although SVGA monitors are recommended.

- Because a personal computer keyboard does not have all the keys on a 3270 keyboard, MANTIS for Windows uses logical keys that correspond to 3270 keys. Logical keys are special key assignments used to enter data and perform special functions. "Keyboard operation" on page 34 describes logical keys in more detail. Personal computer keys are mapped to logical keys, and this mapping can be customized (refer to the *MANTIS for Windows Administration Guide*, P19-2304).

- Pressing the CTRL-BREAK key aborts the current MANTIS program as if it contained an error. MANTIS issues a fault message and terminates the program.

Terminology used in this document

The following terms and abbreviations specific to MANTIS for Windows are used in this manual:

Term	Meaning
Compatibility mode	MANTIS provides a compatibility mode that enables you to create programs and specify attributes that are compatible with MANTIS for the IBM mainframe. This mode protects you from executing statements or features that are not supported by MANTIS for the IBM mainframe.
DOS	MS-DOS
Logical key	MANTIS for Windows uses logical keys (special key assignments that correspond to 3270 keys) to enter data and do special functions. See "Keyboard operation" on page 34.

MANTIS character set

MANTIS programs are written in the MANTIS language. To use MANTIS, you must know some fundamental rules about how MANTIS works. The MANTIS character set consists of:

- Alphabetic characters A–Z (uppercase), a–z (lowercase).
- Space character (blank).
- Numbers (0–9).
- Special characters, as defined in the following table:

Character	Meaning
“	Double quotes enclose a text literal.
‘	A single quote (apostrophe) marks a continuation line.
( )	Parentheses enclose subscripts, subexpresssions, arguments, and parameters.
:	A colon separates two program statements on the same line. A colon also abbreviates the SHOW command, as described in “Program design” on page 249.
;	A semicolon inserts a space in the line displayed by the SHOW statement.
,	A comma separates subscripts, arguments, and parameters. It also inserts spaces up to the next zone in a line displayed by the SHOW statement.
.	A period designates the decimal point in a number.
_	An underline connects separate words in a symbolic name.
¦	A broken vertical bar precedes a comment in a program line.
+	A plus sign adds one number to another or joins one text value to another.

Character	Meaning
-	A minus sign subtracts one number from another or reduces one text value by another.
*	An asterisk multiplies one number by another.
**	Two asterisks raise one number to the power of another.
/	A slash divides one number by another.
=	An equal sing tests whether one value is equal to another, or assigns a value to a variable.
<	A less-than sign tests whether one value is less than another.
>	A greater-than sign tests whether one value is greater than another.
<>	A less-than sign followed by a greater-than sign tests whether one value is unequal to another.
>=	A greater-than sign followed by an equal sign tests whether one value is greater than or equal to another.
<=	A less-than sign followed by an equal sign test whether one value is less than or equal to another.
&	An ampersand indicates an indirect reference to a MANTIS symbolic name. Refer to the *MANTIS for Windows Language Reference Manual*, P19-2302.
@	An at-sign directs MANTIS to obtain keyboard input from a PC file (programming mode only).
$	A dollar sign is short for the PERFORM command. (The dollar sign can be used as a command only, not as a programming statement.)

MANTIS reserved words

A reserved word is a word that has a special meaning to MANTIS. MANTIS uses reserved words, listed following this paragraph, to identify commands and statements and their associated options. These reserved words also identify built-in functions and constants. All uppercase words in this manual are words which you must enter exactly as they appear. MANTIS reserved words cannot be used for any other purpose.

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

MARK	MEMORY	MIXED	MODIFIED	
NEW	NEXT	NOT	NULL	NUMERIC
OBTAIN	OFF	ON	OR	ORD
OUTPUT				
PAD	PASSWORD	PERFORM	PERM	PI
POINT	POSITION	PREFIX	PRINTER	PRIOR
PROGRFREE	PROGRAM	PROMPT	PURGE	
QUIT				
RELEASE	REPLACE	RESERVED	RESET	RETURN
RND	ROUNDED	ROUNDING	RUN	
SAME	SAVE	SCREEN	SCROLL	SEED
SELECT	SEQUENCE	SET	SQN	SHOW
SIN	SIZE	SLICE	SLOT	SMALL
SPECTRA	SQLBIND	SQLCA	SQLDA	SQR
STOP	SUBMIT	$SYMBOL		
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				

MANTIS symbolic names

A symbolic name is an expression that represents user-specified data. MANTIS uses symbolic names to represent data processed by a MANTIS program. Symbolic names can represent either numeric or text data. MANTIS allows a maximum of 65536 symbolic names for a single program, including names defined implicitly by SCREEN, FILE, and ACCESS statements.

A symbolic name:

- Must begin with an alphabetic character.
- Can contain alphabetic characters, numeric characters, and the underline (_). An underline connects separate words in a symbolic name (e.g., CUSTOMER_NAME). No other special characters are allowed in a symbolic name. Lowercase characters can be entered; MANTIS converts them to uppercase.
- Must not be a reserved word, as listed in "MANTIS reserved words" on page 23. A symbolic name can contain a reserved word (e.g., EDITOR) but cannot be a reserved word in its entirety (e.g., EDIT).
- Has a maximum length of 80 characters.

Text considerations

This section discusses how MANTIS stores and manipulates text data. MANTIS stores text data in TEXT variables. Each TEXT variable can hold a maximum of 32750 characters, although a lower limit may be specified in the Update Configuration File Facility. Any characters in the ASCII character set can be stored in a TEXT variable. If you specify a TEXT variable as:

```
10 TEXT DATA(20)
```

MANTIS allocates storage for 20 characters of text data. You can also store text data in arrays of one or more dimensions using the text statement.

Numeric considerations

MANTIS numbers can consist of:

- The digits 0–9.
- A preceding plus or minus sign.
- A period to designate the decimal point.
- The letter E to indicate an exponent.

When to use BIG and SMALL

MANTIS stores numbers in the following ways:

- **BIG precision.** Holds up to 15 significant digits.
- **SMALL precision.** Holds up to 6 significant digits.

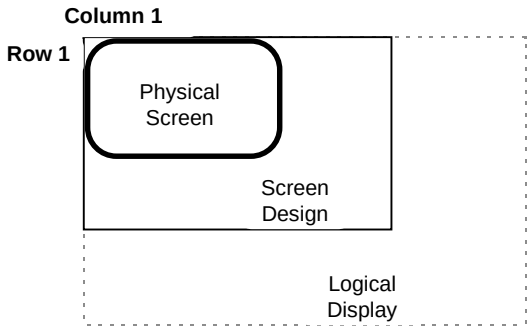
BIG variables provide for much greater accuracy in your calculations than SMALL variables. Use BIG variables unless you are concerned with the storage requirement of your program. (BIG variables require approximately twice as much space as SMALL variables.) Do not use SMALL for decimals. If you do not define a variable as BIG or SMALL, MANTIS assumes BIG.

Numeric arrays

A numeric array is an ordered set of numeric values. Each value is called an array element. Numeric arrays can have 1–255 dimensions. Each dimension can be in the range 1–16000 (as defined by your Master User in the configuration file). Memory required for an array must not exceed 64K.

Display modes

MANTIS performs terminal I/O through the Logical Terminal Interface, which supports a logical display area of 32767 rows by 32767 columns. Using MANTIS Screen Design and Program Design facilities, you can create and display screens that are larger than your physical screen. Your physical screen acts as a window through which you look at the logical display (see the following figure). You can move this window around the logical display using the keys listed under "Keyboard operation" on page 34.



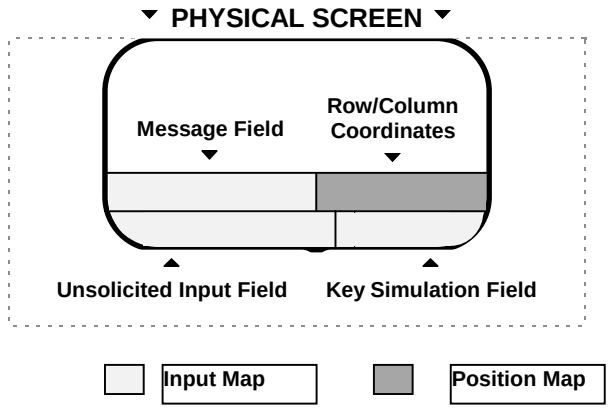
In addition, MANTIS displays floating maps that have a constant position relative to the window in the logical display. When you move the window, the floating map moves in the same direction, retaining its position on the physical screen. MANTIS uses floating maps to display the fields shown in the illustration in "Full-screen mode" on page 29.

MANTIS uses two methods to display data on the logical display. These methods, described below, involve a brief explanation of the CONVERSE, SHOW, OBTAIN, and HEAD statements. These statements are described in detail in *MANTIS for Windows Language Reference Manual*, P19-2302. If you are new to the MANTIS language, you may want to skip this section until you become more familiar with MANTIS screen design and these statements.

Full-screen mode

Full-screen mode describes the way MANTIS displays a screen (also called a map). First, you create your screen using the MANTIS Screen Design Facility to define its layout, content, and attributes. Then, you use the CONVERSE statement within your MANTIS program to identify the map you wish to display as well as its position on the logical display, and ultimately on your physical screen. When MANTIS converses (displays) your map, it waits for you to inspect it or enter data. When you press ENTER, MANTIS processes any data you have entered according to subsequent program statements.

In full-screen mode, MANTIS displays floating maps: the input map, which contains fields for messages and user-entered data, and the position map, which contains row and column coordinates for the window position, as shown in the following illustration:



The following table lists and explains the fields that MANTIS displays in full-screen mode:

Field	Length	Function
Message field (input map)	Terminal width, less 12 columns	Displays MANTIS messages.
Row/column coordinates (position map)	5 bytes for each	Displays current row and column coordinates of the upper left corner of the window in the logical display. You can press WINDOWMAP[1] to add or remove this field. When the position of the window is displayed, you can enter new values in the row and column fields. When you press ENTER, MANTIS interprets the values as follows: **unsigned value**. Row or column number in the logical display. **signed value**. Row or column number relative to the current value. **I precedes value**. Row or column increment for window movement keys.
Unsolicited Input field (input map)	Terminal width, less 8 columns	Provides field for entering unsolicited input. This field is added/removed by pressing INPUTMAP[1] in full-screen mode.
Key Simulation field (input map)	6 bytes	Provides field for entering function keys. This value is obtained using the *screen-name* function in your MANTIS program. This field can be added or removed by pressing INPUTMAP[1].

[1] These editing keys are described under "Keyboard operation" on page 34.

The last two lines may not appear on your conversed map if you have specified special attributes in your screen design which tell MANTIS to display the map over the last two lines or to protect the fields in the bottom line.

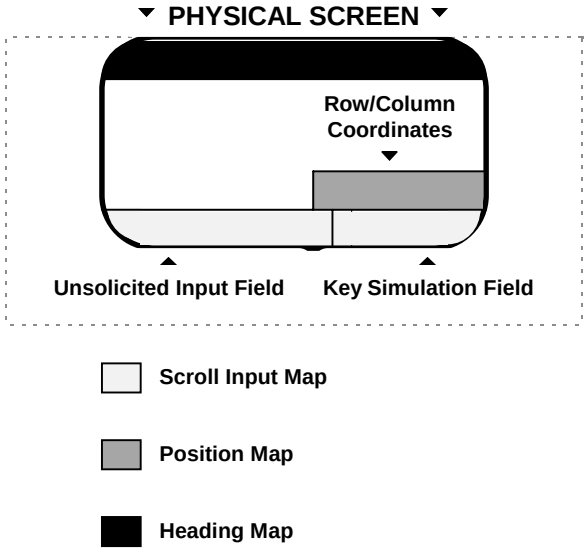
The CONVERSE statement also enables you to display more than one map on the logical display. A collection of maps on the logical display is called a map set. The order in which maps are added to the map set (conversed) determines their order in the display as well as whether they are active (fields are updatable) or passive (fields are not updatable) in the display.

Scroll mode

Scroll mode is the second way MANTIS displays data. MANTIS automatically invokes this method (when you create a MANTIS program) and uses a scroll map to display data from SHOW, OBTAIN, and HEAD statements. MANTIS displays each new line of data at the bottom of the scroll map, and scrolls up previous lines one line at a time.

The SHOW statement enables you to specify the data you want to display on your physical screen. An OBTAIN statement typically follows a SHOW statement in a MANTIS program to get your response to the SHOW data. The HEAD statement provides a centered heading for the display. The HEAD statement always reserves two lines on your display; one for the heading, another for a blank line to separate the heading from the text on your screen.

In scroll mode, MANTIS displays floating maps: a heading map, which is used to display a screen heading, and the scroll input map, for user-entered data. These fields are shown in the following figure:



The following table lists and explains the fields that MANTIS displays in scroll mode:

Field	Length	Function
Unsolicited Input field (input map)	Terminal width, less 8 columns	Provides a field for entering input (response to a SHOW and OBTAIN, in this case).
Row/column coordinates (position map)	5 bytes for each	Displays current row and column coordinates of the upper left corner of the window in the logical display. You can press WINDOWMAP[1] to add or remove this field. When the position of the window is displayed, you can enter new values in the row and column fields. When you press ENTER, MANTIS interprets the values as follows: **unsigned value**. Row or column number in the logical display **signed value**. Row or column number relative to the current value **I precedes value**. Row or column increment for window movement keys
Key Simulation field (input map)	6 bytes	Provides field for entering function key values. This value is obtained using the KEY function in your MANTIS program. This field can be added or removed by pressing INPUTMAP[1].

[1] These editing keys are described under "Keyboard operation" on page 34.

Note that although your physical screen is conceptually a window on the scroll map, some data that is displayed may not be part of the scroll map. Output may be directed to your screen by the operating system rather than by MANTIS. In this case, pressing SELECT does not copy what you see on your screen. To see what you are copying from the scroll map, you need to press REFRESH before pressing SELECT. The table under "Keyboard operation" on page 34 discusses the REFRESH and SELECT keys.

Keyboard operation

Throughout this manual, logical key names are used to describe keyboard operations. Logical keys generally correspond to 3270 keys or special MANTIS terminal control functions. A standard personal computer has the following types of keys:

- A main keypad of alphabetic (a–z) and nonalphabetic (numeric and punctuation) data-entry keys.
- Special keys (function keys, TAB, ENTER, directional cursor keys, HOME, END, PGUP, etc.).
- ALT and CTRL (used like the SHIFT key, are held down while pressing another key).

The tables under "MANTIS editing and windowing keys" on page 36, "MANTIS action keys" on page 39, and "Macro keys" on page 40 describe the logical keys available in MANTIS and the default assignments of personal computer keys to logical keys. You use the keyboard to do the following:

- **Enter data.** You can only enter data when the cursor is in an unprotected field on the screen. When you press a data-entry key, the corresponding character is entered into the field at the cursor position, and the cursor moves one position to the right. If you are in overtype mode (the default mode), each character that you enter overwrites the character at the cursor position. In insert mode (turned on/off by the INSERT key), each character that you enter is inserted at the cursor position and the following characters in the field move one position to the right.
- **Perform special functions.** When you press one of the keys listed in "MANTIS editing and windowing keys" on page 36, MANTIS performs a function that has an immediate effect on your screen (such as moving the window or initiating insert mode), without returning control to the application.

You can also use logical keys, such as those listed in "MANTIS action keys" on page 39 and "Macro keys" on page 40, to return control to the MANTIS program that is executing. The program can obtain the name of the function that you selected. The response of the logical key is determined by the logic of the MANTIS program. You can also enter any value in the Key Simulation field before pressing ENTER, and this value is returned to the MANTIS program as the logical key name. Entering KILL in the Key Simulation field, however, terminates the MANTIS program.

The following sections show the default key assignments you can use when running your application. Logical key names such as CANCEL and INSERT are used throughout this manual. The personal computer key values can be changed in keyboard configuration (refer to the *MANTIS for Windows Administration Guide*, P19-2304).

MANTIS editing and windowing keys

The following table shows the keys that you use to move the cursor and the window and modify the screen, without sending any data from the input screen to the MANTIS application program:

Logical key	PC key	Enables you to
UP	↑	Move the cursor up one row.
DOWN	↓	Move the cursor down one row.
LEFT	←	Move the cursor left one column.
RIGHT	→	Move the cursor right one column.
TAB	→| (TAB)	Move the cursor to the start of the next unprotected field.
BACKTAB	SHIFT-→| (SHIFT-TAB)	Move the cursor to the start of the current unprotected field (or to the start of the previous unprotected field if already at the start of the current field).
DELETE	DEL	Delete the character at the cursor.
BACKSPACE	← (BACKSPACE)	Delete the character to the left of the cursor and move the cursor one space to the left.
ERASEEOF	F6 or CTRL-END	Delete the character(s) from the cursor to the end of the field.
INSERT	INS	Turn on/off insert mode.
HOME	HOME	Move the cursor to the first unprotected field on the screen.

Logical key	PC key	Enables you to. . .
NEWLINE	CTRL-ENTER	Move the cursor to the first unprotected field on the next line.
REFRESH[1]	CTRL-R	Redisplay the current screen.
SELECT[1] [2]	CTRL-S	Copy a line from the scroll map to the Unsolicited Input field for you to modify.
SELUP[1]	CTRL-U	Copy the previous input line from the scroll map to the Unsolicited Input field.
SELDOWN[1]	CTRL-D	Copy the next input line from the scroll map to the Unsolicited Input field.
TABWRD	CTRL-→	Move the cursor to the next word.
TABBOW	CTRL-←	Move the cursor to the beginning of the word (or to the previous word if the cursor is already at the beginning of a word).
TABEOF	END	Move the cursor past last nonblank character in current field.
LINEDRAW[3]	CTRL-B	Draw lines in Screen Design by using the cursor keys.
LINECLEAR[3]	CTRL-N	Erase line-drawing characters in Screen Design by using the cursor keys.
STOP	CTRL-\	Terminate MANTIS. You must press this key twice, consecutively.
WINUP	PGUP	Move the window up by the row increment value.

1 This key is used in the MANTIS Line Editor. See "Programming fundamentals" on page 256 for more information.

2 Refer to the PERFORM statement in *MANTIS for Windows Language Reference Manual*, P19-2302, for more information on using SELECT.

3 This key remains active until you press an action key (see "MANTIS action keys" on page 39).

Logical key	PC key	Enables you to. . .
WINDOWN[1]	PGDN	Move the window down by the row increment value.
WINLEFT[1]	CTRL-PGUP	Move the window left by the column increment value.
WINRIGHT[1]	CTRL-PGDN	Move the window right by the column increment value.
WINTOPL	CTRL-HOME	Move the window to the top left of the logical display.
WINTOPR	No default (user definable)	Move the window to the top right of the logical display.
WINBOTL	No default (user definable)	Move the window to the bottom left of the logical display.
WINBOTR	No default (user definable)	Move the window to the lower-right of the logical display.
SCROLLALL	CTRL-A	Display the entire scroll output map by scrolling from top to bottom.
INPUTMAP	CTRL-I	Add or remove the Unsolicited Input field, Key Simulation field and Message field.
WINDOWMAP	CTRL-W	Add or remove the row/column coordinates at the bottom of the screen.
STATUSLINE	CTRL-P	Add or remove the status line on the last line of the screen. The status line shows the current time, insert mode, and cursor position.
VALIDINFO	CTRL-V	Display extended edit attributes for a particular field. Position cursor over the field and press VALIDINFO anytime during data entry to the screen.

[1] See the tables under "Full-screen mode" on page 29 and "Scroll mode" on page 31 to change the increment value.

MANTIS action keys

The following table shows the MANTIS action keys you use to send data from the input screen to the MANTIS application program. It returns the logical key name to the map variable in the application program. Data fields are modified to match the screen fields.

Logical key	PC key	Logical key	PC key
CANCEL	ESC	PF11	ALT--
CLEAR*	F2	PF12	ALT-+
ENTER	ENTER	PF13	ALT-Q
PA1	ALT-J	PF14	ALT-W
PA2	ALT-K	PF15	ALT-E
PA3	ALT-L	PF16	ALT-R
PF1	ALT-1	PF17	ALT-T
PF2	ALT-2	PF18	ALT-Y
PF3	ALT-3	PF19	ALT-U
PF4	ALT-4	PF20	ALT-I
PF5	ALT-5	PF21	ALT-O
PF6	ALT-6	PF22	ALT-P
PF7	ALT-7	PF23	ALT-A
PF8	ALT-8	PF24	ALT-S
PF9	ALT-9		
PF10	ALT-0		

* This key erases the entire screen.

Macro keys

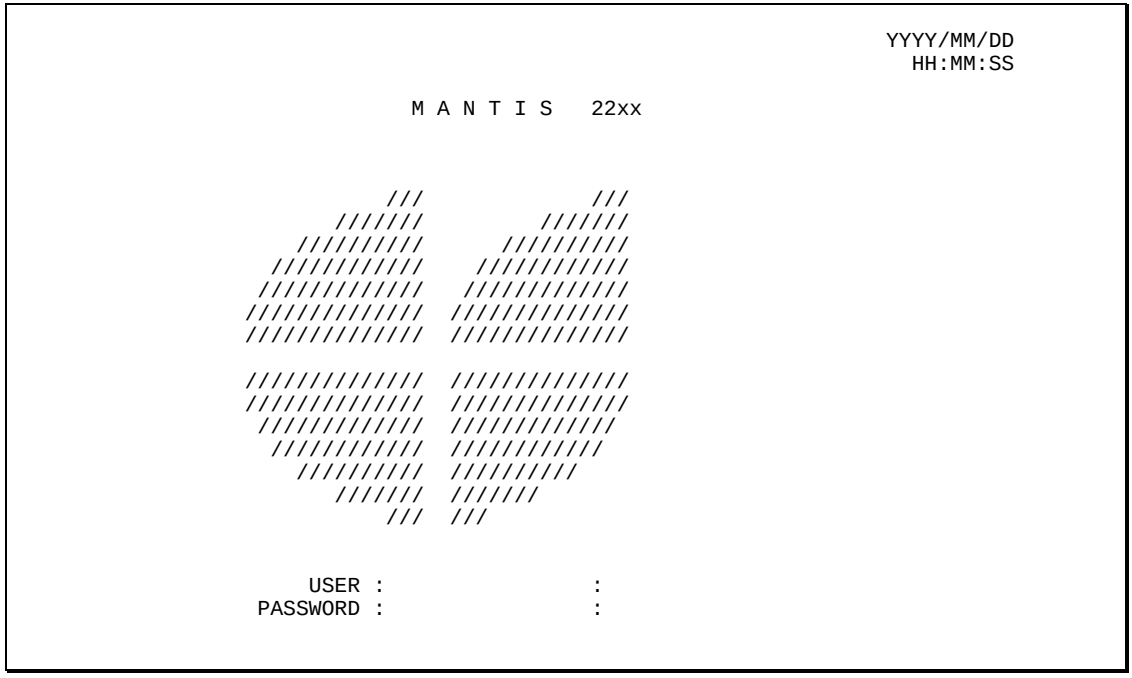
The following table shows the MANTIS macro keys. These keys invoke an internal function that is equivalent to typing the logical key name in the Key Simulation field and pressing ENTER.

Logical key	PC key	Enables you to. . .
EDIT*	CTRL-E	Invoke the user-specified editor.
HELP*	CTRL-H	Display the help prompter.
KILL	CTRL-K	End the program loop.
QUIT*	CTRL-Q	Exit from programming mode and return to the Program Design Facility menu.

* The function of this key is application-dependent. The description here is the intended purpose of the key. Consult each facility for details.

Signing on to MANTIS

When you access MANTIS for Windows, the sign-on screen displays:



To sign on to MANTIS, enter your USER and PASSWORD and press ENTER. You must enter your password exactly as it appears in your User Profile (uppercase or lowercase). The Facility Selection menu displays and you are signed on to MANTIS.

The following screen illustration shows the standard facilities provided with MANTIS. To select an option from the menu, either enter the number corresponding to the facility you want in the action field (: :) and press ENTER, or press the corresponding PF key.

```
                          M  A  N  T  I  S
                        FACILITY SELECTION


RUN A PROGRAM  .............   1         SIGN ON AS ANOTHER USER ....  11
DISPLAY A PROMPTER  ........   2         MANTIS RUN SYSTEM ..........  12
DESIGN A PROGRAM  ..........   3         RUN A SCENARIO .............  13
DESIGN A SCREEN  ...........   4         DIRECTORY FACILITY .........  14
DESIGN A FILE  .............   5         TRANSFER FACILITY ..........  15
DESIGN A PROMPTER  .........   6         DL/I CALL FACILITY .........  16
DESIGN AN INTERFACE  .......   7
DESIGN A TOTAL FILE VIEW ...   8
DESIGN AN EXTERNAL FILE VIEW   9
DESIGN A SCENARIO ..........  10         TERMINATE MANTIS ........ CANCEL



                                  :    :
```

When you exit from one of the facilities, you always return to this menu where you can select another facility or exit from MANTIS.

To exit MANTIS from the Facility Selection menu, press CANCEL.

2

Screen design

The MANTIS Screen Design Facility enables you to create and save fixed-format screen designs and to update and maintain existing screen designs. This facility provides a design work area that enables you to create screen designs that are larger than your physical screen. This work area is called the logical display to distinguish it from your physical screen.

Using your physical screen as a movable window, you can view different sections of the logical display. "MANTIS editing and windowing keys" on page 36 lists the windowing keys. Windowing is restricted to the size of the current screen design, that is, you cannot scroll beyond the edges of the current screen design.

By using the MANTIS Program Design Facility, you can build programs that display your screen designs on physical devices (such as the PC screen and printer). You can display overlaid multiple maps in the logical display area. For information on how to use the maps that you create in Screen Design, refer to the *MANTIS for Windows Language Reference Manual*, P19-2302.

MANTIS screen design supports color, underlining, blinking, and reverse video. You can also select validation criteria for data-entry (input) fields (see "Update field specifications" on page 65).

If you do not specify color during screen design, and your terminal supports a color display, the color of your screen fields will depend on how the PROTECTED and INTENSITY attributes are set in the Update Field Specifications option of the Screen Design Facility.

Screen design facility menu

To access the Screen Design Facility, select the Design a Screen option from the MANTIS Facility Selection menu (see “Signing on to MANTIS” on page 41). The following Screen Design Facility menu displays:

```
                              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
                    EXIT SCREEN DESIGN  ..............  CANCEL

                                      :_:
:
```

To create a new screen design, follow the sequence of the Screen Design Facility menu (first create the screen, then update the field specifications, etc.). To update an existing screen design, first select Library Functions (see “Library functions” on page 98) to fetch the screen from your library, then proceed with the Create or Update a Screen option.

You can move among the options listed on the Screen Design Facility menu without losing the screen design currently in your work area. However, remember to save your screen design or any updates through the Library Functions before exiting from the Screen Design Facility to the Facility Selection menu. If you try to exit from the Screen Design Facility or fetch a new screen into your work area through the Library Functions without first saving current changes, MANTIS asks you to confirm your action.

The remainder of this chapter discusses the Screen Design Facility options. If you are creating a new screen design, proceed through this chapter. If you are updating an existing screen design, go directly to the section(s) you need.

The following table provides an overview of the options in Screen Design and where each option is discussed:

This option	Enables you to. . .	See
Create or Update a Screen	Design a new screen or modify an existing screen.	"Create or update a screen" on page 46.
Update Field Specifications	Assign attributes to fields in a screen.	"Update field specifications" on page 65.
List Field Specifications	List attributes for the fields in a screen.	"List field specifications" on page 87.
Update Repeat Specifications	Assign vertical or horizontal repeats to a field.	"Update repeat specifications" on page 90.
List Repeat Specifications	List repeat specifications for the fields in a screen.	"List repeat specifications" on page 95.
Display Completed Design	View a screen design as it will appear in your application.	"Display completed design" on page 96.
Library Functions	Save, replace, fetch, or delete a screen design.	"Library functions" on page 98.
Directory of Screens	View a list of screens in your library.	"Directory of screens" on page 105.
Print Completed Design	Print a screen design.	"Print completed design" on page 106.

Create or update a screen

The Create or Update a Screen option enables you to create a new screen design or update an existing one. Begin by selecting the Create or Update a Screen option from the Screen Design Facility Menu (see "Screen design facility menu" on page 44). If you are creating a new screen design, MANTIS displays the default screen design size on the bottom line ("Current map domain is 22 x 80; modify if required and press ENTER"). You may change this value to change the size of the screen you are designing.

Up to 255 rows by 255 columns may be specified. However, the memory required to hold the design cannot exceed 64K. This means, for example, that a 255 x 255 screen cannot be created, but a 255 x 250 or a 250 x 255 can be created.

When you access the Create or Update a Screen option, the following screen displays. (If a screen design currently exists in your work area, it will be displayed instead of this screen.) The row scale line in column 1 of the screen is an aid for field positioning. You can remove and redisplay the scale line at the cursor position by pressing PF9.

```
-
-
-
-
+
-
-
-
-
1
-
-
-
-
+
-
-
-
-
2
-
-
```

To create a new screen design, enter heading and data fields exactly as you want them to appear in your application.

The EDIT logical key invokes the external text editor specified in the MANTIS configuration file, or in the EDITOR environment variable.

If you use tab characters in the external editor, MANTIS converts them to spaces when reading the screen design back from the editor interface. The default tab increment of eight can be changed using the EDITTABS environment variable. Refer to the *MANTIS for Windows Administration Guide*, P19-2304, for more information on how to change the editor name in the MANTIS configuration file, and on how to set the EDITOR and EDITTABS values.

Screen design considerations

Screens typically consist of heading fields and data fields. MANTIS screen design supports free-form screen creation, taking into account the following guidelines and rules. (See "Screen design keys" on page 61 for a list of keys that have special meaning in the Screen Design Facility.)

General design considerations

- The number of rows can range from 1–253, and the number of columns from 2–255. However, the total memory required cannot exceed 64K. Screen designs start in row 1 column 1, but when you use them in a program, you may place them anywhere in the logical display (refer to the CONVERSE statement in the *MANTIS for Windows Language Reference Manual*, P19-2302).

Up to 255 rows by 255 columns may be specified. However, the memory required to hold the design cannot exceed 64K. This means, for example, that a 255 x 255 screen cannot be created, but a 255 x 250 or a 250 x 255 can be created.

- If your screen design is larger than your physical screen, you may use the windowing keys to position your physical screen on the screen design work area. When the row scale line is displayed, it overlays data in column 1. When the column scale line is displayed, it overlays data in the row on which it is displayed. Remember that MANTIS reserves the bottom two lines on the screen for the following: Message field, Row/column coordinates, Unsolicited Input field, and Key Stimulation field. (See the illustration in "Full-screen mode" on page 29). These fields remain on your screen even when you scroll, unless you press INPUTMAP to remove them. You may want to remove them if your screen domain is greater than 22 rows and if you plan to use the FULL DISPLAY map-level attribute, which removes the capability of using these fields on the final screen. See "Library functions" on page 98 for details concerning the FULL DISPLAY attribute.

- Heading fields and data fields must be separated by one or more blank spaces or a line-drawing character (see "Drawing boxes" on page 63).

- For a repeating data field, enter only the first occurrence. To indicate repeat occurrences (specifying horizontal or vertical repeats), see "Update field specifications" on page 65 or "Update repeat specifications" on page 90.

- Delete heading or data fields by overtyping these fields with the space bar. Repeat specifications and attributes for a deleted field are automatically deleted.

Heading fields

- A heading field may contain any valid MANTIS character except the data-fill character (#), which is reserved for data fields.

- Use the screen's blank-fill character (default is the broken vertical bar (¦)) to connect words or letters in a heading field for optimal performance. The blank fill character is specified in your user profile. The Master user can change the blank-fill character in your user profile (if you require vertical bars to be displayed as part of heading fields) using the update User Profile function. For example, MANTIS assumes three heading fields with the heading:

  ```
  CUSTOMER DELIVERY DATE
  ```

  However, MANTIS assumes only one heading field with the heading:

  ```
  CUSTOMER¦DELIVERY¦DATE
  ```

  The blank-fill character is displayed as a blank character in your application and in the Display Completed Design option (see "Display completed design" on page 96.

- The general rule is that heading fields within five spaces of each other should be connected with blank-fill characters. Note that doing this causes MANTIS to apply any attribute (such as highlight) specified for one heading field to all heading fields that are connected by blank-fill characters.

Data fields

- Specify a text data field with one or more data-fill characters (the default is the hash mark (#)). For example, to create a field of 30 characters, enter 30 data-fill characters in the desired positions on the screen. The hash mark (#) is the only edit character used to specify a text data field.

- Specify a numeric data field by one or more data-fill characters (#), or by an edit mask consisting of one or more of the edit characters described in “Numeric edit masks” on page 51. You must include at least one data-fill character (#) in an edit mask to indicate to MANTIS that the field is not a heading.

A field is not a NUMERIC data field unless you specifically give it the NUMERIC attribute through Update Field Specifications (because the default is text). However, if any numeric editing characters appear in an edit mask, Screen Design defaults the data field type to NUMERIC.

- As with heading fields, use the blank-fill character (the default is the broken vertical bar character (¦)) to connect one or more numeric fields into one field (¦##¦##¦##).

- Edit characters embedded in a data field affect the length of that field for automatic skipping, which moves the cursor from one input field to the next. For example, if you enter a field eight characters long that includes two edit characters (##/##/##), only six characters are required for input, but eight characters are required for automatic skipping to the next field.

Numeric edit masks

You can specify the format of a numeric data field by using an edit mask of one or more edit characters. (Edit characters include sign characters, decimal points, and so on, and are discussed later in this section.) MANTIS uses the edit mask to display numeric data in the format you specify, and to validate the format of numeric data entered from the keyboard. For data entry, MANTIS fills the mask with keyboard-entered data from right to left. Any edit characters in the entered data must match the edit characters in the mask, or you will receive an error. When you enter data from a program into a field, MANTIS displays the data to fit in the edit mask on the screen.

The simplest edit mask consists entirely of data-fill characters (#). During data entry, MANTIS checks that a valid number is entered in the field on the screen. For example, you may use a colon to separate hours, minutes, and seconds:

```
##:##:##
```

Numbers can be signed or unsigned, with any number of decimal places, in decimal or scientific notation (e.g., 32, -16.666, +0.001, 4.6E-4). When displaying a number, MANTIS converts it from internal floating-point format, selecting decimal or scientific notation according to the rules stated in *MANTIS for Windows Language Reference Manual*, P19-2302. MANTIS left justifies the number in the field and puts a minus sign in front of a negative number. If the field is too small to hold the number (more digits than hash marks), MANTIS fills the entire field with asterisks (*).

When the edit mask consists entirely of hash marks, MANTIS effectively handles numeric data in free format (as if you had used OBTAIN to obtain the data and SHOW to display it). With all other edit masks, however, MANTIS displays data in fixed format, where digits of each value (units, tens, hundreds, etc.) always occupy the same position in the field. Numeric data is displayed left-justified in numeric fields that do not contain edit masks (######), but is right-justified in fields that do contain edit masks.

MANTIS aligns a number in the field according to the position of the decimal point. An edit mask can specify the position of the decimal point by including a decimal point. The decimal point is a period (.) unless otherwise specified in your user profile. MANTIS displays the decimal point in the field and uses it for alignment. If a fixed-format mask does not contain a decimal point, MANTIS assumes that the decimal point follows the rightmost character in the edit mask and does not display a decimal point in the field. The following table lists display examples of fixed format edit masks:

Edit mask	Data entered	Display
#####.##	12004	12004.00
####.##	120.04	120.04
#######	12004	12004

When converting a number for display with a fixed-format edit mask, MANTIS always uses decimal notation, and never scientific notation. If necessary, MANTIS rounds the fractional part of the number to the number of decimal places specified after the decimal point in the edit mask. If the edit mask does not contain a decimal point, MANTIS rounds the number to the nearest integer. If the edit mask does not contain enough positions to the left of the decimal point for all the significant digits and the sign, MANTIS fills the field with asterisks.

When you enter a number in a field with a fixed-format edit mask, you do not have to enter the digits in the positions specified by the edit mask. You can even enter the number in scientific notation if you prefer. If you do not enter a decimal point, MANTIS assumes that the decimal point follows the rightmost digit. MANTIS checks that the number you enter can be displayed in the field when aligned according to the edit mask. If a numeric field fails this check, MANTIS highlights the invalid data, displays an error message, and waits for you to reenter the data.

MANTIS provides five types of edit characters. Each edit character is discussed in the sections that follow. Each edit character is illustrated by examples which show the formats for data entry and data display using some typical edit masks. As a general rule, MANTIS allows data to be entered in exactly the same format as it is displayed, but does not insist on it. During data entry, you need not enter nonnumeric characters, but if you do, they must be in the correct relative position. Otherwise, MANTIS displays an error message.

A good way of testing an edit mask to make sure it displays numeric data in the format you want is to use the FORMAT function in MANTIS programming mode:

```
SHOW FORMAT(number,"mask")
```

For example:

```
SHOW FORMAT (-123.456,"######.##")
-123.46
```

The following table lists the five types of edit characters:

Character type	Valid characters and position
Float	♦ Any character, except for #, +, -, and (¦). ♦ Repeated in two or more positions at the beginning of a mask. ♦ May be separated by commas.
Fill	♦ Any character, except for # and ¦. ♦ Not in first position, but occurs more than once in consecutive positions. ♦ Two or more sign characters are treated as fill characters, even when preceded by another + or - in the first position.
Sign	♦ + and - in any position of the mask. ♦ CR, DR, and DB can be used in the last two positions of the mask.
Fixed Position	♦ Any character, except #, +, -, or a float or fill character. ♦ Broken vertical bars (¦) are the only fixed-position characters that can be repeated in consecutive positions.
Data Position	♦ # and 0. ♦ Each 0 represents a decimal digit position.

Float characters

A float character is any character (other than a data character, a sign character, or a blank-fill character) that is repeated in two or more positions at the start of an edit mask. The repeat characters can be separated by commas.

When displaying a number, MANTIS replaces the float characters in the positions occupied by the leading digits and sign of the number. One float character is always displayed, and "floats" to the start of the number or to the rightmost float character position. MANTIS replaces any preceding float characters with blanks.

MANTIS does not display superfluous commas which were preceded by float characters. MANTIS replaces a superfluous comma with a blank, or with the float character, as appropriate.

The following table lists display examples of the float characters in edit masks:

Edit mask	Data entered	Display
$$$$$$.##	33.90	$33.90
$$$$##.##	-52.45	$-52.45
$$####.##	163.99	$ 163.99
$$,$$$,$$$.##	1000000	$1,000,000.00
$$,$$$,$$$.##	100	$100.00

Fill characters

A fill character is any character (other than a data character or blank-fill character) that is repeated in two or more positions that are not at the start of an edit mask. Two or more repeated plus (+) or minus (-) characters are treated as fill characters, even when preceded by another plus (+) or minus (-) character used as a sign character in the first position. In this case, the sign character does not float, but is displayed in the first position of the field.

When displaying a number, MANTIS replaces the fill characters in the positions occupied by the digits and sign of the number. All remaining fill characters are displayed in the field.

The following table lists display examples of fill characters in edit masks:

Edit mask	Data entered	Display
$******.##	46.35	$****46.35
#AAABBBCCC	6018	AAABB6018
+++++++.####	24.13	+++++24.1300
+++++++.####	-691.842	-+++691.8420

Sign characters

Sign characters are the plus sign (+) and the minus sign (-), in any position of an edit mask, and CR (for credit) and DR or DB (for debit) when in the last two positions of an edit mask (CR, DR, and DB must be uppercase, otherwise they are treated as fixed-position characters). MANTIS displays the sign of a number according to the sign character. Displayed values are different depending upon the Logical Terminal Options of the configuration file. The following table illustrates the differences depending on the configuration setting CR/DR IN NUMERIC EDIT MASKS: DISPLAY “CR” IF POSITIVE (refer to the *MANTIS for Windows Administration Guide*, P19-2304, for more information about Logical Terminal Options):

Sign character	Display “CR” if Positive = Y		Display “CR” if Positive = N	
	+ number	- number	+ number	- number
+	123.34+	123.34-		
-	123.34	123.34-		
CR	123.34CR	123.34DR	123.34	123.34CR
DR	123.34	123.34DR	123.34DB	123.34
DB	123.34	123.34DB		

When a plus or minus sign character is specified in any position of an edit mask other than the last position, the sign displayed in the field floats to the start of the number. Apart from specifying the sign format, the sign character is treated as a data-position character, and can be replaced by a digit. When a sign character is specified in the last position of an edit mask, however, the sign always stays in the same position in the field, and is never replaced by a digit.

Edit mask	Data entered	Display
+######.##	-62.50	-62.50
##-#	69	69
###.###+	46.84294	46.843+
######.##CR	1028.57	1028.57CR
######.##DB	39.80	39.80

The letters CR, DR, and DB must be entered in uppercase.

Fixed-position characters

A fixed-position character is any character that is not a data-position character, a sign character, a float character, or a fill character. It follows that blank-fill characters are the only fixed-position characters that can be repeated in consecutive positions in an edit mask.

When displaying a number, MANTIS always displays fixed-position characters in the positions specified in the edit mask, with two exceptions:

- When the decimal point is defined as a period (.), MANTIS does not display a comma if it is not preceded by a digit or another fixed-position character. MANTIS replaces the comma with a blank, or with the float character, as appropriate.
- When the decimal point is not defined as a period, MANTIS suppresses periods instead of commas in the manner described above.

If the decimal point indicator is used more than once as a fixed-position character in an edit mask, it no longer indicates the position of the decimal point. MANTIS then assumes that the decimal point follows the rightmost character of the edit mask. The following table lists display examples of fixed-position characters in edit masks:

Edit mask	Data entered	Display
##/##/##	910819	91/08/19
##/##/##	91/01/01	93/01/01
ABC###DE##F	1066	ABC 10DE66F
#,###,###,###	1000000	1,000,000
#,###,###,###	100000	100,000
##.##.##.##	35917.72	.3.59.18

Data-position characters

Data-position characters are the data-fill character (#) and zero (0). Each character represents the position of a decimal digit. When displaying a number, MANTIS inserts the corresponding digit at each position. MANTIS always inserts trailing zeros, if necessary, to the right of the decimal point. MANTIS only inserts leading zeros to the left of the decimal point if the zero-fill character (0) is present. MANTIS inserts leading zeros, if necessary, as far to the left of the field as the leftmost zero in the edit mask. The zero-fill character (0) is otherwise treated the same as the data-fill character (#).

For compatibility with MANTIS for the IBM mainframe, you can use Z instead of 0, but Z is treated as a fill or float character if repeated in consecutive positions. Note that Z must be in uppercase.

The following table lists display examples of data-position characters in edit masks:

Edit mask	Data entered	Display
#####.##	159	159.00
#0###.##	159	0159.00
00000.0#	473.30	00473.30
0#	0	00

Most edit masks display as blank spaces when data associated with the fields is zero (e.g., on the first CONVERSE of a screen). Because the 0 and Z data-position characters cause leading zeros to be displayed, leading zeros will be displayed on initial CONVERSEs, even when the initial values of fields are zero.

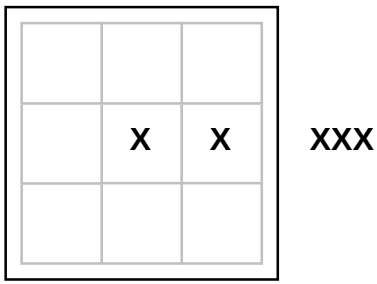
This can be inconvenient during data entry into these fields due to the invalid combination between the characters that were originally displayed, and the characters that were entered. The problem can be overcome by pressing the erase to end of field key after you enter the last input character in each of the fields.

Field specification matching

Every time you press ENTER or one of the logical keys described in , MANTIS performs field specification matching. Matching is performed only when MANTIS is editing an existing screen; that is, where the fields are already assigned names and attributes. Each field and heading inherits the field specifications of the field or heading that was within one column horizontally or within one row vertically the last time field matching was performed. This process is illustrated in the figure below. Field *XXXXX* must begin in one of the nine positions indicated to retain its specifications.

To move a field more than one character position, repeat the following procedure:

- Move the field one character position and press ENTER (or PF4). Each time you press ENTER, MANTIS checks and retains the field specifications.



MANTIS validates any extended editing attributes (described in “Attributes” on page 69), such as default value or range checking, that may be specified for any field(s) in your screen design. If MANTIS encounters an error, it highlights the field(s) in question, positions the cursor at the beginning of the field, and displays a message on the second to last line. You must correct the error (and change any other data on the screen) before sending it to MANTIS again.

After you enter all data, press CANCEL to return to the Screen Design Facility menu (see “Screen design facility menu” on page 44).

Screen design keys

The Create or Update a Screen option supports the program function and Screen Design keys shown in the following table (use these keys when you want to modify your screen design):

Key	Enables you to. . .
PF1	*Insert a line* before the field identified by the current cursor position, provided there is at least one empty line available in the specified screen domain.
PF2	*Delete a line* starting with the field identified by the current cursor position. This is not a delete to End-Of-Line function; instead, the deletion wraps to include any field in the next line whose starting column is less than the cursor's column position when PF2 is pressed. Fields that are left on the second line are brought up to the line which contains the cursor.
PF3	*Remove*, *display*, *or move the column scale line* at the cursor. Position the cursor anywhere in the row where you want the column scale line to appear, and press PF3. The column scale line temporarily overlays the data on this line. You can remove the scale line by positioning the cursor anywhere on the scale line and pressing PF3. The data that was overlaid reappears.
PF4	*Move the field* at the cursor. Position the cursor anywhere on the field and press PF4. MANTIS displays a prompt on the last line of the screen. Position the cursor to the start of the desired new location for the field, and press ENTER. MANTIS moves the selected field to the new location. Pressing any action key other than ENTER terminates the operation. The field retains its attribute settings. The new location must not be occupied by another field. MANTIS terminates the request and sounds the alarm if the selected destination overlaps another field or is outside the screen domain.
PF5	*Copy the field* at the cursor. This key works the same as PF4, except the selected field is copied instead of moved. The field name and attributes are also copied, which can result in two fields with the same name. So, you must change one of the two using the Update Field Specifications option (see "Update field specifications" on page 65).
PF6	*Delete the field* at the cursor. If you attempt to delete a field that does not exist, the alarm sounds.

Key	Enables you to. . .
PF7	*Insert a specified number of lines*. Position the cursor anywhere on the line after which blank lines are to be inserted and press PF7. MANTIS prompts you for the number of lines to insert. Specify the appropriate number and press ENTER. Pressing any PF key or function key terminates the operation. If there are insufficient blank lines in the screen domain, MANTIS inserts as many lines as possible. Note that unlike PF1, only complete lines are inserted; therefore, the column position of the cursor within the selected line is not relevant.
PF8	*Delete a specified number of lines*. Position the cursor anywhere on the line where deletion is to start and press PF8. MANTIS prompts you for the number of lines to delete. Specify the appropriate number and press ENTER. Pressing any other key terminates the operation. Note that unlike PF2, only complete lines are deleted; therefore, the column position of the cursor within the selected line is not relevant.
PF9	*Remove or add the row scale line*. If the row scale line is already displayed, it is removed; if not, it is displayed in column 1, temporarily overlaying any data in column 1. Note that unless the Field Separators Map-Level option is set to No (see "Library functions" on page 98), MANTIS will not allow you to use column 1 for your screen data even when the row scale line is not displayed.
PF10	*Move a range of lines*. Position the cursor anywhere on the first line to be moved and press PF10. MANTIS prompts you to select the last line in the range. Position the cursor anywhere on the last line and press ENTER. When MANTIS prompts you to select the destination line, position the cursor anywhere on the first line of the destination and press ENTER. Pressing any key other than ENTER at any point terminates the operation. MANTIS only moves the selected lines if the entire destination area is blank. The first and last lines selected may be the same line and the last line may precede the first line. The field names and attributes of all fields within the selected range are also moved during this process.

Key	Enables you to. . .
PF11	*Copy a range of lines*. This key works the same as PF10, except that the lines are copied instead of moved. This process produces two fields with the same name. So, you must change one of them by using the Update Field Specifications option ("Update field specifications" on page 65).
PF12	*Display the screen domain size* on the last line of the screen. You may change this value if you wish and press ENTER. If existing fields fall outside the new domain, MANTIS automatically extends the domain to the minimum size required to contain all fields.
PF14	*Invoke your text editor* (same as EDIT). This feature is usually only useful for creating a new design and not for editing an existing one because if you move an existing field by more than one row or column, you will lose its attributes.
HELP	*Display a help screen.* Press ENTER to continue.
EDIT	*Invoke your text editor* (same as PF14). This feature is usually only useful for creating a new design and not for editing an existing one because if you move an existing field by more than one row or column, you will lose its attributes.
LINEDRAW	*Draw lines* in Screen Design by using the cursor keys.
LINECLEAR	*Erase line-drawing characters* in Screen Design by using the cursor keys.

Drawing boxes

The Create or Update a Screen option enables you to create boxes by using line-drawing characters as part of your screen design. MANTIS treats line-drawing characters as heading data without field separators. To draw a line, press the LINEDRAW key combination, and use the cursor keys to draw lines. As you move the cursor, MANTIS displays the appropriate characters. MANTIS will not overwrite any existing data characters with a line-drawing character. To terminate LINEDRAW mode, press ENTER. To erase a line, enter blanks with the space bar, or press the LINECLEAR key combination, and use the cursor keys to trace the lines you wish to erase.

Sample screen design

Assume that you want to create a screen design that lists customers by customer number. You also want to include customer name, branch number, credit rating, credit limit, and a message line. Enter this data on the screen as follows:

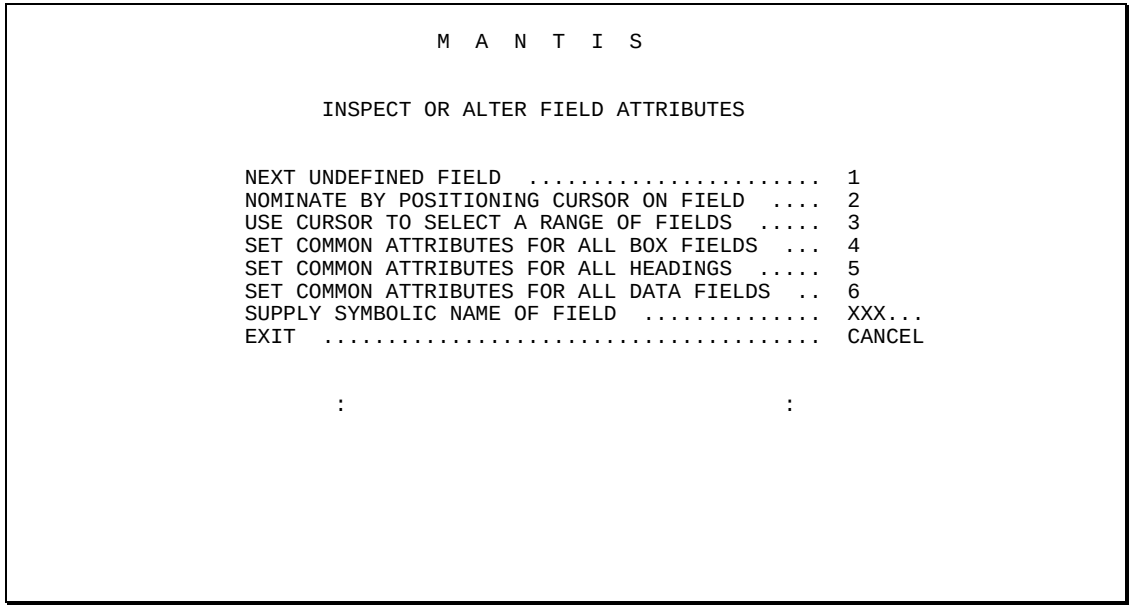
```
                                B¦U¦R¦R¦Y's
                               CUSTOMER¦REPORT

CUSTOMER¦¦¦¦¦¦¦¦CUSTOMER¦¦¦¦¦¦¦¦¦¦¦BRANCH¦¦¦¦¦¦¦¦CREDIT¦¦¦¦¦CREDIT
 NUMBER¦¦¦¦¦¦¦¦¦¦¦NAME¦¦¦¦¦¦¦¦¦¦¦¦¦NUMBER¦¦¦¦¦¦¦¦RATING¦¦¦¦¦LIMIT

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









##########################################################################
```

Notice that the blank-fill character (¦) connects the double-spaced heading characters (e.g., B¦U¦R¦R¦Y'S), and the words of a heading field (CUSTOMER¦REPORT).

Press CANCEL to return to the Screen Design Facility menu (see "Screen design facility menu" on page 44). From the Screen Design Facility menu, proceed to Library Functions and save your design as detailed in "Library functions" on page 98.

Update field specifications

The Update Field Specifications option allows you to examine, define, and alter attributes for each field in your current screen design. When you select the Update Field Specifications option from the Screen Design Facility menu (see “Screen design facility menu” on page 44), the following menu displays:



The options on this menu are described in the following sections.

Selecting fields for update

The Update Field Specifications menu provides several ways to select fields for definition. Each option is described below. For a new screen design, use the Next Undefined Field option to define each field. To update an existing screen design, use the Nominate by Positioning Cursor on Field option to select the field from your design or, if you know the field name, select the Supply Symbolic Name of Field option. The remaining options are used for special purpose editing of field attributes. See the remaining sections for details. "Attributes" on page 69 describes the field attributes you can specify.

NEXT UNDEFINED FIELD

This option enables you to name and assign attributes to an unnamed field. When you select this option from the Update Field Specifications menu (see "Update field specifications" on page 65), the first undefined field appears in high (bright) intensity. A prompt screen also appears, partially overlaying your screen design. Press ENTER after you define the attributes for each field. Repeat this procedure for each undefined field on your screen design. Press CANCEL at any time to return to the Update Field Specifications menu.

NOMINATE BY POSITIONING CURSOR ON FIELD

This option allows you to define or alter field attributes and heading intensities by directly selecting a field from your screen design and without specifying a field name. When you select this option from the Update Field Specifications menu (see "Update field specifications" on page 65), your screen design appears. To nominate a field, move the cursor to that field and press ENTER. You may also position your cursor on heading fields to change their attributes.

The following options allow you to provide attributes for a range or set of fields:

USE CURSOR TO SELECT A RANGE OF FIELDS

This option enables you to specify attributes that will be applied to a range of fields you select by cursor positioning. When you select this option, your screen design appears. Nominate the range of fields by moving the cursor to the first field and pressing ENTER. MANTIS highlights this field in bright intensity. Then, move the cursor to the last field (or the same field if you only want to select one field) and press ENTER.

SET COMMON ATTRIBUTES FOR ALL BOX FIELDS

This option allows you to specify attributes that MANTIS will apply to all box fields. When you select this option, your screen design appears with all box fields displayed in bright intensity and with the prompt shown in the following screen illustration, partially overlaying your screen design.

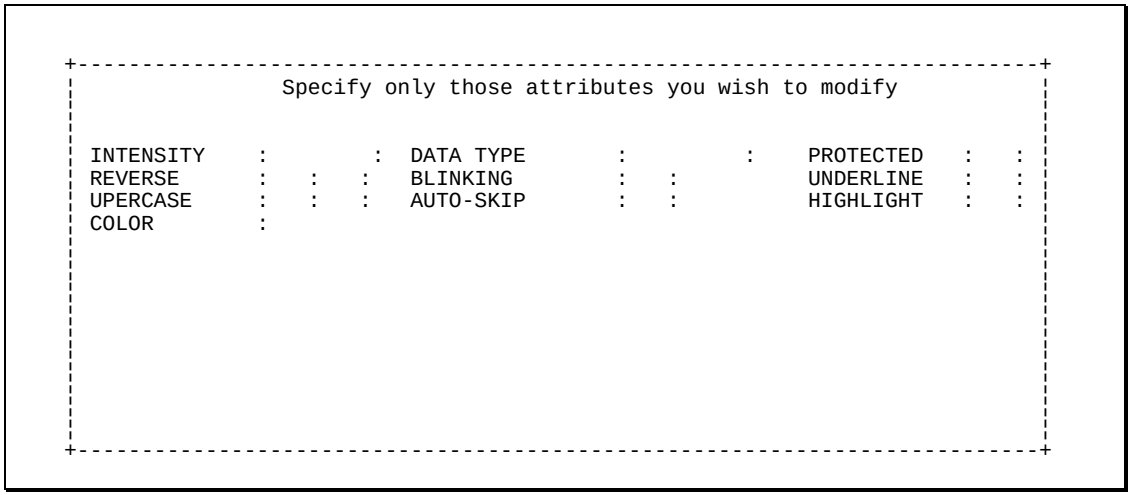
SET COMMON ATTRIBUTES FOR ALL HEADINGS

This option allows you to specify attributes that MANTIS will apply to all heading fields. Note that box fields are not considered heading fields for this selection. When you select this option, your screen design appears with all heading fields displayed in bright intensity and with the prompt shown in the preceding screen illustration, partially overlaying your screen design.

SET COMMON ATTRIBUTES FOR ALL DATA FIELDS

This option enables you to specify attributes that are applied to all data fields (not to heading or box fields). When you select this option, your screen design appears with all data fields displayed in bright intensity and with the prompt shown in the following screen illustration, partially overlaying your screen design.

MANTIS highlights all fields in the selected range and displays the prompt shown in the following screen illustration, partially overlaying your screen design:



Modifications to any of these attributes will apply to all fields you have selected in the range or by option (all box fields, headings, etc.). Attributes that are not modified will remain unchanged for each field in the range or option. See “Attributes” on page 69 for a description of these attributes.

SUPPLY SYMBOLIC NAME OF FIELD

This option allows you to inspect or alter a field by supplying that field's name on the Update Field Specifications menu (see "Update field specifications" on page 65).

EXIT

Press CANCEL to return to the Screen Design Facility menu (see "Screen design facility menu" on page 44).

Attributes

A list of the attributes you can specify for a field is provided as a prompt screen when you select the Next Undefined Field, Nominate by Cursor Positioning on Field, or Supply Symbolic Name of Field options.

The following table lists the MANTIS attributes for screens and fields (default values are underlined):

Attribute	Specified in
Screen design size	"Create or update a screen" on page 46.
Field attributes: ♦ Intensity (normal, bright, hidden ♦ Data type (text, numeric) ♦ Protected (no/yes) ♦ Reverse video (no/yes) ♦ Blinking (no/yes) ♦ Underline (no/yes) ♦ Uppercase (no/yes) ♦ Cursor autoskip (no/yes) ♦ Highlight (no/yes) ♦ Extended exit (no/yes)—see below ♦ Length ♦ Cursor positioning ♦ Color (no color, blue, green, neutral, pink, red, turquoise, yellow) ♦ Detectable (no/yes)* ♦ Modified (no/yes)* ♦ Left bar (no/yes)* ♦ Right bar (no/yes)* ♦ Overline (no/yes)* ♦ Vertical/horizontal repeats and displacement** ♦ Validation list (no/yes) ♦ Variable for validating ♦ Vertical Windowing (no/yes) ♦ Horizontal windowing (no/yes)	"Update field specifications" on page 65.

* For compatibility with MANTIS for the IBM mainframe.

** You can also specify repeats in the Update Repeat Specifications option in the Screen Design Facility.

Attribute	Specified in
Extended Edit Attributes for Fields: ♦ Required field (no/yes) ♦ Default display and value ♦ Field to be filled (no/yes) ♦ Valid name (no/yes) ♦ Fixed validation list (no/yes) ♦ Variable validation list—variable name ♦ Range checking—low and high values	"Update field specifications" on page 65.
Map attributes: ♦ Terminal alarm (no/yes) ♦ Full display (no/yes) ♦ Protect bottom line of screen (no/yes) ♦ Automatic windowing (no/yes) ♦ Field separators (no/yes) ♦ Opaque map (no/yes) ♦ Vertical windowing (no/yes) ♦ Horizontal windowing (no/yes)	"Library functions" on page 98.

Assume you are providing field specifications for the Customer Report screen introduced in “Sample screen design” on page 64. When you select the Next Undefined Field option (from “Update field specifications” on page 65), the following screen displays (the first undefined data field, in this case Customer Number, appears in bold):

```
                          B¦U¦R¦R¦Y'S
                         CUSTOMER¦REPORT

 CUSTOMER¦¦¦¦¦¦¦¦CUSTOMER¦¦¦¦¦¦¦¦BRANCH¦¦¦¦¦¦¦¦CREDIT¦¦¦¦¦CREDIT
  NUMBER¦¦¦¦¦¦¦¦¦¦¦NAME¦¦¦¦¦¦¦¦¦¦¦NUMBER¦¦¦¦¦¦¦¦RATING¦¦¦¦¦LIMIT

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

 +-------------------------------------------------------------------------+
¦ FIELD NAME    :                            :     ROW/COLUMN :  7  :   3 : ¦
¦ INTENSITY     : NORMAL     DATA TYPE       : TEXT :      PROTECTED  : N  :¦
¦ REVERSE       : N:         BLINKING        : N :         UNDERLINE  : N : ¦
¦ UPPERCASE     : N:         AUTO-SKIP       : Y :         HIGHLIGHT  : N : ¦
¦ EXTENDED      : N:         LENGTH          : 6 :         CURSOR     : N : ¦
¦ COLOR         :         :  DETECTABLE      : N :         MODIFIED   : N : ¦
¦ LEFT BAR      : N:         RIGHT BAR       : N :         OVERLINE   : N : ¦
¦ VERT REP/DISP              HORIZ REP/DISP  :                              ¦
¦                                                                          ¦
¦                                           :                              ¦
¦                                                                          ¦
+-------------------------------------------------------------------------+
```

Notice that MANTIS automatically provides row and column coordinates, the length of the field, and the default values for other specifications. The attributes are described below. After you define all the fields on your screen design, press CANCEL to return to the Screen Design Facility menu (see “Screen design facility menu” on page 44).

When Extended Editing field attributes are used in a screen in an application, MANTIS performs field validation after an action or macro key (such as ENTER is pressed). If you do not supply a value for the field, MANTIS supplies the default value. Field validation proceeds as if the value were entered by the user, verifying the value against the specified parameters. If you supply an invalid value (e.g., a value outside the minimum or maximum range or a value that is not in the validation list), MANTIS stops the field validation process and displays a message. You must reenter the field and the field validation process starts again.

The data fields are described on the following pages.

FIELD NAME

Description *Required*. Provides a symbolic name for this field.

Format 1- to 30-character alphanumeric name.

Considerations

- You must provide a valid MANTIS variable name. If not, you are prompted to correct the name.
- You can assign a field name only to a data field, not to a heading field.
- You can move data directly from a screen to a file or an interface by specifying the field names here which will correspond exactly with the element names specified in your file design (or interface). MANTIS builds only one data area for each field. MANTIS retrieves and stores data in a unique location for each field and does not move it from screen to file (or interface) or from file (or interface) to screen. By using the same names in your screen and file designs, you are referencing the same storage area.
- You can define a field in two different ways with automatic mapping. For example, you may define a text field with a length of 55 in your screen design and define a field with the same name in your external file design with a length of 35. MANTIS uses the first field length it encounters when it executes your program. Therefore, ACCESS and FILE statements should always occur first in your program. This will ensure that you always use the most current field definition.

ROW/COLUMN

Description MANTIS identifies the row and column coordinates of the field being defined.

Consideration You cannot modify these values here. To change the position of a field in your screen design, return to the Create or Update a Screen option (see "Create or update a screen" on page 46).

INTENSITY

Description *Optional*. Specifies the field as normal, bright, or hidden.

Default N

Options

B Bright

H Hidden

N Normal

Consideration Hidden fields are often used for passwords; bright fields are used for headings or key fields.

DATA TYPE

Description *Optional*. Indicates whether this field will be used for numeric values or for text only.

Default T

Options

N NUMERIC

T TEXT

Considerations

- If a data field is specified as numeric, the input and output edit characteristics described in "Numeric edit masks" on page 51 will be in effect.
- MANTIS for the IBM mainframe supports Kanji for Asian languages. For compatibility with MANTIS for the IBM mainframe, you can define the data type of a field as K (Kanji). However, you will receive an error if you try to use a Kanji field on MANTIS for Windows.
- All numeric fields allocated by Screen Design are defined as BIG. If a data field is specified as numeric, the input and output edit characteristics described in "Screen design considerations" on page 47 will be in effect. If you want a field to be SMALL, make sure that your MANTIS program defines it as SMALL before the SCREEN statement is executed.

PROTECTED

Description *Optional*. Indicates whether you want this field protected (allowing read-only capabilities) or whether you want it unprotected (allowing data to be entered in the field).

Default N

Consideration You cannot alter this attribute for heading fields.

REVERSE

Description *Optional*. Specifies whether the field should be displayed in reverse video.

Default N

BLINKING

Description *Optional*. Specifies whether the field should blink when it is displayed.

Default N

UNDERLINE

Description *Optional*. Specifies whether the field is to be underlined when it is displayed.

Default N

Consideration Underlining is supported only by monochrome displays.

UPPERCASE

Description *Optional*. Indicates whether input data for this field will be converted to and displayed in uppercase by MANTIS.

Default N

AUTO-SKIP

Description *Optional*. Indicates whether the cursor should skip automatically to the next unprotected input field when this field is completely filled.

Default Y

Consideration When this option is disabled, the operator must always use the TAB key to advance to the next field.

HIGHLIGHT

Description *Optional*. Indicates whether the field will be displayed with any highlighting attribute (BRIGHT or UNDERLINE) that the output device supports. If both BRIGHT and UNDERLINE are supported, MANTIS uses BRIGHT for screen output and UNDERLINE for printer output.

Default N

EXTENDED

Description *Optional.* Indicates whether this field is to have extended editing.

Default Y

Consideration If you specify Y (yes), MANTIS displays the additional prompt screen, shown in the following example, when you press ENTER:

```
+-------------------------------------------------------------------------------+
|                              EXTENDED EDIT                                    |
|     REQUIRED : N :  DISPLAY DEFAULT : Y :   FILL: N :   VALID NAME: N :       |
|     VALIDATION LIST : N : VARIABLE :                                  :       |
|     EXIT ROUTINE :                                  :                         |
|                                                                               |
|      1-DEFAULT VALUE  2-LOW RANGE VALUE  3-HIGH RANGE VALUE                   |
|   1- :                                                                :       |
|   2- :                                                                :       |
|   3- :                                                                :       |
+-------------------------------------------------------------------------------+
```

REQUIRED

Description *Optional.* Requires users to enter data in this field.

Default N

Consideration MANTIS displays an error message if this field is null or zero after the screen is conversed.

DISPLAY DEFAULT

Description *Optional.* Displays the default value for the field (specified in line 1 of this prompt) when the screen is conversed, and the field is otherwise null or zero.

Default Y

Consideration If you do not select this attribute but specify a default value, the field will appear empty when the screen is conversed (if the field was not initialized by the program). If you do not enter a value in the field (or clear it), MANTIS will set 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.* Requires users to fill the entire field when they enter data.

Default N

VALID NAME

Description *Optional.* Ensures that the only data entered into a text field is a valid MANTIS symbolic name (see "MANTIS symbolic names" on page 25). This feature is mainly by the MANTIS facility programs.

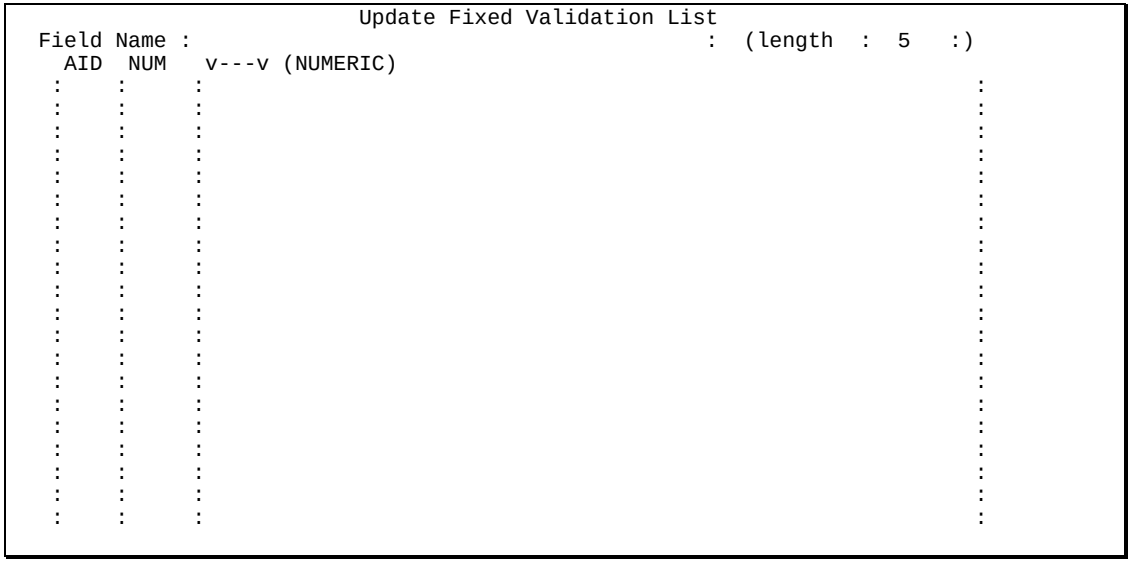
Default N

VALIDATION LIST

Description *Optional*. Indicates whether the value of this field should be validated against a fixed list of values.

Default N

Consideration If you specify Y (yes), MANTIS displays a Fixed Validation List screen similar to the following when you press ENTER. One of two screens is displayed depending on whether the field is text or numeric. The screens allow up to a screen of validation entries, one entry per line. You may enter values in any order.



The field name and its length are displayed at the top of this screen for text and numeric fields. Supply data for the following fields:

A-I-D

Description *Required*. Specifies the action you want to perform on an entry.

Options

A ALTER

I INSERT

D DELETE

NUM

Description MANTIS supplies the entry's number in the list.

v--v

Description *Required*. Provides a value for the field.

Considerations

- The validation data you enter in this column should not exceed the length of the field, because it may represent a value that cannot be entered into the field when the screen is conversed. The "v--v" is displayed to show the length of the data field.
- MANTIS does not check to ensure that the values you enter fall within the high and low range specifications of the Extended Edit Facility, or that the values are compatible with the field type or edit mask.
- When you exit from the Fixed Validation List screen, any changes you have made are registered and MANTIS returns to the screen where the field was chosen. At this point, if the fixed list is empty, the Validation List field in the Extended Edit Facility is reset to N.

- To delete the validation list, delete all entries in the Fixed Validation List screen.
- Help is available via the HELP macro key.
- Editing on the list stops when you press ENTER, and there are no action indicators in the A-I-D column.
- You may use CANCEL to override MANTIS field editing (at any point) when a screen has been CONVERSED, and force control to return to the program.
- Use the Extended Edit Attribute terminal function to inspect edit attributes for a field, including the validation list. Position the cursor over the field and press the VALIDINFO editing key. You may perform this function at any time during data entry to the screen. When you have finished viewing the attributes, press ENTER to go back to your data entry screen. To exit from a multipage display before the display is complete, press CANCEL.
- Both validation list and variable name entries may exist for the same field.

VARIABLE

Description *Optional*. Specifies a MANTIS variable to be used for validating the contents of the field.

Format MANTIS variable, numeric or text string, scalar variable, or one-dimensional array.

Considerations

- The variable name represents a simple variable, or more commonly, an array of compatible type to the field. This variable holds the value (or values) that are valid for the field. This list of values is specified at run time rather than in Screen Design.
- The named variable is not prefixed if PREFIX is used on the SCREEN statement.

EXTENDED EDIT DATA

Description *Optional*. Provides information for any or all of the following entries:

- Default value for the field.
- Low-range check (lowest value user can enter).
- High-range check (highest value user can enter).

Consideration If you do not enter a value, MANTIS assumes you do not want that particular extended edit attribute associated with the field. Also, MANTIS does not ensure the following conditions:

- Default value falls between the low and high range, and the low range is less than the high range.
- Supplied values are compatible with the field type or edit mask.

LENGTH

Description *Optional*. Provides the length of the field.

Default MANTIS displays the length of the selected field based on the mask characters you entered.

Considerations

- You may alter the length at this point to correct a design error, but MANTIS will not allow you to set the length to zero or reduce the size of the field if the mask contains edit characters other than the data-fill character (#).
- If you set the field length to 255, MANTIS adjusts the field length to fill the rest of the screen row (or printer line if OUTPUT PRINTER is in effect) when the SCREEN statement is executed.

CURSOR

Description *Optional*. Specifies whether MANTIS should put the cursor in this field when you converse the screen.

Default N

Considerations

- If more than one field in a screen has the CURSOR attribute, the first field has the cursor when the screen is conversed (the field with the CURSOR attribute that has lowest row and column coordinates).
- If the ATTRIBUTE(...)=“CUR” statement is executed, the cursor attributes of all other fields in the screen will be canceled. If more than one field is given the cursor attribute by the ATTRIBUTE statement, only the last ATTRIBUTE statement is effective.

COLOR

Description *Optional.* Specifies the color of the field.

Default No color.

Options BLUE, RED, GREEN, TURQUOISE, NEUTRAL, YELLOW, or PINK

Considerations

- Only the first three characters of a color are required.
- MANTIS detects color capability for the display when you sign on to MANTIS. Color support can be enabled or disabled using the ATTRIBUTE(TERMINAL) statement (which is restricted to the Master User).
- User-defined field colors are not displayed during the screen design session, with the exception of the Display Completed Design option. This option displays the correct field colors, depending on the associated screen attributes.
- If you do not specify a color, and you have a color display, you will get the following colors:

Attributes	Default
Protected, Bright	White
Unprotected, Bright	Red
Protected, Normal	Blue
Unprotected, Normal	Green

This is done to emulate an IBM 3279 terminal.

DETECTABLE

Description *Optional*. For compatibility with MANTIS for the IBM mainframe only. Indicates whether you want the field to be pen detectable.

Default N

Consideration Cincom recommends you leave this field as N, unless you are designing a screen that will be migrated to the IBM mainframe.

MODIFIED

Description *Optional*. For compatibility with MANTIS for the IBM mainframe only. Indicates whether you want the field marked as modified when you converse the screen (and whether or not you modified it).

Default N

Consideration Cincom recommends you leave this field as N, unless you are designing a screen that will be migrated to the IBM mainframe.

LEFT BAR

Description *Optional*. For compatibility with MANTIS for the IBM mainframe only. Indicates whether you want a left bar at the beginning of your field.

Default N

Consideration Cincom recommends you leave this field as N, unless you are designing a screen that will be migrated to the IBM mainframe.

RIGHT BAR

Description *Optional*. For compatibility with MANTIS for the IBM mainframe only. Indicates whether you want a right bar at the beginning of your field.

Default N

Consideration Cincom recommends you leave this field as N, unless you are designing a screen that will be migrated to the IBM mainframe.

OVERLINE

Description *Optional.* For compatibility with MANTIS for the IBM mainframe only. Indicates whether you want an overline at the top of your field.

Default N

Consideration Cincom recommends you leave this field as N, unless you are designing a screen that will be migrated to the IBM mainframe.

VERTICAL REPEATS/DISP

Description *Optional.* Specifies the vertical repeat count and displacement if you want the field to have multiple occurrences.

Default Repeats = 0 If Repeats are specified, you must enter a value for the displacement, or you will get an error message from Screen Design.

Format Enter the number of additional occurrences of the field (not the total number of occurrences) and the spacing between rows (1 = single spacing, 2 = double spacing, etc.).

Considerations

- This field actually consists of two data entry fields separated by a space. The first field is for the additional repeats, and the second field is for the vertical displacement.
- If you enter 255 as the number of repeats, MANTIS will automatically adjust the repeat count to fill the physical screen (or printer page if OUTPUT PRINTER is in effect) when the SCREEN statement is executed.
- You can also specify vertical repeats by using the Update Repeat Specifications option described in "Update repeat specifications" on page 90.
- If any of the extra fields overlap any existing fields or extend beyond the domain of the screen design, you will not be permitted to save or replace the design. An error message indicating the problem will be displayed when you try to display, save, or replace the completed design.

HORIZONTAL REPEATS/DISP

Description *Optional*. Specifies the horizontal repeat count and displacement if you want the field to have multiple occurrences.

Default Repeats = 0 If Repeats are specified, you must enter a value for the displacement, or you will get an error message from Screen Design.

Format Enter the number of additional occurrences of the field (not the total number of occurrences) and the spacing between the fields (the number of columns from the start of one field to the start of the next).

Considerations

- This field actually consists of two data entry fields separated by a space. The first field is for the additional repeats, and the second field is for the horizontal displacement.
- MANTIS wraps extra horizontal occurrences of a field to the next line as long as they fit within the screen domain. MANTIS will not break a field when wrapping. If an occurrence of the field does not fit at the end of one line, the entire field is moved to the next line.
- You can specify horizontal repeats by using the Update Repeat Specifications option described in "Update repeat specifications" on page 90.
- If any of the extra fields overlap any existing fields or extend beyond the domain of the screen design, you will not be permitted to save or replace the design. An error message indicating the problem will be displayed when you try to display, save, or replace the completed design.

Press ENTER after you define the attributes for each field. MANTIS presents the next undefined field. Repeat this procedure until you define all the fields. When all fields are defined, MANTIS returns you to the Update Field Specifications menu (see the illustration in "Update field specifications" on page 65). From there, press CANCEL to return to the Screen Design Facility menu (see "Screen design facility menu" on page 44).

List field specifications

The List Field Specifications option enables you to view and optionally select for modification all fields (both data and headings, but not boxes) and their attributes (where nondefault values are specified). You can use this option at any time during the screen design process to verify field specifications.

When you select the List Field Specifications option from the Screen Design Facility menu (see “Screen design facility menu” on page 44), a screen appears with all field names, field masks, heading text, and nondefault attributes listed for the screen currently in your work area. You may select fields for update from this screen. The following example shows a sample list of field specifications:

```
                              FIELD SPECIFICATION FOR BURRYS              PAGE 1
SEL---------FIELD NAME----------- ROW.COL LEN -------ATTRIBUTE LIST--------
   "B U R R Y'S"                   1,30    11   BRI
   "CUSTOMER REPORT"               2,28    15   BRI
   CUST_NUMBER                     7,3     6    BRI,NUM
   CUST_NAME                       7,12    20
   BRCH_NUMBER_CUST                7,37    4    NUM
   CUST_CREDIT_RAT                 7,52    2    NUM
   CUST_CREDIT_LIM / $#####        7,59    6    NUM,MAS*
   MESSAGE                         22,3    77   BRI,PRO









USE <CANCEL> TO TERMINATE
```

* MANTIS provides this attribute for data fields with characters other than the hash mark (#).

A description of this screen follows.

SEL

Description *Optional*. Selects the corresponding field for modification.

Option S Select

Consideration After you select this field, the S is replaced with an asterisk (*).

FIELD NAME

Description MANTIS displays the symbolic name for each field.

Considerations

- If the field has a mask (other than all hash characters), MANTIS displays as much as possible of the mask beside the field name, separated by a slash (/).
- If the field is a heading, MANTIS displays as much as possible of the heading text here.
- Box fields are not displayed on this listing.

ROW,COL

Description MANTIS provides the row and column coordinates of the field.

LEN

Description MANTIS displays the field length.

ATTRIBUTE LIST

Description MANTIS displays the nondefault field attributes in their abbreviated 3-character form (see "Attributes" on page 69 for descriptions of these attributes). The attributes (with their abbreviations underlined) that can be displayed are:

Attribute	Abbreviation
Intensity	BRIGHT, HIDDEN
Data type	NUMERIC, HEADING
Protected	PROTECTED
Pen detectable*	DETECTABLE
Modified field*	MODIFIED
No autoskip to next field	NO AUTOSKIP
Color	NEUTRAL, BLUE, PINK, GREEN, TURQUOISE, RED, YELLOW
Reverse video	REVERSE
Blinking	BLINK
Field underlining	UNDERLINE
Position cursor	CURSOR
Highlight field	HIGHLIGHT
Extended edit	
Required field	REQUIRED
Default value	DEFAULT VALUE
Field to be filled	FILL
Valid name	VALID NAME
Fixed Validation list	VALIDATION LIST
Variable Validation list	VARIABLE
Display default	DISPLAY DEFAULT
Range checking	RANGE CHECK

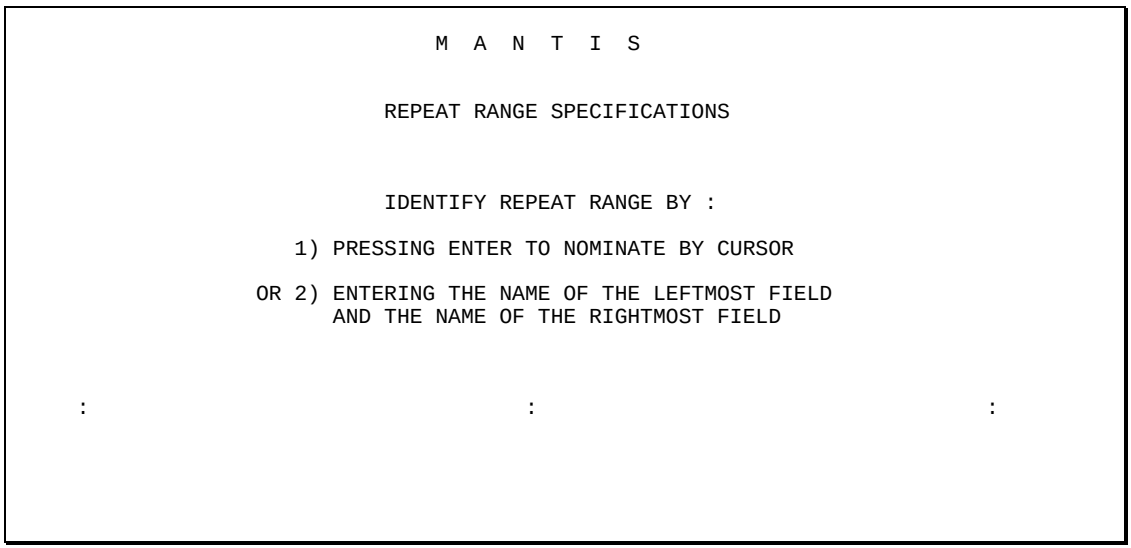
* For compatibility with MANTIS for the IBM mainframe only.

Attribute	Abbreviation
Numeric edit mask	MASKED
IBM field boxing	LEFT BAR, RIGHT BAR, OVERLINE

Press CANCEL to return to the Screen Design Facility Menu (see "Screen design facility menu" on page 44).

Update repeat specifications

The Update Repeat Specifications option enables you to repeat a field or consecutive fields vertically or horizontally on your screen design. (You can also specify repeat specifications in the Update Field Specifications option, as described in "Attributes" on page 69.) When you select the Update Repeat Specifications option from the Screen Design Facility menu (see "Screen design facility menu" on page 44), the following menu displays:



Identifying fields

From the Update Repeat Specifications screen (see the illustration in "Update repeat specifications" on page 90), identify which field(s) you want to repeat by using one of the following methods:

PRESSING ENTER TO NOMINATE BY CURSOR

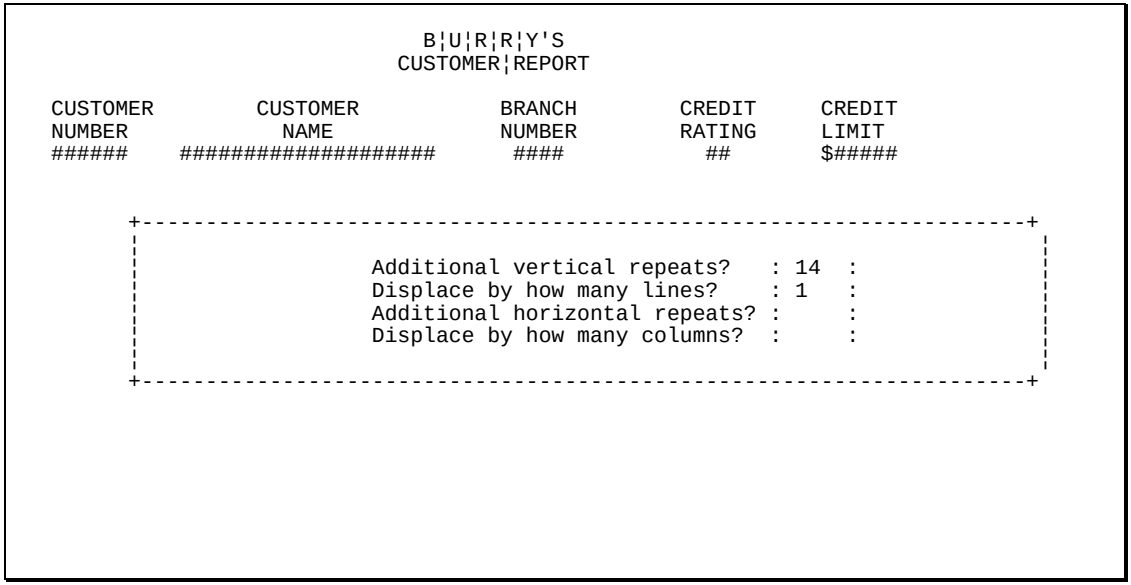
Description Press ENTER and your current screen design appears. To nominate the field(s) you want repeated, move the cursor to the first field and press ENTER. MANTIS highlights this field. Then, move the cursor to the last field (or do not move it if you want to repeat only one field) and press ENTER.

ENTERING THE NAME

Description Enter the name of the field to be repeated and press ENTER. To nominate a consecutive range of fields, key in the names of the first and last fields to be repeated and press ENTER.

Number of repeats

After nominating the field or a range of fields, the following screen displays with the field(s) and the prompt displayed in bright intensity:



Enter data as described on the following pages.

Additional vertical repeats?

Description Indicates the number of additional vertical repeats you want (not the total number of occurrences). Enter 0 if you do not want any vertical repeats.

Considerations

- If you enter 255, MANTIS will automatically adjust the repeat count to fill the screen window (or printer page if OUTPUT PRINTER is in effect) when the SCREEN statement is executed.
- If any of the extra fields overlap any existing fields or extend beyond the domain of the screen design, you will not be permitted to save, display or replace the design. An error message indicating the problem will be displayed when you try to display, save, or replace the completed design.

Displace by how many lines?

Description Specifies the spacing you want between vertically repeated lines.

Options 1 (single space), 2 (double space), and so on.

Additional horizontal repeats?

Description Specifies the number of additional horizontal repeats you want (not the total number of occurrences). Enter 0 if you do not want any horizontal repeats.

Displace by how many columns?

Description Specifies the spacing you want between horizontally repeated lines. (e.g., if you want to repeat a 3-character field with two characters between fields, the column displacement is five columns).

Considerations

- MANTIS wraps extra horizontal occurrences of a field to the next line as long as they fit within the map domain. MANTIS will not break a field when wrapping. If an occurrence of the field does not fit at the end of the line, the entire field moves to the next line.
- The combination of occurrences and displacement should not exceed the capacity of the screen domain. If it does, MANTIS will issue an error when you select the Display Completed Design option or when you attempt to save or replace the screen. The screen domain size can be viewed only by pressing PF12 in basic screen update mode.

After you have entered your repeat specifications, press ENTER. MANTIS accepts the specifications and returns you to the screen design to allow you to make more selections. When you are finished specifying field repeats, press CANCEL to return to the Update Repeat Specifications menu (see "Update repeat specifications" on page 90).

List repeat specifications

The List Repeat Specifications option enables you to view all existing repeat specifications. You may use this option at any time during the screen design process to verify any repeat specifications you have defined for the screen design currently in your work area in the Update Field Specifications option (“Update field specifications” on page 65) or in the Update Repeat Specifications option (“Update repeat specifications” on page 90).

When you select the List Repeat Specifications option from the Screen Design Facility menu (see “Screen design facility menu” on page 44), MANTIS displays all existing repeat specifications associated with the current screen design, as shown in the following screen illustration. Heading fields that are repeated are not listed. To view their attributes, use the nominate by cursor option in Update Repeat Specifications (see “Update repeat specifications” on page 90). To return to the Screen Design Facility menu (see “Screen design facility menu” on page 44), press CANCEL.

```
                          REPEAT SPECIFICATIONS FOR BURRYS              PAGE 1

FIELD NAME          ROW   COLUMN   SIZE      VERTICAL      HORIZONTAL
                                            REPEAT  DISP  REPEAT  DISP
-------------------------------------------------------------------------

CUST_NUMBER          7     3       6         14    1
CUST_NAME            7     12      20        14    1
BRCH_NUMBER_CUST     7     37      4         14    1
CUST_CREDIT_RAT      7     52      2         14    1
CUST_CREDIT_LIM      7     59      6         14    1









Use <ENTER> to page, <CANCEL> to terminate
```

Display completed design

The Display Completed Design option enables you to view the screen design currently in your work area, showing all repeated fields as they appear when the screen is used. Fields are displayed with the attributes you specified. This option enables viewing only; to modify attributes, return to the Update Field Specifications option ("Update field specifications" on page 65).

When you select the Display Completed Design option from the Screen Design Facility menu (see "Screen design facility menu" on page 44), the following screen displays (assuming you specified the same fields and vertical repeats defined in the Customer Report sample in "Attributes" on page 69):

```
                              B U R R Y'S
                             CUSTOMER REPORT

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

The scale line across the top of the screen and the blank-fill characters are not displayed. Also, default values are not displayed.

MANTIS checks that the completed design is consistent, with no fields overlapping one another or extending beyond the screen domain. A message will describe any inconsistencies.

If your map domain is larger than the physical screen, you can scroll to view the entire design by using the PF keys listed in "MANTIS editing and windowing keys" on page 36.

Use this option to test tab settings by checking that fields which should be protected are correctly specified (tab positions exist only at the beginning of unprotected fields). You can also test cursor positioning and keystrokes without going into programming mode. Note that MANTIS does not apply either the NUMERIC field attribute, nor any of the extended editing options in this option of Screen Design.

After examining your screen design, press any action or macro key (see "MANTIS action keys" on page 39 or "Macro keys" on page 40) to return to the Screen Design Facility menu (see "Screen design facility menu" on page 44).

Library functions

The Library Functions option enables you to save new screen designs and to retrieve, replace, and delete existing screens. When you complete the specified activity, MANTIS returns to the Screen Design Facility Menu and displays a confirmation message in the lower left corner of the screen.

When you select the Library Functions option from the Screen Design Facility menu (see “Screen design facility menu” on page 44), the following screen displays:

```
                          M  A  N  T  I  S

                    SCREEN DESIGN LIBRARY FACILITY

    NAME OF SCREEN..... :                                              :
    DESCRIPTION ....... :                                             :
    LANGUAGE .......... : ENGLISH         :


    SOUND ALARM............... : N :         FULL DISPLAY........... : N :
    PROTECT BOTTOM LINE....... : N :         AUTOMATIC WINDOWING.... : Y :
    FIELD SEPARATORS.......... : Y :         OPAQUE MAP ............ : N :
    VERTICAL WINDOWING........ : Y :         HORIZONTAL WINDOWING... : Y :

    SAVE.........................  1         CLEAR WORK AREA.................5
    REPLACE......................  2         EXPORT..........................6
    FETCH........................  3         IMPORT..........................7
    DELETE.......................4           TERMINATE..................CANCEL
                                  :    :
```

Enter data as described below:

NAME OF SCREEN

Description *Required for new screens*. Specifies the name of the screen design.

Default If you have a screen design in your work area that was previously saved, its name will appear here.

Format 1- to 30-character alphanumeric name.

DESCRIPTION

Description *Optional*. Provides a description of this screen.

Format 1- to 48-character alphanumeric description.

Consideration When updating an existing screen design, MANTIS displays the description. To change the description of a screen design, type over the existing description and replace it by using option 2.

LANGUAGE

Description *Optional*. Specifies a language attribute for the screen design. Change it to another language if appropriate.

Default The language that is set up in your User Profile.

Consideration MANTIS validates the language field and displays an error message if necessary.

SOUND ALARM

Description *Optional*. Causes the personal computer to beep when the screen is conversed.

Default N

FULL DISPLAY

Description *Optional*. Prevents the Unsolicited Input field, Message field, and Reply field at the bottom of the screen from being displayed. This attribute enables you to use the entire screen for your own data.

Default N

Considerations

- If you select this option, you cannot enter data in any of the fields in the input map. If MANTIS detects an error in a field, it highlights the field, but you will not be able to see the associated error message. However, you may at any time add (or remove) the bottom two lines of the screen, as appropriate, by pressing the INPUTMAP key. When displayed, it simply overlays any of your data displayed on the bottom two lines.
- You can prevent input to the Unsolicited Input field and Reply field with the Protect Bottom Line attribute below.

PROTECT BOTTOM LINE

Description *Optional*. Protects the Unsolicited Input field and Reply field at the bottom of the screen.

Default N

Consideration If you select this option, the only way you can KILL a program in a converse loop is by using the KILL logical function key (you will not be able to enter KILL in the Reply field.

AUTOMATIC WINDOWING

Description *Optional*. Automatically moves the window on your screen when tabbing to a field not displayed at all on the screen.

Default Y

Consideration Specifying N (no) provides compatibility with MANTIS for the IBM mainframe.

FIELD SEPARATORS

Description *Optional.* Precedes every field by a field separator (a blank).

Default

Y If line drawing is not used.

N If line drawing is used.

Options

Y Activate field separators.

N Do not activate field separators.

Considerations

- Specifying N (no) allows you to use column 1 for data in your screen design, and allows you to create fields using horizontal repeats that are not separated by at least one blank. However, in the Create or Update a Screen option, MANTIS still requires a blank to separate fields.
- A screen without field separators cannot be used with compatibility mode in effect and cannot be migrated to the mainframe.

OPAQUE MAP

Description *Optional.* Creates an opaque (rather than transparent) map when it is conversed.

Default N

Consideration When an opaque map overlays another map, fields in the map(s) below will not show through in those areas of your map domain that do not have fields or headings defined. Do not select this option unless you specifically require this feature because it increases the amount of data displayed when the screen is conversed.

VERTICAL WINDOWING

Description *Optional*. Specifies whether vertical windowing is enabled or disabled.

Default Y Yes

Considerations

- If vertical windowing is disabled, a map does not move vertically when a windowing operation is performed.
- A map with disabled windowing "floats" above the other maps in the logical display (the map has a fixed vertical and/or horizontal position relative to the screen). Because of this "floating" behavior, all fields in the map will be updatable regardless of the CONVERSE options used.

HORIZONTAL WINDOWING

Description *Optional*. Specifies whether horizontal windowing is enabled or disabled.

Default Y

Considerations

- If horizontal windowing is disabled, a map does not move horizontally when a windowing operation is performed.
- A map with disabled windowing "floats" above the other maps in the logical display (the map has a fixed vertical and/or horizontal position relative to the screen). Because of this "floating" behavior, all fields in the map will be updatable regardless of the CONVERSE options used.

The following actions can be executed from the Screen Design Library Facility menu by typing the number of the action in the action field and pressing ENTER or by pressing the corresponding PF key:

- **SAVE**. Saves a new screen design from your current work area into your library. Use this option only when you save a new screen design for the first time, that is, it is not already in your library. To rename a screen, save the current screen design with a new name and then delete the old screen.

- **REPLACE**. Replaces the screen design in your library with the updated version currently in your work area.

- **FETCH**. Retrieves a screen design from your library and places it in your work area. If a design already exists in your work area and has not been saved or replaced, a message asks you to confirm your action. To fetch the design, press PF3 again (or press ENTER again if you entered a 3 in the action field). To cancel the action, press CANCEL or any other key. (Then you can save the screen design currently in your work area before fetching another screen design from your library.)

- **DELETE**. Deletes a screen design from your library. When you select this option, a message asks you to confirm your decision. To delete the screen design, press PF4 again (or press ENTER again if you entered 4 in the action field). To cancel the deletion, press CANCEL or any other key.

- **CLEAR WORK AREA**. Clears your current work area. If a design already exists in your work area and has not been saved or replaced, a message asks you to confirm your action. To clear the work area, press PF5 again (or press ENTER again if you entered 5 in the action field). To cancel your action, press CANCEL or any action or macro key.

- **EXPORT**. Exports a screen design from your library. You can specify only a single design to be exported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus export more than one design/entity. The default output file is of the form *screen_name*.exp. The export function only works on saved designs and does not affect the work area. Unsaved changes to the current working design cannot be exported. If unsaved changes exist, you will be required to confirm the export but the changes to the work area will not be lost.

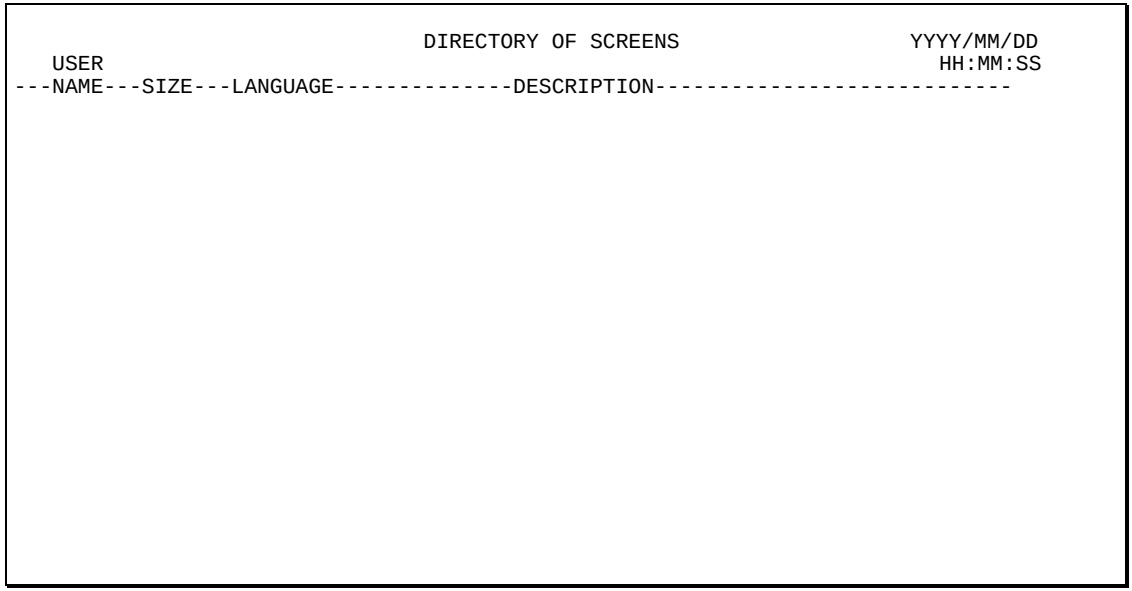
- **IMPORT**. Imports a screen design to your library. You can specify only a single design to be imported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus import more than one design/entity. The default input file is of the form *screen_name*.exp.

- **TERMINATE**. Press CANCEL to return to the Screen Design Facility menu.

The current screen design remains in your work area until you fetch another screen design, clear the work area, or exit from the Screen Design Facility.

Directory of screens

The Directory of Screens option enables you to view an alphabetic listing of all screen designs in your library. When you select this option from the Screen Design Facility menu (see “Screen design facility menu” on page 44), the following screen displays, listing all the screens in your library:



You may only view the listing; you may not change any information on this screen. You can position the directory list by entering 1–16 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 begins the listing with the screen name on, or alphabetically after, the entered characters.

Press ENTER to scroll through the listing or to return to the Screen Design Facility menu after viewing the list of screen designs. To exit at any point before the end of this display, press CANCEL. You will return to the MANTIS Screen Design Facility menu (“Screen design facility menu” on page 44).

Print completed design

The Print Completed Design option enables you to obtain a hard copy of your current screen design. You can return to the Screen Design Facility menu (see “Screen design facility menu” on page 44) at any time during the screen design phase and select this option. This routes the current screen design field specifications, repeat range specifications, and completed design to your designated printer.

3

File design

This chapter explains how to create MANTIS files, external file views, and TOTAL file views. MANTIS files are typically used for prototyping, small work files, and small table look-ups. External file views can be for native personal computer files, personal computer files that emulate VSAM files, and PC CONTACT files. TOTAL file views must be migrated to the mainframe to be accessed. The following table lists the types of files and views you can create and where you can learn more about them:

Facility	Enables you to. . .	See
MANTIS File Design	Design and create MANTIS files for use on the personal computer or mainframe.	"MANTIS file design facility" on page 108.
External File View Design	Design and create external file views for native personal computer files, personal computer files that emulate VSAM files, and PC CONTACT files.	"External file view design facility" on page 124.
TOTAL File View Design	Design and create TOTAL file views to be accessed on the mainframe.	"TOTAL file view design facility" on page 154.

MANTIS programs can perform GET/UPDATE/INSERT/DELETE statements on files and views after opening them with the FILE and ACCESS statements. At this point, the appropriate password should be specified for the desired level of access (read, update, or insert/delete).

MANTIS file design facility

The MANTIS File Design Facility enables you to design and create MANTIS files for use on the personal computer or mainframe. MANTIS files are typically used for prototyping, small work files, and small table look-ups. You can create and save a maximum of 999 file profiles for each user and update and maintain existing file profiles. When you select the Design a File option from the MANTIS Facility Selection menu, the following menu displays:

```
                        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


                        : _ :
```

To create a new file design, follow the sequence on the File Design Facility menu (first create the file, then update record layouts, etc.). To update an existing file design, use the Library Functions to fetch the file from your library (see "Library functions" on page 119), and then go into Create or Update File Profiles.

You may move among the options listed on this screen without losing the file design currently in your work area. Remember to save your file design or any updates via the Library Functions option before exiting from this facility to the Facility Selection menu (see "Signing on to MANTIS" on page 41). If you try to exit from the File Design Facility without saving current changes, MANTIS asks you to confirm your exit.

The remainder of this section discusses the File Design options. If you are creating a new file, proceed through this section sequentially. If you are updating an existing file design, go directly to the areas you need. The following table provides an overview of the options available in File Design and where each option is discussed:

This option	Enables you to. . .	See
Create or Update File Profiles	Create a new MANTIS file design or update an existing one.	"Create or update file profiles" on page 110.
Update Record Layout	Create a new record layout or update an existing record layout for a file.	"Update record layout" on page 113.
Library Functions	Save, replace, fetch, or delete a MANTIS file.	"Library functions" on page 119.
Directory of File Profiles	View a list of MANTIS files in your library.	"Directory of file profiles" on page 122.
Print Completed Design	Print a MANTIS file view (as defined by your Master User).	"Print completed design" on page 123.

Create or update file profiles

The Create or Update File Profiles option enables you to create a new MANTIS file profile or update the profile of an existing file. If you are creating a new file profile, select the Create or Update File Profiles option from the MANTIS File Design Facility menu (see the illustration in "MANTIS file design facility" on page 108). The following screen displays:

```
                        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................................... :                  :


DATE OF LAST PROFILE UPDATE.............. :          :
TIME OF LAST PROFILE UPDATE.............. :          :

FIELD COUNT.............................. :          :
```

If you are updating an existing file profile, or returning to this option after performing other options in MANTIS File Design, the file name currently in your work area will be displayed in the first field on this screen (after you fetch the file from your library).

To create a new file profile, enter data as described below:

NAME AND DESCRIPTION OF FILE

Description *Name is required; Description is optional.* Identifies the file design from all the files listed in your directory.

Format 1- to 16-character alphanumeric symbolic name; 1- to 58-character description.

ASSOCIATED RECORD LAYOUT

Description *Optional.* Identifies an existing file profile if your file will use a record layout identical to that file. In this case, do not redefine the record layout; simply enter the name of the existing file with the same record layout.

Format The name of an existing file profile.

Considerations

- If the file design will not use an associated record layout, leave this field blank; if you enter NONE, MANTIS will search for a file named NONE.
- Do not delete the associated record layout while the current file design remains ACTIVE.
- Do not change the associated record layout while it is in use by this file design.

PASSWORD FOR VIEWING

Description *Optional.* Enables viewing of records in this file.

Format 1–16 alphanumeric characters.

Consideration Programs using this password may not alter or delete/insert records.

PASSWORD FOR ALTERING

Description *Optional.* Enables updates to records in this file.

Format 1–16 alphanumeric characters.

Consideration Programs using this password may view and update records, but not delete/insert records.

PASSWORD FOR DELETING/INSERTING

Description *Optional*. Enables deletions and insertions of records in this file.

Format 1–16 alphanumeric characters.

Consideration Programs using this password can view, update, and delete/insert records.

STATUS

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

Format ACTIVE

Consideration Do not enter ACTIVE/0. Anything other than ACTIVE prohibits all access to this file from a program.

DATE OF LAST PROFILE UPDATE
TIME OF LAST PROFILE UPDATE
FIELD COUNT

Description MANTIS maintains these entries and updates them each time you modify the file profile. DATE OF LAST PROFILE UPDATE and TIME OF LAST PROFILE UPDATE show the date and time when the file profile was created. FIELD COUNT is the total number of fields defined in this file profile.

Enter the appropriate data for your file design and press ENTER. MANTIS accepts your design and returns you to the MANTIS File Design Facility menu (see the illustration in "MANTIS file design facility" on page 108).

Unless you specified an associated record layout, you must create a record layout (see "Update record layout" on page 113) before you can save this file profile in the Library Functions.

Update record layout

The Update Record Layout option enables you to create a new record layout or update an existing record layout for a file. Your record layout may contain a maximum of 64 fields. Each page displays 16 fields.

When you select the Update Record Layout option from the MANTIS File Design Facility menu (see the illustration in "MANTIS file design facility" on page 108), the following screen displays (each dash (-) represents a built-in tab that moves your cursor from field to field on this screen):

```
                        MANTIS RECORD LAYOUT DEFINITION           YYYY/MM/DD
NAME:nnnn                                                           HH:MM:SS
PAGE 1                                        ELEMENT COUNT :         SIZE
 ELEMENT  ----------NAME-------------  DATA-TYPE   DIMENSIONS  --ATTRIBUTES--

 __ __   _                           _     _ _    _   _ _ _      _




                     (USE PF1-PF4 PAGE; USE CANCEL TO EXIT)
```

If you are updating an existing file profile, or returning to this option after performing other functions, your current record layout appears.

MANTIS maintains the following entries:

NAME

Description The name of the file being updated.

DATE AND TIME

Description The current date and time.

PAGE

Description MANTIS indicates the page of the record layout currently displayed.

Consideration You can use the relevant PF keys to page through your record layout. Or, you can page through your record layout by specifying the required page number over the current page number at the top of the screen and pressing ENTER.

ELEMENT COUNT

Description MANTIS supplies the total number of elements currently in your record layout.

SIZE

Description MANTIS provides the current record length in bytes. This length is determined by totaling 32 characters for the key field(s), 10 characters for each occurrence of a nonkey big element, 6 characters for each occurrence of a nonkey small element, and the length plus two characters for each occurrence of a nonkey text element.

Enter the record layout as described below:

ELEMENT

Description *Required*. Identifies each element in the file by number. You manipulate element definitions on the screen by entering an action indicator in the first tab position associated with each detail line to be changed.

First Tab Position

Description *Required*. Specifies whether you want to alter, insert, or delete the line.

Options

A Alter this line. Type the new information over the existing fields.

I Insert this line. Type the new information over the existing fields.

D Delete this line.

Second Tab Position

Description *Required*. Specifies which line you want to alter, insert, or delete.

Considerations

- Key field(s) must be the first element(s) in your record layout.
- You can insert one or more elements between two existing elements (e.g., between elements 4 and 5, by inserting (typing I for insert) the new element as line 4 and pressing ENTER. MANTIS renumbers the new element as line 5, the original line 5 as line 6, 6 as 7, etc.). You can insert before element 1 by inserting element 0.
- If you delete an element during an update, MANTIS will renumber all subsequent elements.

NAME

Description *Required*. Identifies each element in the file by name.

Format Standard variable name, 1–16 characters.

DATA-TYPE

Description *Required*. Specifies the data type of each element.

Options T TEXT for all alphanumeric fields (requires you to enter a length under dimensions).

B BIG for a numeric field of 15 significant digits (recommended when using decimals).

S SMALL for a numeric field of 6 significant digits (normally an integer field).

DIMENSIONS

Description *Required*. Identifies the length of a text field, or the number of occurrences of this field in a list.

Options For text fields:

- **First Tab Position**. Specify the length of this field or the number of occurrences of this field in a list.
- **Second Tab Position**. Specify the length of each occurrence of this field in a list.

For numeric fields:

- **First Tab Position**. Specify the number of occurrences in a one-dimensional array or the number of rows in a two-dimensional array.
- **Second Tab Position**. Specify the number of columns in a two-dimensional array.

Consideration Key fields cannot be arrays. The table in "Sample file dimension specifications" on page 118 presents samples of data types and various dimension specifications.

ATTRIBUTES

Description *Optional.* Specifies any special attributes for the element.

Options

K Key

S Scramble

Considerations

- You must specify K (key) on the first element of your record layout. The key length 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 may also specify S (scramble) as an attribute on any nonkey element. SCRAMBLE will scramble the information on the record for storage and unscramble it when read by a program.
- You can assign only one attribute to an element (e.g., an element cannot be both a key element and scrambled).

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

When you supply all data, press ENTER to store the record layout definition. If you press CANCEL or any key other than ENTER, you will lose your changes. After you press ENTER, press CANCEL to return to the MANTIS File Design Facility menu (see the illustration in "MANTIS file design facility" on page 108).

Warning: If you press CANCEL, any actions entered in the left column (A, I, D) will not be executed and you will lose your modifications.

Sample file dimension specifications

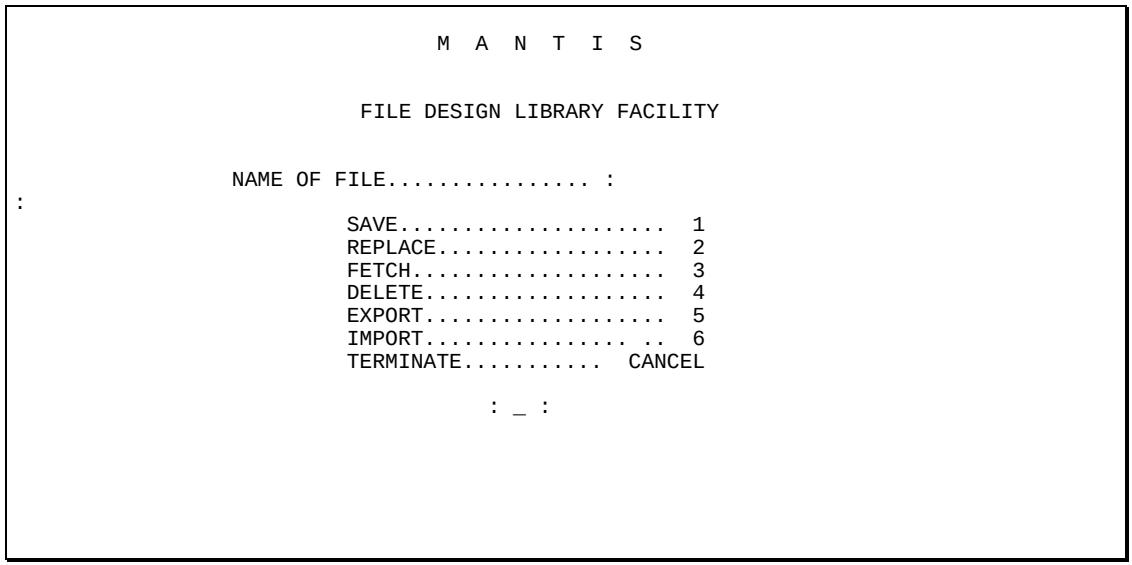
The following table shows some combinations of data types and dimensions you can define in a file layout and what these combinations imply:

Data Type	Dimensions	Result
T	*n*	Describes a single text field of *n* characters in length. You can specify the length at either tab position.
T	*m n*	Describes a text list of *m* entries, each entry having a maximum length of *n*.
S or B		Describes a single numeric field.
S or B	*n*	Describes a numeric table of *n* entries. You can specify the number of entries in the table in either tab position.
S or B	*m n*	Describes a numeric array (or matrix) with *m* rows and *n* columns.

Library functions

The Library Functions option enables you to save new file designs and to retrieve, replace, and delete existing file designs. When you complete the specified option, MANTIS returns to the MANTIS File design Facility menu and displays a confirmation message in the lower left corner of the screen.

When you select the Library Functions option from the MANTIS File Design Facility menu (see the illustration in "MANTIS file design facility" on page 108), the following screen displays:



Enter data as described below:

NAME OF FILE

Description *Required* for SAVE. Identifies this file design.

Format 1- to 16-character alphanumeric symbolic name.

Consideration If the file view has been given a name, it will be displayed in this field. You may change the name before executing any of the Library Functions.

The following actions can be executed from the File Design Library Facility menu by typing the number of the action in the action field and pressing ENTER or by pressing the corresponding PF key:

- **SAVE**. Saves new file profiles and record layouts in your library. This function is used 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 will ask you to confirm the deletion. When you delete the file design, all associated records are also deleted. 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 has been deleted, that file is unusable until a correct file layout is entered.

- **EXPORT**. Exports a file design from your library. You can specify only a single design to be exported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus export more than one design/entity. The default output file is of the form *file_name*.exp. The export function only works on saved designs and does not affect the work area. Unsaved changes to the current working design cannot be exported. If unsaved changes exist, you will be required to confirm the export but the changes to the work area will not be lost.

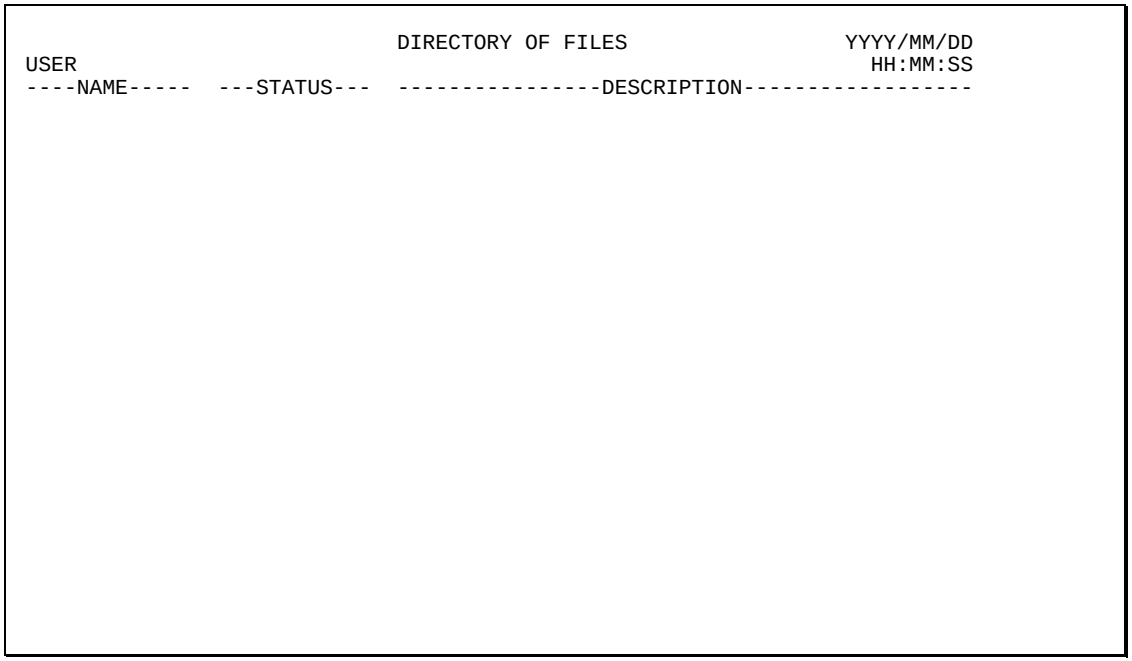
- **IMPORT**. Imports a file design to your library. You can specify only a single design to be imported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus import more than one design/entity. The default input file is of the form *file_name*.exp. When replacing a file, the data for the file being replaced will be lost.

- **TERMINATE**. Press CANCEL to exit from the Library Functions.

After you save, replace, fetch, or delete a file design, MANTIS returns you to the MANTIS File Design Facility menu (see the illustration in "MANTIS file design facility" on page 108) and displays a confirmation message in the lower left corner of your screen.

Directory of file profiles

The Directory of File Profiles displays an alphabetic listing of all existing file profiles. When you select the Directory of File Profiles option from the MANTIS File Design Facility menu (see the illustration in "MANTIS file design facility" on page 108), the following screen displays:



You are supplied with the Name, Status, and Description of your file profiles. After you enter characters, press ENTER, and the directory will list file names beginning with the input characters.

Notice that passwords are not displayed on the directory listing.

Press ENTER to scroll the listing or to return to the MANTIS File Design Facility menu after viewing the list of file designs. To exit at any point before the end of this display, press CANCEL. You will return to he MANTIS File Design Facility menu (see the illustration in "MANTIS file design facility" on page 108).

Print completed design

Use the Print Completed Design option to obtain a hard copy of your current file profile record area layout. At any time during File Design, you can return to the MANTIS File Design Facility menu (see the illustration in “MANTIS file design facility” on page 108) and select this option. MANTIS routes the current file profile record area layout to your designated printer (as defined by your Master User).

External file view design facility

The External File View Design Facility enables you to design and create external file views for native personal computer files, personal computer files that emulate VSAM files, and PC CONTACT files.

PC CONTACT offers the following types of files:

- SEQUENTIAL
- NUMBERED

To access PC CONTACT SEQUENTIAL files, you must move their views to the mainframe by using the Universal Export Facility. You can access PC CONTACT NUMBERED files on the personal computer (directly) or on the mainframe (through PC CONTACT).

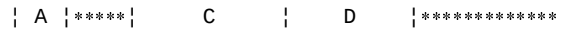
An external file view consists of basic file information and a detailed layout of the records stored in the file. It combines a clear, unambiguous record layout definition with a high degree of data security protection.

A file view enables certain portions of data records to be visible to some users while remaining hidden from other users. Which data can (or cannot) be seen is specified through the Update File View Layout option, where individual record fields are associated with the file view. A separate password is provided for each READ, UPDATE, and DELETE/INSERT capability for accessing data.

To illustrate how to select data viewing through a file view, assume you have a file record containing fields A, B, C, D, and E:

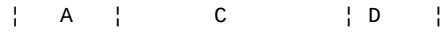
File record

You want to create a file view that enables another user to see fields A, C, and D, but not B and E.



File view

The person using this file view is unaware that fields B and E exist, and sees the file record as:



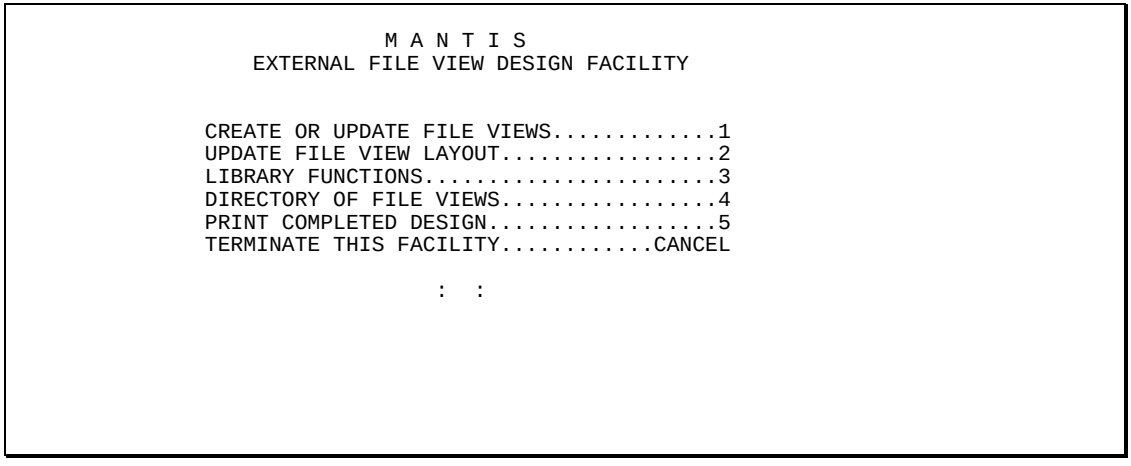
File record through the file view

The ability to lock certain portions of data records from the view of other users is central to the concept of file views. This ability results not only in greater data security, but also in greater data independence. Data not necessary for MANTIS program execution ideally should not be included in that file view. The MANTIS program is then completely insulated from any changes that may occur to nonessential data fields. This, in turn, reduces future maintenance costs.

To ensure data security and integrity, you assign a password for each READ, UPDATE, and INSERT/DELETE operation. For example, if you only need to view the data, not update it, use the assigned READ password. This technique can prevent damage by inadvertent program errors to the data stored in the files.

The External File View Design Facility provides a menu of options to create, maintain, view, and print new external file views which allow you to access, create, and replace an existing DOS file from a MANTIS program.

When you select the Design External File View Facility from the Facility Selection menu, the following screen displays:



To create a new external file view, follow the sequence on the External Field View Design Facility menu (first create the file view, then update the file view layout, etc.). To update an existing external file view, first select Library Functions to fetch the file view from your library.

You may move among the options on this screen without losing the file design currently in your work area. Remember to save your file design or any updates via the Library Functions option before exiting from this facility to the MANTIS Facility Selection menu. If you try to exit from the External File Design Facility without saving current changes, MANTIS asks you to confirm your exit.

To choose a new option for External File View design, you must always return to the menu. The following table provides an overview of the options available in External File View Design and where each option is discussed:

This option	Enables you to. . .	See
Create or Update File Views	Create a new external file view or update the definition of an existing external file view.	"Create or update file views" on page 128.
Update File View Layout	Create a new external file view layout definition or update existing external file view layout definitions.	"Update file view layout" on page 137.
Library Functions	Save, replace, fetch, or delete an external file view.	"Library functions" on page 149.
Directory of File Views	View a list of external file views in your library.	"Directory of file views" on page 152.
Print Completed Design	Print an external file view (as defined by your Master User).	"Print completed design" on page 153.

Create or update file views

The Create or Update File Views option enables you to create a new external file view or update the definition of an existing external view. When you select this option from the External File View Design Facility menu (see the illustration in "External file view design facility" on page 124), the following screen displays:

```
                    FILE VIEW DESIGN


     NAME AND DESCRIPTION OF ACCESS..................... :          :
     :                                                              :
     EXTERNAL NAME.............................................     :
     :
     PASSWORD FOR VIEWING.....................   :
     PASSWORD FOR ALTERING....................   :
     PASSOWRD FOR DELETING/INSERTING..........   :

     STATUS...................................   :
     ACCESS METHOD (DOS, VSAM, OR PC).........   : DOS :
     INDEXED, SEQUENTIAL, NUMBERED OR ASCII....  :       :
     MAXIMUM RECORD SIZE.......................  :     :
     FIXED OR VARIABLE LENGTH..................  :       :
     REFERENCE VARIABLE NAME...................  :                  :
     OCCURRENCE CONTROLLING ELEMENT............  :                  :
     FIRST OCCURRING ELEMENT...................  :                  :
     DELAYED FILE OPEN............: Y :   DELAYED FILE CREATE... : N :

     KEY OF REFERENCE (INDEXED FILE ONLY)......   :   :
     LAST PROFILE UPDATE DATE AND TIME.........   :                  :
```

If you are updating an existing file view, or returning to this option after performing other options, the view currently in your work area is displayed.

To create a new file view, enter the data described below:

NAME AND DESCRIPTION OF ACCESS

Description *Name is required; description is optional.* Identifies your external file design.

Format 1- to 16-character alphanumeric symbolic name; 1- to 58-character alphanumeric description (may contain blank and special characters).

Consideration The description will be used in the Directory of File Views.

EXTERNAL NAME

Description *Required*. Provides a name by which this file is (or will be) known to the operating system.

Considerations

- It must be a DOS file specification, which can be a basic file name (1–8 characters) or a full path name (drive, directory, name, and extension).
- If this file view is to be migrated to the mainframe, select a name that is compatible with mainframe naming conventions.
- If no extension is specified for indexed files, an extensions of .CLU is assumed.

PASSWORD FOR VIEWING

Description *Optional*. Enables viewing of records accessible through this file view.

Format 1–16 alphanumeric characters.

Consideration Programs using this password will not be able to update, delete, or insert records.

PASSWORD FOR ALTERING

Description *Optional*. Enables updates of records accessible through this file view.

Format 1–16 alphanumeric characters.

Consideration Programs using this password will not be able to delete or insert records, but may view and update them.

PASSWORD FOR DELETING/INSERTING

Description *Optional*. Enables deletions and insertions of records accessible through this file view.

Format 1–16 alphanumeric characters.

Consideration Programs using this password may view, update, delete, and insert records.

STATUS

Description *Optional.* Identifies the status of the file view.

Format ACTIVE

Consideration Do not enter ACTIVE␣. Anything other than ACTIVE prohibits all access to this file view from a program.

ACCESS METHOD (DOS, VSAM, OR PC)

Description *Required.* Indicates access method.

Default DOS

Options DOS Personal computer DOS file.

VSAM DOS file that emulates a mainframe VSAM file.

PC PC CONTACT file.

INDEXED, SEQUENTIAL, NUMBERED, OR ASCII

Description *Required.* Indicates the file type.

Options For DOS files:

Only the first character of the file type is required for selection.

INDEXED (for an external file accessed with keys)

SEQUENTIAL (for an external file accessed sequentially)

NUMBERED (for an external file accessed randomly)

ASCII (for an external file containing only text data)

For VSAM files:

INDEXED (for a file that simulates a KSDS data set)

SEQUENTIAL (for a file that simulates an ESDS data set)

NUMBERED (for a file that simulates an RRDS data set)

For PC CONTACT files:

SEQUENTIAL (for sequential DIF, BASIC, or TEXT files)

NUMBERED (for DIRECT files)

Considerations

- PC CONTACT SEQUENTIAL file views are for design only. You must move them to the mainframe (using the Universal Export Facility) to access them.
- To save duplication of effort, you can use a PC CONTACT NUMBERED file view to access a DOS file, as well.

MAXIMUM RECORD SIZE

Description *Required.* Provides the length of the records in this file.

Format 1–18000

Considerations

- It is important to specify the correct value because this parameter is used to check the accuracy of the subsequent file view layout definition.
- For fixed-length records, enter the actual record length defined for the file.
- For variable-length records, enter the maximum record length to be stored in this file.
- Does not apply to PC CONTACT SEQUENTIAL files.

FIXED OR VARIABLE LENGTH

Description *Required*. Enter the types of records in the file.

Options For DOS files:

Only the first character of the file type is required for selection.

INDEXED (fixed or variable)

SEQUENTIAL (always fixed)

NUMBERED (always fixed)

ASCII (always variable)

For VSAM files:

INDEXED (fixed or variable)

SEQUENTIAL (fixed or variable)

NUMBERED (fixed)

For PC CONTACT files:

SEQUENTIAL (variable)

NUMBERED (fixed)

REFERENCE VARIABLE NAME

Description *Required*. Provide a record identification for NUMBERED files since there is no key defined for these files (as is the case for indexed files). MANTIS also requires a record identification for SEQUENTIAL files if you plan to update or randomly access records to these files.

Considerations

- The Reference Variable is a standard BIG numeric field. It is allocated by MANTIS (with all the other variables defined in the file view layout) during the processing of the ACCESS statement (refer to the *MANTIS for Windows Language Reference Manual*, P19-2302). This variable has the same multiple buffer allocation and prefixing requirements as all other variables defined in this file view.

- The Reference Variable contains the Relative Record Number (RRN) for NUMBERED files. It contains the Relative Byte Address (RBA) for SEQUENTIAL and ASCII files. You should go directly to the descriptions of the GET, UPDATE, INSERT, and DELETE statements (refer to the *MANTIS for Windows Language Reference Manual*, P19-2302) for a further explanation of Reference Variable usage during MANTIS program execution.

OCCURRENCE CONTROLLING ELEMENT

Description *Optional*. Specifies only for variable-length records. Indicates the name of an array-controlling element defined in the file view layout which determines the record length.

FIRST OCCURRING ELEMENT

Description *Optional*. Indicates the first element that is part of a repeating data structure or the array name (if not part of a data structure) used by MANTIS to determine the record length.

Consideration Use this field only if you use the Occurrence Controlling Element.

DELAYED FILE OPEN

Description *Required*. Indicates whether the file should be opened immediately on execution of the ACCESS statement, or should be delayed until the first I/O statement (GET, UPDATE, INSERT, or DELETE). Set to N (no) to open immediately, or Y (yes) to delay the open.

Default Y

Considerations

- If it is possible that the file may not actually be used within the program, delaying the file open can prevent allocating unneeded resources.
- Mainframe MANTIS always delays the file open until the first I/O statement.
- Delaying the file open enables you to issue a TRAP ON statement and trap any open errors.

DELAYED FILE CREATE

Description *Required*. Indicates whether the file should be created immediately on execution of the ACCESS statement with NEW or REPLACE, or should be delayed until the first I/O statement (GET, UPDATE, INSERT, or DELETE). Set to N (no) to create this file immediately, or Y (yes) to delay the file creation.

Default N

Considerations

- If it is possible that the file may not actually be used within the program, delaying the file creation can prevent allocating unneeded resources.
- If you are using more than one view of the file, you should specify immediate creation.
- Delaying the file create enables you to issue a TRAP ON statement and trap any file creation errors.

KEY OF REFERENCE

Description *Optional*. A number in the range of 0–15 indicating which KEY OF REFERENCE this view defines.

Default 0 Primary key.

Consideration Except for the KEY OF REFERENCE value, view name, and which elements are defined with attribute KEY, the view defining an alternate key should be identical to the view defining the primary key.

LAST PROFILE UPDATE DATE AND TIME

Description Provides the date and time of updates to this file view. MANTIS maintains this field.

Press ENTER to store your entries. MANTIS will return to the External File View Design Facility menu (see the illustration in "External file view design facility" on page 124).

Update file view layout

The Update File View Layout option enables you to create a new External File View Layout Definition or update existing External File View Layout Definitions. When you select this option from the External File View Design Facility menu, the following screen displays (each dash (-) represents a built-in tab for this function):

```
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    POSN   FORMAT  LENGTH   SIGN    DEC   DIM  OFFSET ATTRIBUTE
-- -                    -       -       -        -       -     -    -      -




                                (USE PF1-PF10 TO PAGE; USE CANCEL TO EXIT)
```

If you are updating an existing file view or returning to this option after performing other options in External File Design, the file view currently in your work area will appear on the screen.

You can begin entering the individual data fields to be included in this file view.

We recommend that you first define all data fields in the record and then store the complete view in your library. Later, for each subset of the complete view, you can fetch the originally-designed file view and delete any field not required for the current file view. By doing so, you can ensure accuracy for each defined field as well as consistency throughout the whole installation.

MANTIS maintains the following entries:

PAGE

Description *Optional*. Supplies the page of the file view layout currently being displayed. Use the relevant PF key (1–10) to page through your file view layout.

Consideration You can also specify the required page number at the top of the screen and press ENTER.

NAME

Description Supplies the name of the file view currently in your work area.

ELEMENT COUNT

Description Supplies the total number of elements currently in your external file view layout.

Consideration The maximum number of elements is 254.

TYPE

Description Supplies the type as BIG, SMALL, or TEXT, depending on the format you specify. MANTIS maintains this field.

You must complete the following entries:

First Tab Position

Description *Required*. Specifies whether you want to alter, insert, or delete the line.

Options A Alter this line with the new information keyed over the existing fields. Type the new information over the existing fields.

I Insert this line. Type the new information over the existing fields.

D Delete this line.

NAME

Description *Required*. Identifies the element to be altered, inserted, or deleted.

Format Standard MANTIS variable name, 1–16 characters in length.

POSN

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

Format 1–5 numeric characters, relative to 1.

Considerations

- MANTIS will complete this field for you if you do not enter a value.
- This field has no meaning for PC CONTACT sequential files.

FORMAT

Description *Required.* Indicates the format in which the data is stored on the external file. Only the first character is required.

Options For DOS files (except ASCII):

B Binary (one, two, or four bytes)

F Floating point (four or eight bytes)

K Kanji

T Text character string

Z Unpacked (zoned) decimal

For DOS ASCII files:

T Text character string

Z Unpacked (zoned) decimal

For VSAM files:

B Binary (two or four bytes)

F Floating point (four or eight bytes)

K Kanji

P Packed decimal

T Text character string

Z Unpacked (zoned) decimal

For PC CONTACT NUMBERED files:

B Binary (one or two bytes)

F Floating point (four or eight bytes)

K Kanji

T Text character string

Z Unpacked (zoned) decimal

For PC CONTACT SEQUENTIAL files:

K Kanji

T Text character string

Z Unpacked (zoned) decimal

LENGTH

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

Format 1–3 numeric characters (field length in bytes).

Consideration Specifies the number of bytes in the field to be in the range 1–254.

SIGN

Description *Optional.* For BINARY, ZONED, and PACKED, enter Y (yes) to indicate that the field is signed.

Default No Unsigned.

Considerations

- Floating-point fields are always considered signed.
- For KANJI and TEXT fields, the value of sign is ignored.
- If the value of sign for BINARY, ZONED, and PACKED is N (no), it is not displayed on this layout definition.

DEC

Description *Optional.* Specifies the number of decimal places for PACKED, ZONED, and, BINARY numeric fields. The maximum number of decimal places is 10.

Default 0

Consideration 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). During execution of the ACCESS statement, MANTIS allocates the variables specified in this file view as single occurrence fields if the DIM value is 1, 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.

Options 1–255

Consideration If the ACCESS statement indicates multiple levels, an additional level of dimension is generated.

OFFSET

Description *Optional*. Provide this interval if a field is part of a data structure that is also part of an array. Each occurrence of such a field in the block of data is at an interval (offset) equal to the length of the data structure.

Default The length of the field.

Considerations

- This field should only be entered for variables that are also part of arrays (DIM value greater than 1).
- The value specified here cannot be smaller than the LENGTH field. (See "Data structure and array definitions" on page 143 for further explanation of offset.)

ATTRIBUTE

Description *Optional*. Required for indexed files only, you can nominate the key in the record by entering KEY in this field. Do not enter KEY for sequential and numbered files.

You can also specify SCRAMBLE, which causes the information to be scrambled for storage and unscrambled when read by a program. If a field needs to be accessed later by a user (non-MANTIS) program, it should not be scrambled. Key fields cannot be scrambled.

For float fields in DOS numbered or sequential files, you can specify MBF to indicate the field is Microsoft Binary Format. The default is IEEE float format.

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

When you enter your information or complete your changes, press ENTER to store the File View Layout Definition. To return to the External File View Design Facility menu (see the illustration in "External file view design facility" on page 124), press CANCEL.

Warning: If you press CANCEL, any actions entered in the left column (A, I, D) will not be executed, and you will lose those modifications.

Data structure and array definitions

You may want to express a data structure, an array, or a combination of both through the file view layout. For example, assume that you have the following COBOL record definition of company invoices:

```
01  INVOICES.
      03  CUSTOMER                PIC 9(6).
      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 using the File View Layout Definition, you would enter the data as shown in the following screen illustration. Lowercase letters represent data you enter; uppercase letters represent the data filled in by MANTIS. You also enter numeric data for the POSITION, LENGTH, and DEC fields.

```
  PAGE 1     :          FILE VIEW LAYOUT DEFINITION             YYYY/MM/DD
  NAME: INVOICES                    ELEMENT COUNT 5              HH:MM:SS
  ---M A N T I S-------- ---------E X T E R N A L  F I L E-----------------
  NAME            TYPE  POSN  FORMAT LENGTH SIGN DEC DIM OFFSET ATTRIBUTE

i customer                  BIG   1     ZONED    6                    KEY
i billing_amount            BIG   7     PACKED   4
i item                      TEXT  11    TEXT     6
i quantity                  SMALL 17    BINARY   2  YES
i price                     BIG   19    PACKED   4       2


                          (USE PF1-PF10 TO PAGE; USE CANCEL TO EXIT)
```

Note that in the COBOL definition two variables, INVOICES and INVOICE-LINES, are not specified in the file view layout because they represent data structures and not individual fields.

Also note that the hyphen (-) in the COBOL variable BILLING-AMOUNT becomes an underscore (_) in the MANTIS definition BILLING_AMOUNT. MANTIS variables can only be composed of letters, digits, and an underscore. They may not contain any other special characters. (Refer to the *MANTIS for Windows Language Reference Manual*, P19-2302, for more information on naming variables.)

We can now expand the INVOICES record by adding a delivery address field and allowing more than one item to appear on the invoice:

```
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                     OCCURS 20 TIMES.
           05  ITEM           PIC X(6).
           05  QUANTITY       PIC S999      COMP.
           05  PRICE          PIC S9(5)V99  COMP-3.
```

The changed INVOICES record using the file view layout looks like the following example:

```
PAGE 1     :           FILE VIEW LAYOUT DEFINITION              YYYY/MM/DD
NAME: INVOICES                        ELEMENT COUNT 6            HH:MM:SS
---M A N T I S-------- ---------E X T E R N A L  F I L E------------------
NAME             TYPE  POSN  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
ITEM             TEXT  101   TEXT    6              20   12
QUANTITY         SMALL 107   BINARY  2     YES      20   12
PRICE            BIG   109   PACKED  4           2  20   12
```

(USE PF1-PF10 TO PAGE; USE CANCEL TO EXIT)

Variable-length record definitions

The INVOICE record in "Data structure and array definitions" on page 143 is 340 bytes long. Assuming that 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 eliminate this waste, many users prefer using the variable-length type records. In this case, each record needs to be long enough to contain only the meaningful invoice information.

This change is achieved by creating another field, NUMBER-OF-ITEMS, which determines 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.
```

This is also easy to represent in the File View Layout Definition.

```
PAGE 1     :           FILE VIEW LAYOUT DEFINITION              YYYY/MM/DD
NAME: INVOICES                        ELEMENT COUNT 7            HH:MM:SS
---M A N T I S-------- ---------E X T E R N A L  F I L E-----------------
NAME             TYPE  POSN  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
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          2   20   12
```

(USE PF1-PF10 TO PAGE; USE CANCEL TO EXIT)

You now have an additional field defined, NUMBER_OF_ITEMS. This is the Occurrence Controlling Element also mentioned in “Create or update file views” on page 128. ITEM is the First Occurring Element.

Before writing the record to the external file, MANTIS is now directed to check the contents of the NUMBER-OF-ITEMS variable before outputting ITEM, QUANTITY, and PRICE. The length of the record is adjusted 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 which 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 plus 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, provided that you define a separate external file view for each record type.

Library functions

The Library Functions option enables you to save new file view designs and retrieve, replace, and delete existing ones. When you select this option from the External File View Design Facility menu, the following screen displays:

```
                        M  A  N  T  I  S

              EXTERNAL FILE VIEW LIBRARY FACILITY


      NAME OF FILE VIEW.................:                 :

                SAVE.....................  1
                REPLACE..................  2
                FETCH....................  3
                DELETE...................  4
                EXPORT...................  5
                IMPORT...................  6
                TERMINATE............  CANCEL

                           :_:
```

MANTIS provides the name of the file view currently in your work area. If you want to alter this field, enter data as described below:

NAME OF THE FILE VIEW

Description *Required*. Provide the name of this file view.

Format 1- to 16-character alphanumeric symbolic name.

Consideration If the file view has been given a name, it will be displayed in this field. You may change the name before executing any of the Library Functions.

The following actions can be executed from the External File View Library Facility menu by typing the number of the action in the action field and pressing ENTER or by pressing the corresponding PF key:

- **SAVE**. Saves the new file view in your current work area into your library. Use this function only when the file view does not already exist in your library.
- **REPLACE**. Replaces a specific file view in your library with the updated version currently in your work area.
- **FETCH**. Retrieves a file view from your library and places it in your work area.
- **DELETE**. Deletes a file view from your library. The current view will remain in your work area until you fetch another file view or you exit from the External Field View Design Facility. To rename the file just deleted, select the SAVE option and provide a new name.

- **EXPORT**. Exports an external file design from your library. You can specify only a single design to be exported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus export more than one design/entity. The default output file is of the form *external_view name*.exp. The export function only works on saved designs and does not affect the work area. Unsaved changes to the current working design cannot be exported. If unsaved changes exist, you will be required to confirm the export but the changes to the work area will not be lost.

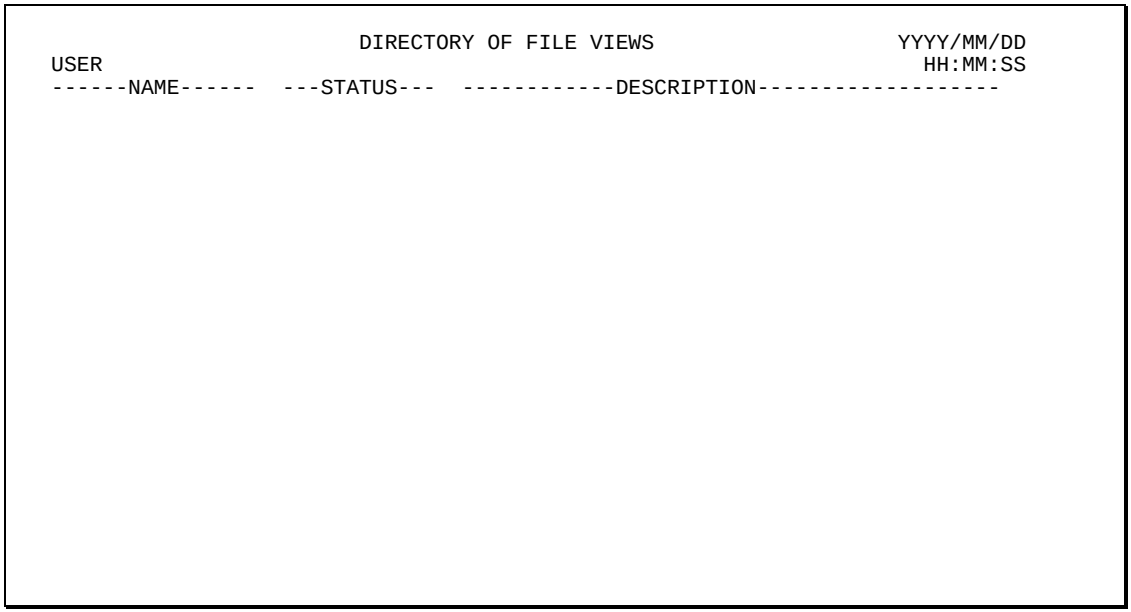
- **IMPORT**. Imports an external file design to your library. You can specify only a single design to be imported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus import more than one design/entity. The default input file is of the form *external_view name*.exp.

- **TERMINATE**. Press CANCEL to exit from this option and return to the External File View Design Facility menu.

When you complete the specified option in Library Functions, MANTIS exits to the External File View Design Facility menu (see the illustration in "External file view design facility" on page 124) and displays a confirmation message in the lower left corner of the screen.

Directory of file views

The Directory of File Views option enables you to view an alphabetic listing of existing file views. When you select this option from the External File View Design Facility menu (see the illustration in "External file view design facility" on page 124), the following screen displays:



Entering characters on the bottom line and pressing ENTER causes the directory to list file view names beginning with the input characters.

Notice that passwords are not displayed on the directory listing.

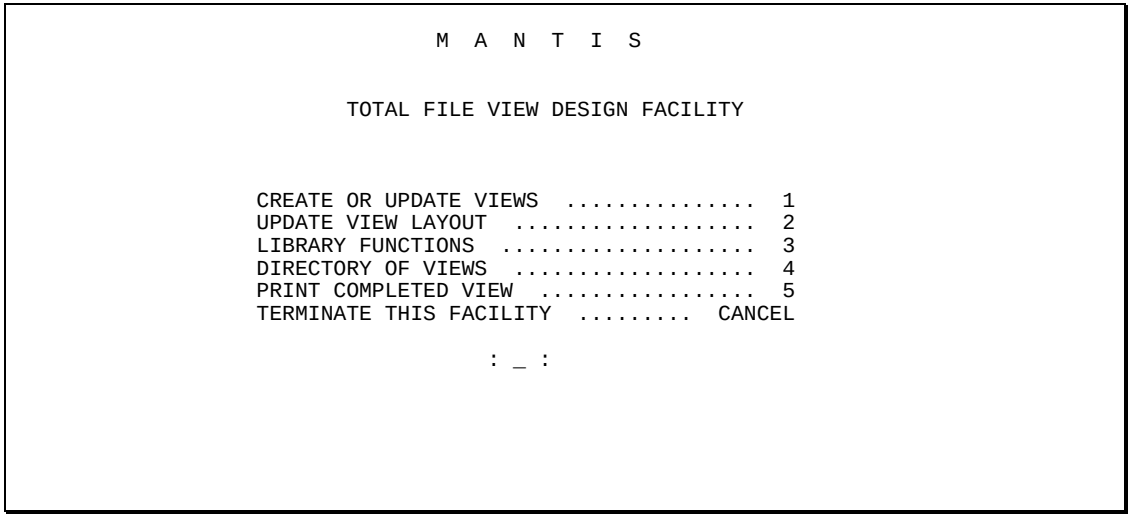
Press ENTER to scroll the listing or to return to the External File View Design Facility menu after viewing your list of file views. To exit at any point before the end of this display, press CANCEL. You will return to the External File View Design Facility menu (see the illustration in "External file view design facility" on page 124).

Print completed design

The Print Completed Design option enables you to obtain a hard copy of the file view currently in your work area. This option causes the current file view and file view layout to be routed to your designated printer (as defined by your Master User). You may return to the External File View Design Facility menu (see the illustration in “External file view design facility” on page 124) at any time during file view design phase and select the Print Completed Design option.

TOTAL file view design facility

The TOTAL File View Design Facility provides a menu of options to create, maintain, and view TOTAL views. To access TOTAL views, you must migrate them to the mainframe by using the Universal Export Facility. When you select the Design TOTAL File View option from the MANTIS Facility Selection menu (see the illustration in "Signing on to MANTIS" on page 41), the following menu displays:



To create a new TOTAL file view, follow the sequence on the TOTAL File View Design Facility menu (first create the file view, then update the view layout, etc.). To update an existing TOTAL file view design, first select Library Functions to fetch the file view from your library.

You may move among the options listed on this screen without losing the file design currently in your work area. Remember to save your file design or any updates via the Library Functions option before exiting from this facility to the MANTIS Facility Selection menu. If you try to exit from the Total File View Design Facility without saving current changes, MANTIS asks you to confirm your exit.

To choose a new option for TOTAL File View Design, you must return to this menu. The following table provides an overview of the options available in TOTAL File View Design and where each option is discussed:

This option	Enables you to. . .	See
Create or Update Views	Create a new TOTAL file view and update the definition of an existing TOTAL file view.	"Create or update views" on page 156.
Update View Layout	Create a new TOTAL View Layout definition and update existing TOTAL View Layout definitions.	"Update view layout" on page 160.
Library Functions	Save, replace, fetch, and delete TOTAL file views.	"Library functions" on page 166.
Directory of Views	View a list of TOTAL file views in your library.	"Directory of views" on page 169.
Print Completed View	Print a TOTAL file view (as defined by your Master User).	"Print completed view" on page 170.

Create or update views

The Create or Update Views Facility enables you to create a new TOTAL file view and update existing TOTAL views. When you select this option from the TOTAL File View Design menu (see the illustration in “Signing on to MANTIS” on page 41), the following screen displays:

```
                        M  A  N  T  I  S


                  TOTAL FILE VIEW DESIGN FACILITY


NAME AND DESCRIPTION OF VIEW..... :                  :
:
TOTAL FILE NAME..................... :      :
PASSWORD FOR VIEWING................ :                  :
PASSWORD FOR ALTERING............... :                  :
PASSWORD FOR DELETING/INSERTING..... :                  :
STATUS.............................. :                  :
LINKAGE PATH FOR ACCESS (VE FILES ONLY)   :          :
REFERENCE VARIABLE NAME        “          :                  :
RECORD CODE                    “          :    :
LAST ALTERATION DATE................ :          :
LAST ALTERATION TIME................ :          :
```

If you are updating an existing TOTAL view, or returning to this function after performing other functions, the view currently in your work area is displayed.

To create a new TOTAL view, enter the data described below:

NAME AND DESCRIPTION OF VIEW

Description *Required*. Supplies a symbolic name and a description for your TOTAL file view.

Format 1- to 16-character alphanumeric symbolic name; 1- to 58-character alphanumeric description (may contain blank and special characters).

Consideration The description will be displayed in your Directory of TOTAL Views (see the illustration in "Directory of views" on page 169).

TOTAL FILE NAME

Description *Required*. Supplies the name of the TOTAL file to which this view applies.

Format 4-character name.

Consideration This name must exist in your TOTAL database descriptor module (DBMOD) before this view can be migrated to the mainframe.

PASSWORD FOR VIEWING

Description *Optional*. Provides a password to enable viewing of records in this file.

Format 1–16 alphanumeric characters.

Consideration Programs using this password will not be able to update, delete, or insert records.

PASSWORD FOR ALTERING

Description *Optional*. Provides a password to enable updates to records in this file.

Format 1–16 alphanumeric characters.

Consideration Programs using this password will not be able to delete or insert records, but may view and update them.

PASSWORD FOR DELETING/INSERTING

Description *Optional*. Provides a password to enable deletions and insertions of records in this file.

Format 1–16 alphanumeric characters.

Consideration Programs using this password may view, update, delete, and insert records.

STATUS

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

Format ACTIVE

Consideration Do not enter ACTIVE followed by a space. Anything other than ACTIVE prohibits all access to this file from a program.

LINKAGE PATH FOR ACCESS (FOR VE FILES ONLY)

Description *Optional*. Specifies which linkage path MANTIS will use to retrieve, update, delete, and insert records in your variable entry file.

Consideration You can access one linkage path access in your view of a TOTAL variable entry file. When defining your TOTAL view layout (see "Update view layout" on page 160), you must enter the TOTAL key element name(s) associated with this linkage path.

REFERENCE VARIABLE NAME (VE FILES ONLY)

Description *Optional*. Specifies the variable name that MANTIS will create when the TOTAL view is processed (via the TOTAL statement). The variable created is text and has a length of four. It will be processed by the TOTAL statement like any other data variable defined in the same view (it may be PREFIXed and have multiple levels).

RECORD CODE (VE FILES ONLY)

Description *Optional*. For use only with TOTAL variable-entry files with coded records. Specifies the record code you want associated with this TOTAL view. During retrieval, MANTIS selects TOTAL records which match the specified record code and disregards all others. If this field is not specified, MANTIS retrieves all records, regardless of the record code, associated with the specified linkage path.

Consideration During update or insertion, MANTIS enforces the specified record code; therefore, you need not concern yourself with record codes in your program.

LAST ALTERATION DATE AND TIME

Description Provides the data and time of updates to this TOTAL view. MANTIS maintains this field.

Press ENTER to store your entries. MANTIS will automatically return to the TOTAL File View Design menu (see the illustration in "TOTAL file view design facility" on page 154).

Update view layout

The Update View Layout option enables you to create a new TOTAL View Layout definition and update existing definitions. When you select this option from the TOTAL File View Design menu (see the illustration in "TOTAL file view design facility" on page 154), the following screen displays (each dash (-) represents a built-in tab for this function):

```
PAGE 1              TOTAL FILE VIEW LAYOUT DEFINITION            YYYY/MM/DD
 NAME: INVENTORY VIEW            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 are updating an existing view or returning to this function after performing other functions, the TOTAL file view currently in your work area will appear on the screen.

MANTIS maintains the following entries:

PAGE *n*

Description Supplies the page of the view layout currently being displayed. Use the relevant PF (1–12) to page through your TOTAL file view.

Consideration You can also scroll by typing the required page number over the current page number and pressing ENTER.

ELEMENT COUNT *m*

Description Supplies the total number of elements currently in your TOTAL file view layout.

Consideration The maximum number of elements allowed is 192.

NAME: *nnnn*

Description Supplies the name of the TOTAL file view currently in your work area.

You must complete the following entries:

TYPE

Description MANTIS maintains the type as BIG, SMALL, or TEXT, depending on the format you specify.

ACT

Description *Required*. Specifies the action to be taken on the line.

Options

A Alter this line with the new information keyed over the existing fields.

I Insert this line. Type the new information over the existing fields.

D Delete this line.

NAME

Description *Required*. Specifies a MANTIS variable name for the TOTAL element.

Format Standard MANTIS variable name, 1–16 characters in length.

ELEMENT

Description *Required*. Specifies the name of the TOTAL element.

Format Standard PDM element, 8 characters in length.

FORMAT

Description *Required*. Indicates the format in which the data is stored in TOTAL. Only the first character is required.

Options

P Packed decimal

Z Unpacked (zoned) decimal

B Halfword or fullword binary

F Floating point

T Text character string

K Kanji

SIGN

Description *Optional*. For BINARY, ZONED, or PACKED, enter Y (yes). Indicates that the field is signed.

Default N Unsigned.

Considerations

- Float fields are always considered signed.
- For TEXT and KANJI fields, the value of sign is ignored.
- If the value of sign for PACKED, BINARY, and ZONED fields is N (no), it is not displayed on this layout definition.

DEC

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

Default 0

Option Maximum number of decimal places is 10.

Consideration The number of decimal places cannot exceed the number of digits in the field.

LENGTH

Description *Optional*. Specifies the length of the data field.

Default 4

Option 1–254

Consideration When this TOTAL view is migrated to the mainframe, the length will be recalculated from the length of the data field as found in the TOTAL database description.

DIMENSION

Description *Optional*. Defines the dimension of a simple array for MANTIS and external variables.

Format 1–3 numeric characters.

Option 1–254

Considerations

- If the TOTAL statement indicates multiple levels, an additional level of dimension is generated.
- The result of Dimensions multiplied by length must be between 1 and 254.

ATTRIBUTE

Description *Optional.* Specifies K (KEY) in the field if the associated element is a key or part of a key.

Considerations

- The key can be a key element in 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.
- You may also specify SCRAMBLE, which causes the information to be scrambled for storage and unscrambled 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.

When entering data, remember that each name in this view must correspond to one entire TOTAL element (you cannot subdefine TOTAL elements in a TOTAL view). When you enter your information or complete your changes, press ENTER to store the TOTAL view layout definition. To return to the TOTAL File View Design menu (see the illustration in "TOTAL file view design facility" on page 154), press CANCEL.

Warning: If you press CANCEL, any actions entered in the left column (A, I, D) will not be executed, and you will lose your modifications.

Library functions

The Library Functions option enables you to save new TOTAL file views and to retrieve, replace, and delete existing views. When you select this option from the TOTAL File View Design menu (see the illustration in “TOTAL file view design facility” on page 154), the following screen displays:

```
                              M  A  N  T  I  S

                     TOTAL FILE VIEW DESIGN LIBRARY FACILITY

               NAME OF VIEW.................  :                    :
:

                        SAVE.....................  1
                        REPLACE..................  2
                        FETCH....................  3
                        DELETE...................  4
                        EXPORT...................  5
                        IMPORT...................  6
                        EXIT.................  CANCEL

                                    :  :
```

MANTIS provides the name of the TOTAL file view currently in your work area. If you want to alter this field, enter data as described below:

NAME OF VIEW

Description *Required.* Supplies a name for this TOTAL file view.

Format 1- to 16-character alphanumeric symbolic name.

The following actions can be executed from the Total File View Design Library Facility menu by typing the number of the action in the action field and pressing ENTER or by pressing the corresponding PF key:

- **SAVE**. Saves the new TOTAL file view in your current work area into your library. Use this function only when the TOTAL file view does not already exist in your library.
- **REPLACE**. Replaces a TOTAL file view in your library with the updated version currently in your work area.
- **FETCH**. Retrieves an TOTAL file view from your library and places it in your work area. You must provide the name of the view.
- **DELETE**. Deletes a TOTAL file view from your library. The current view remains in your work area until you fetch another TOTAL file view, or until you exit from the TOTAL File View Design Facility. To rename the TOTAL view just deleted, select the SAVE option, and provide a new name.

- **EXPORT**. Exports a TOTAL file view from your library. You can specify only a single design to be exported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus export more than one design/entity. The default output file is of the form *total_view name*.exp. The export function only works on saved designs and does not affect the work area. Unsaved changes to the current working design cannot be exported. If unsaved changes exist, you will be required to confirm the export but the changes to the work area will not be lost.

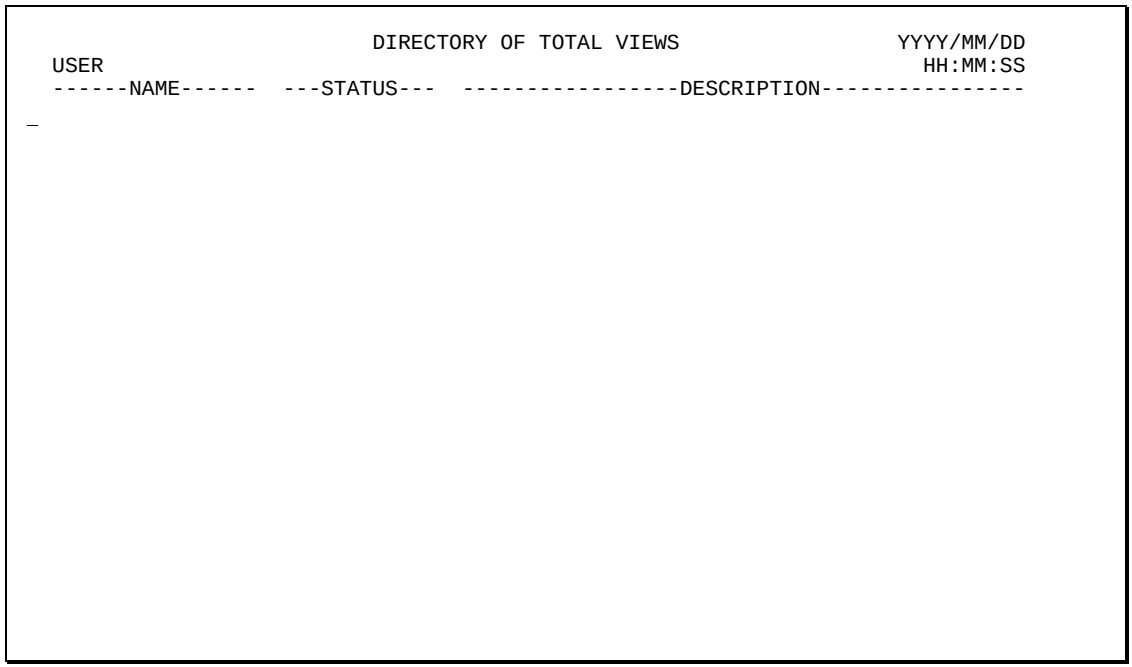
- **IMPORT**. Imports a TOTAL file view to your library. You can specify only a single design to be imported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus import more than one design/entity. The default input file is of the form *total_view name*.exp.

- **TERMINATE**. Press CANCEL to exit from this option and return to the TOTAL File View Design Facility menu.

When you complete the specified option in Library Functions, MANTIS exits to the TOTAL File View Design menu (see the illustration in "TOTAL file view design facility" on page 154) and displays a confirmation message in the lower left corner of the screen.

Directory of views

The Directory of Views option enables you to view an alphabetic listing of all existing TOTAL file views. When you select this option from the TOTAL File View Design menu (see the illustration in "TOTAL file view design facility" on page 154), the following screen displays:



Entering characters on the bottom line and pressing ENTER causes the directory to begin listing with the TOTAL file view name which begins with, or is alphabetically after, the input characters.

Notice that passwords are not displayed on the directory listing. Press ENTER to continue viewing or to return to the TOTAL File View Design menu (see the illustration in "TOTAL file view design facility" on page 154) after viewing your list of TOTAL view designs. To exit at any point before the end of this display, press CANCEL.

Print completed view

The Print Completed View option allows you to obtain a hard copy of the TOTAL file view currently in your work area. You may return to the TOTAL File View Design menu (see the illustration in “TOTAL file view design facility” on page 154) at any time during the TOTAL file view design phase and select the Print Completed View option. This causes the current TOTAL file view design to be routed to your designated printer (as defined by your Master User).

4

Prompter design

The Prompter Design Facility enables you to create and save new prompters and to update and maintain existing prompters. A prompter is help information that you can display in an application. You can also use a personal computer text editor to create and maintain prompters (see “Create or update a prompter” on page 174).

Prompter design facility menu

When you select the Design a Prompter option from the MANTIS Facility Selection menu, the following menu displays:

```
                    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

                    :_:
```

A prompter can be a maximum of 80 lines of text. The current prompter length is in the upper-right corner of the screen (LINES = *n*). Each screen displays 20 lines of the prompter; therefore, you can manipulate up to four pages of text. Use the relevant PF keys (1–4) to page through the prompter. You can also page by keying in the desired page number at the PAGE = *n* position at the top of the screen and pressing ENTER.

You can use prompters to do the following:

- Document operational procedures about a program, file, or screen design.
- Explain certain aspects of company policy or procedures.

To create a new prompter, follow the sequence on the Prompter Design Facility menu (first create the prompter, then set tab characteristics, etc.). To update an existing prompter, first select Library Functions ("Library functions" on page 179), and fetch the prompter from your library.

You may move among the options listed on this screen without losing the prompter currently in your work area. Remember to save your prompter or any updates via the Library Functions option before exiting from this facility to the MANTIS Facility Selection menu (see the illustration in "Signing on to MANTIS" on page 41). If you try to exit from the Prompter Design Facility without saving current changes, MANTIS asks you to confirm your exit.

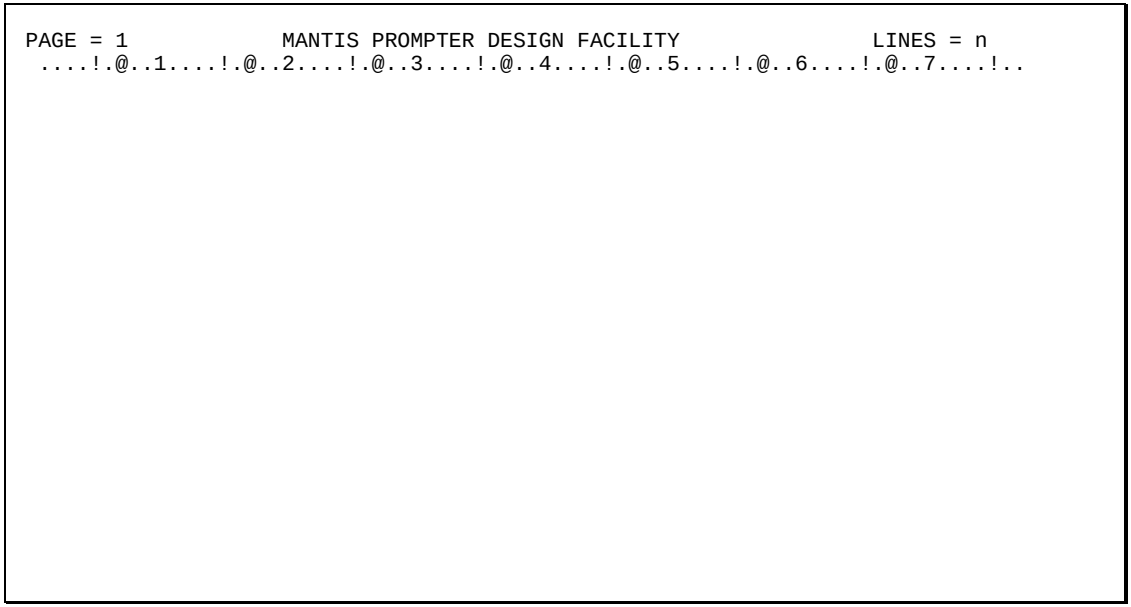
The remainder of this chapter discusses Prompter Design. If you are creating a new prompter, proceed sequentially through this chapter. If you are updating a prompter, go directly to the section(s) you need. The following table provides an overview of the options available in Prompter design and where the option is discussed:

This option	Enables you to. . .	See
Create or Update a Prompter	Create a new prompter or update an existing prompter.	"Create or update a prompter" on page 174.
Set Tabs	Define tab positions for your prompter.	"Set tabs" on page 177.
Library Functions	Save, replace, fetch, and delete prompters.	"Library functions" on page 179.
Directory of Prompters	View a list of prompters in your library.	"Directory of prompters" on page 183.
Display Completed Design	View your prompter as it will appear in your application.	"Display completed design" on page 184.
Print Completed Design	Print a prompter.	"Print completed design" on page 184.

Create or update a prompter

The Create or Update a Prompter option enables you to create a new prompter design or update a prompter design, and to invoke a personal computer text editor.

If you are creating a new prompter, select the Create or Update a Prompter option from the Prompter Design Facility menu (see “Prompter design facility menu” on page 171). The following screen displays (the scale line across the top of the screen is provided to aid you in character positioning):



If you are updating a prompter, or returning to this function after performing other functions, the prompter in your current work area is displayed above (after you fetch it).

MANTIS maintains the following entries:

PAGE = *n*

Description *Optional*. The page of the prompter currently displayed.

Consideration To page through the prompter, press the corresponding PF key, or enter the desired page number here and press ENTER.

LINES = *n*

Description The total number of lines currently in your prompter.

To invoke your text editor, press EDIT and modify your prompter. When you return from the editor, MANTIS will issue a warning if your design exceeds 80 lines or if any line is longer than 77 characters. Any excess data will be truncated. The default tab increment of 8 is assumed, but can be changed using the EDITTABS environment variable.

You may now use all the MANTIS prompter editing functions by entering your prompter data as described below:

First Tab Position

Description You can manipulate lines on the screen by entering action indicators A, I, or D in the first tab position associated with each detail line to be changed.

Options

A Alter this line. Key new information over the existing fields.

I Insert this line.

D Delete this line.

Second Tab Position

Description

You can begin entering text here. Notice the scale line at the top of the screen. The tab character and tab locations are indicated on this line for your convenience. In the previous illustration, the tabbing character is the at sign (@). You may change this character or the tab settings to meet your needs (see "Set tabs" on page 177).

When you enter all data, press ENTER to save your data. If you press CANCEL, you will lose all unsaved additions and updates. After you press ENTER, press CANCEL to return to the Prompter Design Facility menu (see "Prompter design facility menu" on page 171).

You may insert a new line between two existing lines by typing I (for insert) in the first tab position, next to the line you want the inserted line to follow. Type the new line over the existing line, beginning at the second tab position. If the entire line is not modified, the remaining part of the original line must be cleared (ERASEOF), or it will be included as part of the new line. Press ENTER. To insert before the first line, type I (for insert) in the first tab position, press ENTER, and type the new first line on top of the old first line; then the new first line must be altered.

When you recall this prompter through the Display a Prompter Facility on the MANTIS Facility Selection menu, the prompter text appears along with a centered heading. This heading is obtained from the description you provide when you save the prompter (see "Library functions" on page 179). The scale line and line numbers are not displayed when you use this facility.

Set tabs

The Set Tabs option allows you to specify tab settings in a manner compatible with MANTIS for the IBM mainframe. The tab character and tab locations are shown in the scale line along the top of your screen. You may change both the character indicating the tab settings and the actual columns where tabs are set.

When you select the Set Tabs option from the Prompter Design Facility menu (see "Prompter design facility menu" on page 171), the following screen displays:

```
                    M  A  N  T  I  S

                PROMPTER DESIGN FACILITY



 TAB CHARACTER  ..................... @

 TAB POSITIONS  ..................... 7
                                     17
                                     27
                                     37
                                     47
                                     57
                                     67
```

If you change the tab positions and remain in the Create or Update a Prompter Facility, the changed values will be in effect even if you fetch a prompter with different tab position values.

Enter data as described below:

Tab Character

Description *Optional*. Indicates which character you want to represent a tab location. You may choose any character in the MANTIS character set to represent a tab.

Default @ (at sign).

Tab Positions

Description *Optional*. Indicates in which columns you want a tab set. You may designate up to seven tab settings. A tabbing example is provided below:

After you indicate the tab character and the locations where it should appear, press ENTER. MANTIS accepts your selections and returns you to the Prompter Design Facility menu ("Prompter design facility menu" on page 171).

Example If you set the asterisk (*) as the tab character, specify tabs in positions 8 and 27, key in the following text lines, and press ENTER:

```
    ....!..*.1....!....2....!.*..3....!....4..
I THIS IS AN*EXAMPLE
I *TO
I **EXPLAIN THE TABBING
I FUNCTION
```

MANTIS reorganizes the text as shown in the following code sample:

```
....!..*.1....!....2....!.*..3....!....4..
THIS IS AN               EXAMPLE
       TO
                         EXPLAIN THE TABBING
FUNCTION
```

Considerations

- The tab character and positions are only used by the MANTIS editing function. If you use an external editor, the tab character is treated as any other data character.
- The tab character and position are associated with the current Prompter Design session and apply to all prompters edited in the current session. They will return to the default settings when Prompter Design is reentered.

Library functions

The Library Functions option enables you to save new prompters and retrieve, replace, or delete existing prompters. When you complete the specified option, MANTIS returns you to the Prompter Design Facility menu (“Prompter design facility menu” on page 171), and displays a confirmation message in the lower left corner of the screen.

When you select the Library Functions option from the Prompter Design Facility menu (see “Prompter design facility menu” on page 171), the following screen displays:

```
                          M  A  N  T  I  S


                  PROMPTER DESIGN LIBRARY FACILITY

NAME AND DESCRIPTION OF PROMPTER :                      :
:
PASSWORD  ..................... :                      :
CHAIN TO NEXT PROMPTER  ...... :                      :
LANGUAGE  ..................... : ENGLISH              :

            SAVE  ...................  1
            REPLACE  .................  2
            FETCH  ...................  3
            DELETE  ..................  4
            EXPORT  ..................  5
            IMPORT  ..................  6
            TERMINATE  ..........  CANCEL
                         : _ :
```

Enter data as described below:

NAME AND DESCRIPTION OF PROMPTER

Description *Required* for new prompter; Optional for existing prompter. Identifies the prompter by name and description.

Format 1- to 16-character alphanumeric symbolic name; 1- to 48-character alphanumeric description.

Considerations

- If the prompter has been given a name, it will displayed here. You may change the name before executing the Library Functions.
- If you are updating a prompter, MANTIS displays the existing description.
- To change the description of an existing prompter, type over the description and replace it.
- The description is listed in the directory of Prompters and is the heading whenever this prompter is displayed.

PASSWORD

Description *Optional* to fetch; *Required* for all other functions. Provide a password to allow access to this prompter.

Format 1–16 alphanumeric characters.

CHAIN TO NEXT PROMPTER

Description *Optional*. Provides the name of a prompter to chain to from this prompter. Although prompters are limited to four pages, you can specify that another prompter be automatically displayed when the current prompter is finished.

Format Valid prompter name in the format [*user-name*:] *prompter-name*.

Considerations

- The prompter name specified need not exist when you are designing your current prompter.
- If you do not want to chain to another prompter, do not enter NONE or blanks, or MANTIS will search for a nonexistent prompter. If this prompter does not exist, a program fault for the MANTIS PROMPT statement will occur.
- The prompter that will be chained to may be in another MANTIS user's library.

LANGUAGE

Description *Optional*. Specifies the language of the prompter. Your default language is displayed and used to fetch and save or replace all prompters unless you enter a new language in this field.

Considerations

- If you specify another language, it remains in effect until you change it or exit from the Prompter Design Facility.
- You must specify a known language or MANTIS will display an error message and will not execute the selected function.

The following actions can be executed from the Prompter Design Library Facility menu by typing the number of the action in the action field and pressing ENTER or by pressing the corresponding PF key:

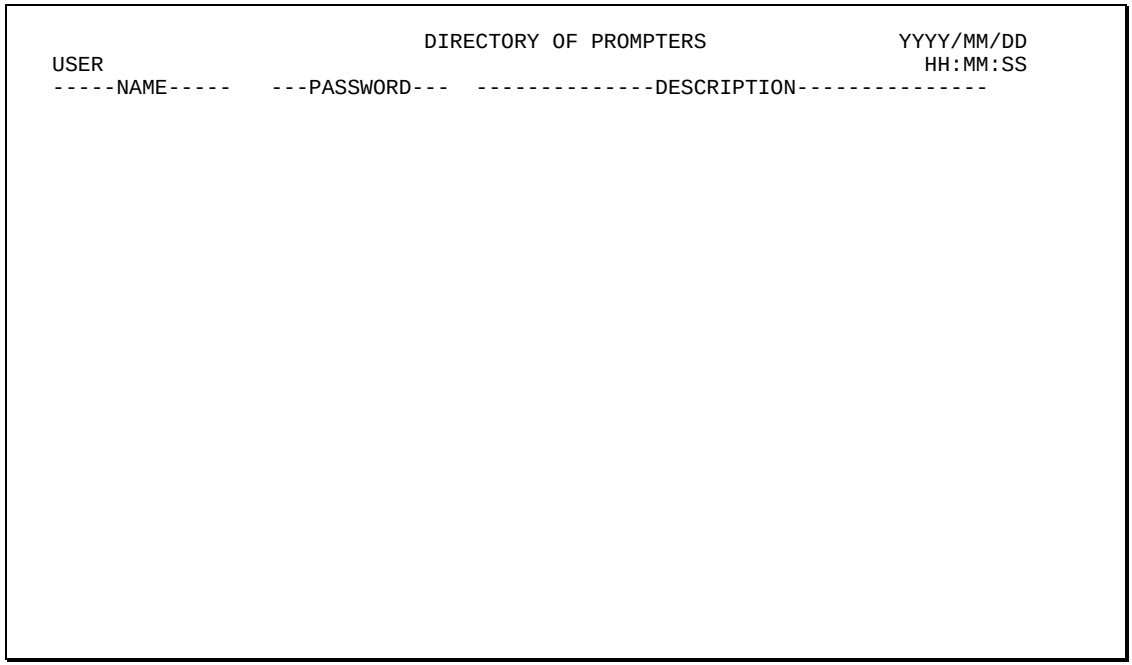
- **SAVE**. Saves a new prompter from the version currently in your work area into your library. Use this option only when the prompter does not already exist in your library.
- **REPLACE**. Replaces a prompter in your library with the updated version currently in your work area.
- **FETCH**. Retrieves a prompter from your library and places it in your work area.
- **DELETE**. Deletes a prompter from your library. When you select this option, a message asks you to confirm your deletion. To delete the prompter, press PF4 again (or press ENTER again if you typed 4 in the action field). To cancel the deletion, press CANCEL.
- **EXPORT**. Exports a prompter design from your library. You can specify only a single design to be exported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus export more than one design/entity. The default output file is of the form *prompter name*.exp. The export function only works on saved designs and does not affect the work area. Unsaved changes to the current working design cannot be exported. If unsaved changes exist, you will be required to confirm the export but the changes to the work area will not be lost.
- **IMPORT**. Imports a screen design to your library. You can specify only a single design to be imported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus import more than one design/entity. The default input file is of the form *prompter_name*.exp.
- **TERMINATE**. Press CANCEL to exit from the prompter Library Functions option.

When you save, replace, fetch, or delete a prompter, you return to the Prompter Design Facility menu (“Prompter design facility menu” on page 171).

The current prompter remains in your work area until you fetch another prompter or until you exit from the Prompter Design Facility.

Directory of prompters

The Directory of Prompters option enables you to view an alphabetic listing of all prompters. When you select the Directory of Prompters option from the Prompter Design Facility menu (see "Prompter design facility menu" on page 171), the following screen displays:



This screen provides the name, password, and description of the prompter. You can only view the listing; you cannot change any information on this screen. If you enter characters on the bottom line and press ENTER, the directory begins listing with the exact prompter name or the one that would be alphabetically after the input characters. After viewing your list of prompter, press ENTER to return to the Prompter Design Facility menu (see "Prompter design facility menu" on page 171). To exit at any time, press CANCEL.

Display completed design

The Display Completed Design option lets you view the prompter currently in your work area. You can return to the Prompter Design Facility menu (“Prompter design facility menu” on page 171) at any time during the prompter design phase and select this option. The current prompter appears on your screen. Press CANCEL to terminate the prompter display and return to the Prompter Design Facility menu. For additional information, refer to the *MANTIS for Windows Language Reference Manual*, P19-2302.

Print completed design

Use the Print Completed Design option to obtain a hard copy of your current prompter. You may return to the Prompter Design Facility menu (“Prompter design facility menu” on page 171) at any time during the prompter design phase and select this option. MANTIS routes the current prompter design to your designated printer.

5

Interface design

The Interface Design Facility lets you design and save new interface profiles and update and maintain existing interface profiles. Interface profiles are used with the INTERFACE and CALL statements to access external (non-MANTIS) programs.

The Interface Design Facility allows automatic data conversion on the CALL statement. You indicate the format (PACKED, ZONED, BINARY, FLOAT, or TEXT) in which data is passed between MANTIS and the interface program. MANTIS supplies the corresponding internal data type (TEXT, BIG, or SMALL).

Interface design facility menu

When you select the Design an Interface option from the MANTIS Facility Selection menu, the following screen displays:

```
                    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

                    :   :
```

To create a new interface design, follow the sequence on the Interface Design Facility Menu (first create the profile, then update the area layouts, etc.). To update an interface design, first select Library Functions to fetch the interface from your library into your work area.

You can move among the options listed on this screen without losing the interface design currently in your work area. Remember to save your interface design or any updates via the Library Functions before exiting from the Interface Design Facility to the MANTIS Facility Selection menu (see the illustration in “Signing on to MANTIS” on page 41). If you try to exit from the Interface Design Facility without saving your current changes, MANTIS asks you to confirm your exit.

This chapter discusses the Interface Design options. If you are creating a new interface, proceed through the chapter. If you are updating an interface design, go directly to the section(s) you need. The following table provides an overview of the options available in Interface Design and where the option is discussed:

Option	Definition	See
Create or Update Interface Profile	Create a new interface profile and update existing ones.	"Create or update interface profile" on page 188.
Update Area Layout	Create or update an area layout for an interface.	"Update area layout" on page 192.
Library Functions	Save, replace, fetch, delete, export, and import an interface design.	"Library functions" on page 197.
Directory of Interfaces	View a listing of interface designs in your library.	"Directory of interfaces" on page 200.
Print Completed Design	Print an interface design.	"Print completed design" on page 201.
In addition to these menu options, this chapter also covers the following topics, in the following sections:		
Using Interfaces	Specify the external program to be called, as well as the MANTIS variables to pass.	"Using interfaces" on page 202.
Building DLL Modules	Build DLL interfaces.	"Building DLL modules" on page 204.
Interface Area Definition and Access	Define the interface area and text variable.	"Interface area definition and access" on page 205.
Sample Interface	Practice the method for creating an interface.	"Sample interface design" on page 206.

Create or update interface profile

The Create or Update Interface Profile option enables you to create a new interface profile and update the profile of an existing interface. If you are creating a new interface profile, select the Create or Update Interface Profile option from the Interface Design Facility menu (see “Interface design facility menu” on page 186). The following screen displays:

```
                          M  A  N  T  I  S

                       INTERFACE DESIGN FACILITY


     NAME OF INTERFACE................. :                          :
     DESCRIPTION.................. :                               :
     ASSOCIATED AREA LAYOUT............ :                          :
     PASSWORD.......................... :                  :
     STATUS............................ :                  :
     TYPE OF INTERFACE................. :              :
     DATA FLOW......................... :              :
     NAME OF MODULE..... :                             :
     NAME OF ROUTINE................... :
```

If you are updating an interface profile, or returning to this option after performing another option in Interface Design, the interface description currently in your work area will be displayed above.

NAME OF INTERFACE

Description *Required* for a new profile; *Optional* for an existing profile. Provides a name for the interface.

Format 1- to 30-character alphanumeric symbolic name .

DESCRIPTION

Description *Optional*. Provides a description of this screen.

Format 1- to 58-character alphanumeric description.

ASSOCIATED AREA LAYOUT

Description *Optional*. Supplies the name of an interface.

Format Name of an existing interface.

Considerations

- 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 design.
- If there is no associated area layout, leave this field blank—if you enter NONE, MANTIS will search for an interface named NONE.
- If you enter the same name as you entered in NAME OF INTERFACE, MANTIS will clear this field.

PASSWORD

Description *Optional*. Provides a password to control access to this interface.

Format 1–16 alphanumeric characters.

STATUS

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

Option ACTIVE

Consideration Do not enter any additional characters or spaces, just enter ACTIVE. Anything other than ACTIVE prohibits access to this interface from a program.

TYPE OF INTERFACE

Description *Required*. Indicates which type of interface you are building.

Options DLL Accesses a routine in a dynamic link library.

Consideration For more detailed information on the DLL interfaces, see "Using interfaces" on page 202.

DATA FLOW

Description *Optional*. Specifies the direction of data flow between MANTIS and the interface program.

Default FULL

Options INPUT Data is passed from the interface program to MANTIS.

OUPUT Data is passed from MANTIS to the interface program.

FULL Data is passed in both directions.

Considerations

- For OUTPUT, the MANTIS variables specified in the interface profile are copied to the interface area before the area is passed to the interface program. The values in the interface area are NOT copied back into the corresponding MANTIS variables after the CALL.
- For INPUT, the current values of the MANTIS variables specified in the interface profile are NOT copied to the interface area before the CALL. The values returned by the interface program are copied from the interface area into the corresponding MANTIS variables.
- For FULL, both OUTPUT and INPUT processing are performed, in that order.
- The DATA FLOW option is not supported by MANTIS for the IBM mainframe. Specify FULL (the default) for compatibility with MANTIS for the IBM mainframe.

NAME OF MODULE

Description *Required*. Indicates the DLL to be loaded at the CALL statement.

Format 1–64 alphanumeric characters.

Consideration You must use a full, valid name including the .dll file extension.

NAME OF ROUTINE

Description *Required*. Specifies the name of the DLL routine you want to call at the CALL statement.

Format 1–16 alphanumeric characters.

Consideration This field should match the name declared in the module definition (.DEF) file for the DLL.

Enter the data for your interface design, and press ENTER. MANTIS accepts your interface design and returns you to the Interface Design Facility menu (see "Interface design facility menu" on page 186).

Update area layout

The Update Area Layout option enables you to create or update an area layout for an interface. Your area layout can contain a maximum of 160 fields. Each page displays 16 fields.

When you select the Update Area Layout option from the Interface Design Facility menu (see “Interface design facility menu” on page 186), the following screen displays (each dash (-) represents a built-in tab for this screen):

```
                    MANTIS INTERFACE AREA DEFINITION         YYYY/MM/DD
NAME: nnnn                                                     HH:MM:SS
PAGE: n                   ELEMENT COUNT: n               ELEMENT SIZE: m
ELEMENT     NAME      TYPE     FORMAT LENGTH SIGN DEC   DIM   ATTRIBUTE
- -      -                      -       -       -    -     -     -




                (USE PF1-PF10 TO PAGE; USE CANCEL TO EXIT)
```

If you are updating an interface profile or returning to this option after performing another option in Interface Design, your current area layout appears.

MANTIS maintains the following entries:

NAME: *nnnn*

Description Identifies the interface.

PAGE: *n*

Description Identifies the page of the area layout currently displayed. Use the relevant PF keys (1–10) to page through your area layout.

Consideration You can also specify the required page number over the current page number at the top of the screen and press ENTER.

ELEMENT COUNT: *n*

Description Identifies the total number of elements currently in your area layout.

ELEMENT SIZE: *m*

Description Identifies the total size of the elements currently in your area layout.

TYPE

Description MANTIS maintains the type as BIG, SMALL, or TEXT, depending on the format and length you specify.

Enter the area layout as described below:

ELEMENT

First Tab Position

Description *Required*. Specifies whether you want to alter, insert, or delete the line.

Options A Alter this line with the new information keyed over the existing fields. Type the new information over the existing fields. You must enter A in order for MANTIS to change the fields.

I Insert this line. Type the new information over the existing fields. You must enter I to insert the line.

D Delete this line.

Second Tab Position

Description *Required*. Specifies which line you want to alter, insert, or delete.

Consideration You can insert one or more elements between two existing elements (e.g., between elements 4 and 5, by inserting the new element as line 4 and pressing ENTER. MANTIS renumbers the new element as line 5, the original line 5 as line 6, 6 as 7, etc.). You can insert a line before element 1 by inserting element 0.

NAME

Description *Required*. Supplies a standard variable name.

FORMAT

Description *Required*. Indicates the external format in which the data will be transferred.

Options For PROGRAM, DLL, and REMOTE interfaces:

Z Unpacked (zoned) decimal format

B Halfword or fullword binary format

F Floating-point format

T Text character-string format

K Kanji data

Consideration Only the first character is required.

LENGTH

Description *Required*. The length, in bytes, of the field. Note that this is not the number of digits in a packed decimal field.

SIGN

Description *Optional*. Specifies whether the field is signed.

Default N

Considerations

- Float fields are always considered signed.
- For text fields, the value of sign is ignored.
- If the value of sign for BINARY, ZONED, and PACKED is N, it is not displayed on this layout definition.

DEC

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

Default 0

Options 0–10

DIM

Description *Optional*. Specifies the dimension of a field (the number of times it occurs). During execution of the INTERFACE statement, MANTIS allocates the variables specified in this interface area layout as single occurrence fields if the DIM value is 1, 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.

Options 1–255

Consideration If the INTERFACE statement indicates multiple buffering, an additional level of dimension is generated at that time.

ATTRIBUTE

Description *Optional*. You may assign SINGLE_LEVEL on any element. This holds the information in the interface area only once, regardless of the LEVEL specification in the INTERFACE statement. Fields marked as SINGLE_LEVEL are normally used for interface program context between interface calls.

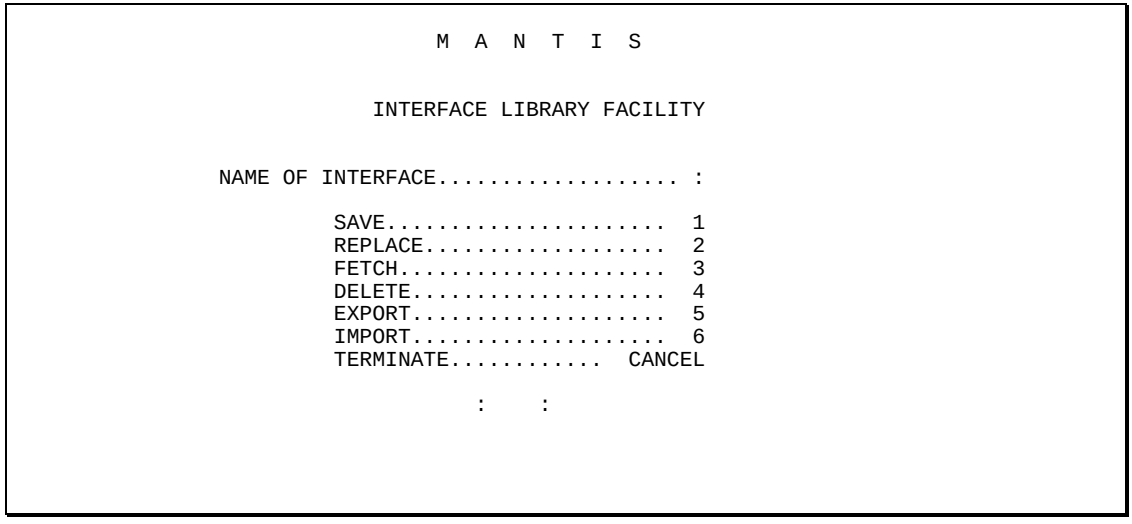
For float fields in non-Mainframe interfaces, you can specify MBF to indicate the field is Microsoft Binary Format. The default is IEEE float format.

Consideration In Interface Design, S stands for SINGLE_LEVEL, not SCRAMBLE as in File Design.

When entering all the data, press ENTER to store the area layout definition. If you press CANCEL without pressing ENTER first, you will lose your unsaved additions and updates. After you press ENTER, press CANCEL to return the Interface Design Facility menu (see “Interface design facility menu” on page 186).

Library functions

The Library Functions option enables you to save new interface designs and to retrieve, replace, and delete interfaces. When you select the Library Functions option from the Interface Design Facility menu (see “Interface design facility menu” on page 186), the following screen displays:



Enter data as described below:

NAME OF INTERFACE

Description *Required.* Name of this interface design. The name will be the same as that specified on the interface profile if you are saving or replacing an interface.

Format 1- to 16-character alphanumeric name.

Consideration If the interface was named, it will be displayed in this field. You may change the name before executing the Library Functions.

The following actions can be executed from the INTERFACE LIBRARY FACILITY menu by typing the number of the action in the action field or pressing the corresponding PF key:

- **SAVE**. Saves new interface profiles in your library. This function is used 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. New interface profiles will replace old interface profiles when you specify REPLACE. MANTIS will ask you to confirm that you want the old interface to be replaced with the new.
- **FETCH**. Retrieves an interface profile from your library and places it in your work area.
- **DELETE**. Deletes an interface profile from your library. MANTIS will ask you to confirm the deletion.

- **EXPORT**. Exports an Interface design from your library. You can specify only a single design to be exported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus export more than one design/entity. The default output file is of the form *interface_name*.exp. The export function only works on saved designs and does not affect the work area. Unsaved changes to the current working design cannot be exported. If unsaved changes exist, you will be required to confirm the export but the changes to the work area will not be lost.

- **IMPORT**. Imports an Interface design to your library. You can specify only a single design to be imported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus import more than one design/entity. The default input file is of the form *interface_name*.exp.

- **TERMINATE**. Press CANCEL to return to the Interface Design Facility menu ("Interface design facility menu" on page 186).

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 corner of the screen.

Directory of interfaces

The Directory of Interfaces displays an alphabetic listing of all interface designs. When you select the Directory of Interfaces option from the Interface Design Facility menu, the following screen displays:

```
                          DIRECTORY OF INTERFACES                YYYY/MM/DD
USER                                                               HH:MM:SS
----NAME-----    ---STATUS---    --------------------DESCRIPTION-------------
```

Passwords are not displayed on the directory listing.

You may position the directory listing at a specific point (repoint option) by entering 1–16 alphanumeric characters (representing an interface name or the first part of an interface name) on the bottom line of the screen. When you press ENTER, the directory will begin listing with the interface name on, or alphabetically after, the entered characters.

After viewing your list of interface designs, press ENTER to return to the Interface Design Facility menu (“Interface design facility menu” on page 186). Press CANCEL to exit before the end of the listing.

Print completed design

Use the Print Completed Design option to obtain a hard copy of your current interface design. At any time during the interface design phase, you can return to the Interface Design Facility menu (see “Interface design facility menu” on page 186) and select this option. MANTIS routes the current interface design to your designated printer.

Using interfaces

This section describes the common elements of interface usage. See “DLL interfaces” on page 203 for more information about DLL interfaces.

Creating an interface profile

You create an interface profile by using the Interface Design Facility. With the interface profile you specify the external program to be called. You also specify the MANTIS variables to be passed on the call.

To define an interface in a MANTIS program, use the INTERFACE statement, which loads the interface profile into memory and, if necessary, defines the MANTIS variables to be passed. Use the CALL statement to communicate with the interface program. You can check the status (success or failure) of the CALL by using the *interface-name* and FSI text functions. The interface is closed when the MANTIS program terminates or a release statement is executed.

When executing a CALL statement, the steps that occur depend on the DATA FLOW option specified in the interface profile. If either OUTPUT or FULL is specified in the DATA FLOW option, the current values of the MANTIS variables specified in the interface profile are converted to their external format and copied into a single block of memory (the interface area). Arguments specified on the CALL supercede the first, second, and so on, elements of the interface area. The interface area is then passed to the interface program. If either INPUT or FULL is specified in the DATA FLOW option, the interface area is retrieved from the interface program and the (modified) values are copied (back) into the corresponding MANTIS variables. The *interface-name* status value is set from the first eight bytes of the interface area.

You can trap errors that occur when executing the CALL statement by using the TRAP *interface-name* ON statement. TRAP/ON causes ERROR to be returned in the *interface-name* text function (defined by the INTERFACE statement). When ERROR is returned, you can use the MANTIS FSI function to obtain the exact cause of the error.

DLL interfaces

A DLL (Dynamic Link Library) interface enables MANTIS programs to call a DLL routine. You specify the DLL module and routine names in the interface profile. The profile also specifies which MANTIS variables are to be passed to the routine. Those variables are copied to or from (depending on the DATA FLOW option) a single memory block (the interface area) using the field order and external formats specified in the interface profile. The interface area is passed to the DLL routine as its only argument. The DLL may return a status value to the MANTIS program by using the first eight bytes of the interface area.

The DLL module is loaded on the first CALL statement, and freed by a RELEASE statement or upon termination of the MANTIS program. If several INTERFACE statements are executed for the same DLL module, the module is only loaded once.

If TRAP is ON, MANTIS may return an ERROR status via the *interface-name* function. Use the FSI function to determine which of the following errors has occurred:

- **NOTFOUND**. The DLL module was not found.
- **ROUTINE**. The named routine was not exported in the DLL module.
- **MAXDLLS**. Too many DLLs area loaded (the limit is 50).

Building DLL modules

Building DLLs (Dynamic Link Libraries) for use with MANTIS is no different than building DLLs for any other use. When designing the DLL routines, follow these guidelines:

- Limit the name of each DLL routine to 15 characters.
- For DLLs that are not reentrant, save the routine's context in a single data segment. For reentrant DLLs, use multiple nonshared segments (one per process/client).
- Consult the documentation for your compiler if your DLL needs an initialization routine (to be called when the DLL is loaded) or a termination routine (called when the DLL is released from memory).
- Do not access any resources (files, pipes, semaphores, memory blocks, etc.) through the DLL, unless it created/opened them.

Interface area definition and access

The storage area that MANTIS passes to the interface (the interface area) is defined as described in the following table:

MANTIS	Interface Area Layout	C	FORTRAN	Pascal	COBOL
SMALL	BINARY 1	char	CHARACTER*1	CHAR	PIC X
SMALL	BINARY 2	short	INTEGER*2	INTEGER2	PIC 9(4) COMP
BIG	BINARY 4	long	INTEGER*4	INTEGER4	PIC 9(8) COMP
BIG	FLOAT 4	float	REAL*4	REAL4	*
BIG	FLOAT 8	double	REAL*8	REAL8	COMP 2

* Set up a PIC 9(4) COMP field subdefined as two PIC fields. Move LOW-VALUE to the first PIC X field and the interface to the second PIC X field.

MANTIS uses the first eight bytes of the interface area as a text variable associated with the *interface-name*. The MANTIS program that issued the CALL can use the *interface-name* function to obtain the value returned by the interface program.

The remainder of the interface area is defined according to the interface area layout definition (see "Update area layout" on page 192). Numeric and text fields are stored in the order that they appear in the interface area layout. For each text and numeric field, specify the same size as during the interface area layout definition. The maximum size of the interface area is 65535 bytes.

Sample interface design

This section shows a step-by-step method for designing an interface.

The steps are as follows:

1. Creating the MANTIS program.
2. Creating the MANTIS screen.
3. Creating the interface profile.
4. Defining the interface layout.
5. Saving the interface profile.
6. Writing the interface profile.
7. Testing the interface.

Each of the steps is explained with screens and sample programs throughout the following subsections.

Creating the MANTIS program

As your first step, use MANTIS to create the following program:

```
10 ENTRY TEST_INTERFACE
20  SCREEN MAP("testintf")
30  INTERFACE INTF("example","")
40  CALL INTF
50  IF INTF<>"success"
60   SHOW "ERROR: A failure occurred in interface processing";
70  END
80  CONVERSE MAP
90 EXIT
```

This program calls the interface program “EXAMPLE.DLL” by way of the TESTINTF interface to get information about memory usage.

Creating the MANTIS screen

In the next step, use MANTIS to create your screen. The following screen shows an example:

```
                    Current Memory Availability

Percent of memory in use.............: ##########
Bytes of physical memory.............: ##########
Free physical memory bytes...........: ##########
Bytes of paging file.................: ##########
Free bytes of paging file............: ##########
User bytes of address space..........: ##########
Free user bytes of address space.....: ##########
```

Once the screen is built, you can continue to the next step.

Creating the interface profile

As the next step in creating this sample interface, use the Interface Design Facility. Access the Create or Update Interface Profile option from the Interface Design Facility menu (see “Interface design facility menu” on page 186), and fill in the fields, as shown in the following example:

```
                        M A N T I S

                   INTERFACE DESIGN FACILITY

NAME OF INTERFACE.................. : EXAMPLE                      :
DESCRIPTION..... : interface for the TESTINTF program          :
ASSOCIATED AREA LAYOUT............. :                            :
PASSWORD........................... :                    :
STATUS............................. : ACTIVE             :
TYPE OF INTERFACE.................. : DLL          :
DATA FLOW.......................... : FULL         :
NAME OF MODULE..... : EXAMPLE.DLL                              :
NAME OF ROUTINE.................... : MemoryStatus
```

After you enter all data, press ENTER. If you press CANCEL without pressing ENTER first, you will lose your unsaved additions and updates. After you press ENTER, press CANCEL, to return to the Interface Design Facility menu (see “Interface design facility menu” on page 186).

Defining the interface layout

After creating your interface profile, as shown in "Creating the interface profile" on page 208, access the Update Area Layout option from the Interface Design Facility menu (see "Interface design facility menu" on page 186). Fill in the Interface Area Definition as shown in the following example (each dash (-) represents a built-in tab for this screen):

```
                    MANTIS INTERFACE AREA DEFINITION         YYYY/MM/DD
NAME: EXAMPLE                                                  HH:MM:SS
PAGE: 1                  ELEMENT COUNT: 8              ELEMENT SIZE:32
ELEMENT    NAME           TYPE    FORMAT LENGTH SIGN DEC   DIM   ATTRIBUTE
- -      -                        -      -       -    -     -     -
 1      MEMLINE           BIG     BINARY   4
 2      MEMORY_LOAB       BIG     BINARY   4
 3      TOTAL_PHYS        BIG     BINARY   4
 4      AVAIL_PHYS        BIG     BINARY   4
 5      TOTAL_PAGE_FILE   BIG     BINARY   4
 6      AVAIL_PAGE_FILE   BIG     BINARY   4
 7      TOTAL_VIRTUAL     BIG     BINARY   4
 8      AVAIL_VIRTUAL     BIG     BINARY   4




              (USE PF1 - PF10 TO PAGE; USE CANCEL TO EXIT)
```

After you enter all data, press ENTER to store the area layout definition. If you press CANCEL without pressing ENTER first, you will lose your unsaved additions and updates. After you press ENTER, press CANCEL to return to the Interface Design Facility menu (see "Interface design facility menu" on page 186).

Saving the interface profile

After you have created the interface profile and layout, select the Library Functions option from the Interface Design Facility menu (see “Interface design facility menu” on page 186). Fill in the information as indicated on the following screen, choosing option 1 for SAVE:

```
                        M A N T I S
                  INTERFACE LIBRARY FACILITY

NAME OF INTERFACE..................... : EXAMPLE         :

          SAVE..................... 1
          REPLACE..................2
          FETCH....................3
          DELETE...................4
          TERMINATE..........CANCEL

                       : 1 :
```

After you save the interface design, you will return to the Interface Design Facility menu (see “Interface design facility menu” on page 186).

Writing the interface program

After writing a program in MANTIS (see the program in “Creating the MANTIS program” on page 207), creating the interface profile, defining the layout, and saving them, write the following program in C as part of the process of creating the EXAMPLE.DLL interface:

```
/*############################################################
      M O D U L E:   example.c
      description:   MANTIS for Windows sample DLL interface
############################################################*/

// include necessary headers
#include <windows.h>

// define interface area layout passed from/to MANTIS
typedef struct _AREA2
{
  char  status[8];
  DWORD dwLength;        // sizeof(MEMORYSTATUS)
  DWORD dwMemoryLoad;    // percent of memory in use
  DWORD dwTotalPhys;     // bytes of physical memory
  DWORD dwAvailPhys;     // free physical memory bytes
  DWORD dwTotalPageFile; // bytes of paging file
  DWORD dwAvailPageFile; // free bytes of paging file
  DWORD dwTotalVirtual;  // user bytes of address space
  DWORD dwAvailVirtual;  // free user bytes
} AREA2;

// define structure returned from Win32 API call
MEMORYSTATUS memstat;
```

```
/*.....................................................
F U N C T I O N
name:        MemoryStatus
description: Retrieves memory information via Win32 API
.....................................................*/
void WINAPI MemoryStatus (AREA2 *ptr)
{

GlobalMemoryStatus(&memstat);
ptr->dwLength = memstat.dwLength;
ptr->dwMemoryLoad = memstat.dwMemoryLoad;
ptr->dwTotalPhys = memstat.dwTotalPhys;
ptr->dwAvailPhys = memstat.dwAvailPhys;
ptr->dwTotalPageFile = memstat.dwTotalPageFile;
ptr->dwAvailPageFile = memstat.dwAvailPageFile;
ptr->dwTotalVirtual = memstat.dwTotalVirtual;
ptr->dwAvailVirtual = memstat.dwAvailVirtual;

memcpy(ptr->status, "success", 7);

return;
}
```

This program calls the GlobalMemoryStatus function of Windows to retrieve data concerning memory status and usage. This data is then placed in the buffer and returned to the MANTIS for Windows calling program.

Testing the interface

Now that the interface design is complete, you may access it and use it in your applications. If you want to test how it will run, select RUN A PROGRAM BY NAME from the Facility Selection menu and enter the name of your new interface program.

6

Prototyping

This chapter provides an overview of prototyping and describes two MANTIS facilities you can use to prototype your applications.

Introduction to prototyping

Prototyping defines requirements that analyze programming needs, and refines them by building a working model of your system. This working model lets programmers and end-users interact on the development of the system.

Prototyping gives users a model to work with and evaluate. The definition of your system occurs through gradual discovery of the users' needs. Participation in design and implementation gives users confidence and ownership, and reduces system rework. Because the user works as a member of the design team, user/developer adversarial relationships are less likely to occur.

In general, you can use prototyping alone or with traditional life cycle design methods to reduce life cycle costs, project risks, and application backlogs. For the prototype to be economically feasible, you must develop it rapidly, and it must be flexible enough to allow rapid change during the development cycle.

To identify the essential features of a system, the prototype must simulate your system in a simplified manner. For valid evaluation, the prototype should demonstrate all the primary functions of the system. It should provide error detection and correction procedures, demonstrate interscreen flow, and intended human/machine interaction. This way, the user can see a concrete model of the system, compare it with requirements, and discuss ideas with you.

Developers can also use prototyping as an evaluation tool. A conceptual model can be used to show design alternatives, or the potential value and use of an end product. As a validation vehicle, prototypes can be tested before committing development resources. Other advantages of the prototyping design process include the following:

- The opportunity to assess the impact of the system on the workplace.
- Better project management and better communication among team members.
- Training vehicles for users.
- Libraries of models used at the beginning of the development cycle to stimulate ideas.
- Development documentation.
- Minimal waste of time, money, and resources (if a system is built incorrectly, it is often too expensive to change).

Prototyping uses a working model as the foundation for evaluating and/or refining the subject system. The design continues until developers and users agree on a solution.

Prototype designs

The following prototype designs are available:

- **Disposable prototypes.** These prototypes demonstrate a selected set of quality factors. They are developed quickly, and must be easy to test.

- **Cyclic prototypes.** These prototypes use successive refinements to create a system. This design process defines a set of needs, and quickly implements them. These needs are expanded and refined as user/developer understanding of the system grows.

The prototyping life cycle makes use of traditional functional specification techniques to gain an initial understanding of the problem. When the basic requirements for the system are identified, a model system is implemented. This system provides a basis for discussion. The system is modified as the users/developers continue to define problems and provide solutions.

The prototyping life cycle

There are four basic stages in the prototyping life cycle:

- **Identify needs.** Define the problems and the functions and data needed to solve them.
- **Develop a working model.** Create a preliminary model that incorporates the key items identified in the previous step. Rapid development of a working model maintains interest in the project and inspires user confidence.
- **Implement the model.** Demonstrate the model, in context, to everyone interested. Encourage brainstorming and additions to the system.
- **Revise and evaluate.** Evaluate the system in the user's environment.

The prototype is alternately revised and implemented until the system is acceptable to both developers and users. This design process produces a definite solution to the initial problem that has a low probability of change and a high probability of user acceptance.

MANTIS prototyping tools

MANTIS combines the features of a fourth-generation language, the Run System Facility, and the Scenario Design Facility to achieve powerful prototyping capabilities. The ease of use of MANTIS minimizes the time and cost of designing and implementing systems, making prototyping a viable alternative to traditional systems design methods. Both facilities are options which may be available to you from your MANTIS Facility Selection menu.

The Run System Facility enables you to execute data entry, browsing, and inquiry applications without writing specific programs to perform these applications. You can use it to test screen and file designs and to quickly demonstrate basic system functions.

The Scenario Facility enables you to define a system flow during the design phase of an application. The scenario shows the hierarchy of the screen-to-screen flow within the application. At the time you design your scenario, it is not necessary for the MANTIS screens or programs which you define to Scenario to actually exist in your libraries. Therefore, you can define and print your entire application scenario structure before exiting to the other facilities to create your actual screen, prompters, files, or programs. You can demonstrate your defined scenario to end users as if the application has been implemented. Notification of any nonexistent entities will appear when you run a scenario.

You can also use Scenario to transform your completed design into a production application. Starting with the lowest levels in your application hierarchy (typically the detail levels), you can alter your scenario definition to execute a MANTIS program instead of merely displaying a predefined MANTIS screen. It is possible to have the lower levels of the hierarchy execute MANTIS programs while the upper levels remain menus. The entry point to the programs remains under the control of the scenario.

These highly diverse facilities enable you to concurrently develop multiple prototypes, each dealing with a separate system concern. You can use the MANTIS Run System along with MANTIS programs to prototype functional system requirements. At the same time, the Scenario Design Facility can be used to rapidly prototype the user/machine interface. These parallel prototypes can then be brought together to implement the final system.

Using MANTIS prototyping capabilities to their fullest by implementing multiple, concurrent prototypes saves development time and breaks the development task into discrete, simple units thereby facilitating project management.

MANTIS Run System Facility

The Run System Facility enables you to execute data entry, browse, and inquiry applications without writing specific programs to perform these functions. MANTIS provides a set of generalized programs for inquiry and maintenance functions to MANTIS files and external file views. You can access these programs via the Run System Facility or use programming mode to customize the applications.

The Run System Facility cannot be run in compatibility mode.

Accessing the Run System Facility

To use the Run System, first create your screen and file. (See "Screen design" on page 43 and "File design" on page 107 for details.) When you select the MANTIS Run System Facility, the following screen displays:

```
                              M  A  N  T  I  S

                            RUN SYSTEM FACILITY

SCREEN NAME ..................... :                                    :
NUMBER OF RECORDS ON SCREEN ... :    :

FILE OR VIEW NAME ............. :                                    :
FILE OR VIEW PASSWORD ......... :                  :

TYPE (MANTIS,DOS) ... :        :
KEY TYPE (NUMERIC,TEXT, KANJI) ....... :         :

                             SELECT SYSTEM TO RUN

                           DATA ENTRY  ......... 1
                           BROWSE  ............. 2
                           INQUIRY  ............ 3
                           INSTRUCTIONS  ....... 4
                           TERMINATE  ..... CANCEL
                                    :   :
```

To access a Run System program, enter the data described below:

SCREEN NAME

Description *Required*. Name of the MANTIS screen that is used to enter or browse the data.

Format 1- to 28-character alphanumeric symbolic name.

Consideration If the screen does not reside in your library, you can access it by specifying the name of the user in whose library it does reside, followed by a colon and the screen name, as follows:

```
[user-name:]screen-name
```

NUMBER OF RECORDS ON SCREEN

Description *Optional*. Specifies the total number of records that can be entered or displayed on the screen named in SCREEN NAME (the total number is the original line plus the total number of vertical repeat occurrences).

Default 1

Format 1- to 2-digit number.

FILE OR VIEW NAME

Description *Required*. Provides the name of the MANTIS file or external file view you wish to access.

Default Value supplied in the SCREEN NAME field.

Format 1- to 16-character alphanumeric symbolic name.

Consideration If the file does not reside in your library, you can access it by specifying the name of the user in whose library it does reside followed by a colon and the file name, as follows:

```
[user-name:]file-name
```

FILE OR VIEW PASSWORD

Description *Optional*. Provides the password for this file. If you want to use the DATA ENTRY option on the Run System Facility menu, you must enter the password for deleting/inserting; otherwise, supply the password for viewing.

Format 1–16 alphanumeric characters.

Consideration This must be the same password defined in the profile of the MANTIS file or view.

TYPE

Description *Required*. Indicates the type of file used. Only the first character is required.

Options

M MANTIS file.

D External DOS file or VSAM emulation using an external DOS file.

KEY TYPE

Description *Required*. Supplies the primary key of the file.

Options

N Numeric (BIG or SMALL)

T TEXT

K KANJI

Consideration The Run System enables you to perform data-entry functions only on single-keyed files. You can perform browse and inquiry functions for multikeyed files by specifying the key type of the first key field.

DATA ENTRY

Description *Optional*. Select this option if you want to enter data into the file.

BROWSE

Description *Optional*. Select this option to indicate that you want to browse the data in the file.

INQUIRY

Description *Optional*. Select this option to query a specific record on the file. MANTIS will display the following message in the lower left corner of the screen:

```
PLEASE ENTER KEY DATA FOR INQUIRY
```

Enter the first key for the record you want to see, and press ENTER. MANTIS will display the record in the first record entry line on the screen.

INSTRUCTIONS

Description *Optional*. Provides an overview of the Run System and instructions for customizing applications.

TERMINATE

Description *Optional*. Press CANCEL to terminate the Run System Facility and return to the Facility Selection menu.

Customizing applications

To customize applications, you may either use applications from the Master User library or fetch similar skeleton modules from the EXAMPLES library. The following table describes the skeleton modules that are available:

Program	Description
SKELETON_ENTRY	Data-entry program
SKELETON_BROWSE	Browsing program
SKELETON_INQUIRY	Inquiry program
SKELETON_MAINT	Inquiry/maintenance program
SKELETON_MENU1	Menu program using your screen
SKELETON_MENU2	Generic menu program without a screen

To use these programs, you must be in programming mode. Load the desired program from the EXAMPLES library using this format:

```
LOAD EXAMPLES:SKELETON_ENTRY,CASINO
```

When the program is loaded in your work area, you can begin modifications.

SKELETON_ENTRY program

The following skeleton data-entry program is available in the EXAMPLES library:

```
 10 ENTRY SKELETON_ENTRY
 20 .TEXT CHAIN_NAME(33)
 30 .¦*********************************************************
 40 .¦*                                                       *
 50 .¦* TO USE THIS AS A SKELETON TO CREATE DATA ENTRY PROGRAMS,*
 60 .¦* THE FOLLOWING MUST BE CHANGED:                        *
 70 .¦* 1.  INSERT THE PROPER SCREEN AND FILE INFORMATION.     *
 80 .¦* 2.  DELETE THE FILE/ACCESS STATEMENTS NOT USED.       *
 90 .¦* 3.  IF THIS PROGRAM IS TO CHAIN TO ANOTHER PROGRAM,    *
100 .¦*     FILL IN CHAIN_NAME, ELSE LEAVE IT BLANK.          *
110 .¦*                                                       *
120 .¦*********************************************************
130 .¦
140 .SCREEN MAP("???????????????")
150 .FILE RECORD("???????????????","???????????????")
160 .ACCESS RECORD("???????????????","???????????????")
170 .CHAIN_NAME=""
180 .¦
190 .¦
200 .CONVERSE MAP
210 .WHILE MAP<>"CANCEL"
220 ..INSERT RECORD
230 ..CLEAR MAP
240 ..CONVERSE MAP
250 .END
260 .IF SIZE(CHAIN_NAME)>ZERO
270 ..CHAIN CHAIN_NAME
280 .END
290 EXIT
```

SKELETON_BROWSE program

The following skeleton browse program is available on the EXAMPLES library:

```
 10 ENTRY SKELETON_BROWSE
 20 .TEXT CHAIN_NAME(33)
 30 .¦************************************************************
 40 .¦*                                                          *
 50 .¦* TO USE THIS AS A SKELETON TO CREATE BROWSING PROGRAMS,   *
 60 .¦* THE FOLLOWING MUST BE CHANGED:                          *
 70 .¦* 1.  SET THE NUMBER_RECORDS FIELD TO THE NUMBER          *
 80 .¦*     OF RECORDS ON THE SCREEN TO BE USED.               *
 90 .¦* 2.  INSERT THE PROPER SCREEN AND FILE INFORMATION.      *
100 .¦* 3.  DELETE THE FILE/ACCESS STATEMENTS NOT USED.         *
110 .¦* 4.  IF THIS PROGRAM IS TO CHAIN TO ANOTHER PROGRAM,     *
120 .¦*     FILL IN CHAIN_NAME, ELSE LEAVE IT BLANK.           *
130 .¦*                                                        *
140 .¦************************************************************
150 .¦
160 .NUMBER_RECORDS=1
170 .SCREEN MAP("????????????????")
180 .FILE
  RECORD("????????????????","????????????????",NUMBER_RECORDS)
190 .ACCESS
  RECORD("????????????????","????????????????",NUMBER_RECORDS)
200 .CHAIN_NAME=""
210 .¦
220 .¦
230 .WHILE MAP<>"CANCEL" AND RECORD<>"END"
240 ..CLEAR MAP
250 ..GET RECORD LEVEL=1
260 ..BUFFER=1
270 ..WHILE RECORD<"END" AND BUFFER<NUMBER_RECORDS
280 ...BUFFER=BUFFER+1
290 ...GET RECORD LEVEL=BUFFER
300 ..END
310 ..CONVERSE MAP
320 .END
330 .IF SIZE(CHAIN_NAME)>ZERO
340 ..CHAIN CHAIN_NAME
350 .END
360 EXIT
```

SKELETON_INQUIRY program

The following skeleton inquiry program is available on the EXAMPLES library:

```
 10 ENTRY SKELETON_INQUIRY
 20 .TEXT CHAIN_NAME(33)
 30 .¦*********************************************************
 40 .¦*                                                       *
 50 .¦* TO USE THIS AS A SKELETON TO CREATE INQUIRY PROGRAMS,   *
 60 .¦* THE FOLLOWING MUST BE CHANGED:                        *
 70 .¦* 1.  IF THE KEY IS NUMERIC DELETE THE TEXT             *
 80 .¦*     STATEMENT FOR INQUIRY_KEY                         *
 90 .¦* 2.  SET THE NUMBER_RECORDS FIELD TO THE NUMBER        *
100 .¦*     OF RECORDS ON THE SCREEN TO BE USED.              *
110 .¦* 3.  INSERT THE PROPER SCREEN AND FILE INFORMATION.    *
120 .¦* 4.  DELETE THE FILE/ACCESS STATEMENTS NOT USED.       *
130 .¦* 5.  IF THIS PROGRAM IS TO CHAIN TO ANOTHER PROGRAM,   *
140 .¦*     FILL IN CHAIN_NAME, ELSE LEAVE IT BLANK.          *
150 .¦*                                                       *
160 .¦*********************************************************
170 .¦
180 .TEXT INQUIRY_KEY(100)
190 .NUMBER_RECORDS=1
200 .SCREEN MAP("????????????????")
210 .FILE
  RECORD("????????????????","????????????????",NUMBER_RECORDS)
220 .ACCESS
  RECORD("????????????????","????????????????",NUMBER_RECORDS)
230 .CHAIN_NAME=""
240 .¦
250 .¦
260 .ATTRIBUTE(MAP)="PROTECT"
270 .CLEAR
280 .SHOW "PLEASE ENTER KEY DATA FOR INQUIRY"
290 .OBTAIN INQUIRY_KEY
300 .WHILE MAP<>"CANCEL" AND RECORD<>"END"
310 ..CLEAR MAP
320 ..GET RECORD(INQUIRY_KEY)LEVEL=1
330 ..BUFFER=1
340 ..WHILE RECORD<>"END" AND BUFFER<NUMBER_RECORDS
350 ...BUFFER=BUFFER+1
```

```
360 ...GET RECORD LEVEL=BUFFER
370 ..END
380 ..CONVERSE MAP
390 ..OBTAIN INQUIRY_KEY
400 .END
410 .IF SIZE(CHAIN_NAME)>ZERO
420 ..CHAIN CHAIN_NAME
430 .END
440 EXIT
```

SKELETON_MAINT program

This skeleton inquiry/maintenance program is on the EXAMPLES library.

```
 10 ENTRY SKELETON_MAINT
 20 .TEXT CHAIN_NAME(33)
 30 .¦*************************************************************
 40 .¦*                                                           *
 50 .¦* TO USE THIS AS A SKELETON TO CREATE MAINTENANCE PROGRAMS*
 60 .¦* THE FOLLOWING MUST BE CHANGED:                           *
 70 .¦* 1.  IF THE KEY IS NUMERIC DELETE THE TEXT                *
 80 .¦*     STATEMENT FOR INQUIRY_KEY                           *
 90 .¦* 2.  SET THE NUMBER_RECORDS FIELD TO THE NUMBER           *
100 .¦*     OF RECORDS ON THE SCREEN TO BE USED.                *
110 .¦* 3.  INSERT THE PROPER SCREEN AND FILE INFORMATION.       *
120 .¦* 4.  DELETE THE FILE/ACCESS STATEMENTS NOT USED.          *
130 .¦* 5.  IF THIS PROGRAM IS TO CHAIN TO ANOTHER PROGRAM,      *
140 .¦*     FILL IN CHAIN_NAME, ELSE LEAVE IT BLANK.            *
150 .¦*                                                         *
160 .¦*************************************************************
170 .¦
180 .TEXT INQUIRY_KEY(100)
190 .NUMBER_RECORDS=1
200 .SCREEN MAP("???????????????")
210 .FILE
  RECORD("???????????????","???????????????",NUMBER_RECORDS)
220 .ACCESS
  RECORD("???????????????","???????????????",NUMBER_RECORDS)
230 .CHAIN_NAME=""
240 .¦
250 .¦
260 .UNTIL MAP="CANCEL" OR RECORD="END"
270 ..CLEAR MAP
280 ..GET RECORD(INQUIRY_KEY)LEVEL=1
290 ..COUNT=1
300 ..WHILE COUNT<NUMBER_RECORDS AND RECORD<>"END"
310 ...COUNT=COUNT+1
320 ...GET RECORD LEVEL=COUNT
330 ..END
```

```
340 ..CONVERSE MAP:OBTAIN INQUIRY_KEY
350 ..IF MAP="ALTER" OR MAP="PF1"
360 ...COUNT=1
370 ...WHILE COUNT<=NUMBER_RECORDS
380 ....WHEN AID(COUNT)="A"
390 .....UPDATE RECORD LEVEL=COUNT
400 ....WHEN AID(COUNT)="I"
410 .....INSERT RECORD LEVEL=COUNT
420 ....WHEN AID(COUNT)="D"
430 .....DELETE RECORD LEVEL=COUNT
440 ....END
450 ....COUNT=COUNT+1
460 ...END
470 ..END
480 .END
490 .IF SIZE(CHAIN_NAME)>ZERO
500 ..CHAIN CHAIN_NAME
510 .END
520 EXIT
```

SKELETON_MENU1 program

The following skeleton menu program uses your screen design. It is available on the EXAMPLES library:

```
 10 ENTRY SKELETON_MENU1
 20 .¦*********************************************************
 30 .¦*                                                       *
 40 .¦* TO USE THIS AS A SKELETON TO CREATE MENU PROGRAMS,     *
 50 .¦* THE FOLLOWING MUST BE CHANGED:                        *
 60 .¦* 1.  CREATE YOUR MENU SCREEN WITH ONE NUMERIC FIELD     *
 70 .¦*     CALLED OPTION.                                    *
 80 .¦* 2.  INSERT THE PROPER SCREEN INFORMATION.             *
 90 .¦* 3.  REMOVE THE REMARKS SYMBOL FROM THE BEGINNING      *
100 .¦*     OF EACH SELECTION CRITERIA TO BE ACTIVATED.       *
110 .¦* 4.  FILL IN THE CHAIN NAME OF EACH ACTIVE OPTION.     *
120 .¦*                                                       *
130 .¦*********************************************************
140 .¦
150 .SCREEN MAP("???????????????")
160 .¦
170 .¦
180 .CONVERSE MAP
190 .WHILE MAP<>"CANCEL"
200 ..WHEN MAP="PF1" OR OPTION=1
210 ...¦CHAIN"?????????????"
220 ...¦WHEN MAP="PF2" OR OPTION=2
230 ...¦CHAIN"?????????????"
240 ...¦WHEN MAP="PF3" OR OPTION=3
250 ...¦CHAIN"?????????????"
260 ...¦WHEN MAP="PF4" OR OPTION=4
270 ...¦CHAIN"?????????????"
280 ...¦WHEN MAP="PF5" OR OPTION=5
290 ...¦CHAIN"?????????????"
300 ...¦WHEN MAP="PF6" OR OPTION=6
310 ...¦CHAIN"?????????????"
320 ...¦WHEN MAP="PF7" OR OPTION=7
330 ...¦CHAIN"?????????????"
```

```
340 ...¦WHEN MAP="PF8" OR OPTION=8
350 ...¦CHAIN"?????????????"
360 ...¦WHEN MAP="PF9" OR OPTION=9
370 ...¦CHAIN"?????????????"
380 ...¦WHEN MAP="PF10" OR OPTION=10
390 ...¦CHAIN"?????????????"
400 ...¦WHEN MAP="PF11" OR OPTION=11
410 ...¦CHAIN"?????????? ???"
420 ...¦WHEN MAP="PF12" OR OPTION=12
430 ...¦CHAIN"?????????????"
440 ..END
450 ..CONVERSE MAP
460 .END
470 EXIT
```

SKELETON_MENU2 program

The following is a generic menu program without a screen that is available on the EXAMPLES library:

```
 10 ENTRY SKELETON_MENU2
 20 .SCREEN MAP("EXAMPLES:SKELETON_MENU2")
 30 .TEXT CHAIN_NAME(12,33)
 40 .¦*********************************************************
 50 .¦*                                                       *
 60 .¦* TO USE THIS AS A SKELETON TO CREATE MENU PROGRAMS,     *
 70 .¦* THE FOLLOWING MUST BE CHANGED:                        *
 80 .¦* 1.  FILL IN THE APPROPRIATE HEADING TO BE DISPLAYED    *
 90 .¦*     ON THE SCREEN.  (MAXIMUM=60 CHARACTERS)           *
100 .¦* 2.  FILL IN THE APPROPRIATE MESSAGE TO BE DISPLAYED    *
110 .¦*     FOR EACH ACTIVE OPTION.  (MAXIMUM=12)             *
120 .¦* 3.  FILL IN A CHAIN NAME FOR EACH ACTIVE OPTION.       *
130 .¦*                                                       *
140 .¦*********************************************************
150 .¦
160 .¦
170 .HEADING=""
180 .¦
190 .OPTION_MESSAGE(1)="....................................1"
200 .CHAIN_NAME(1)="?????????????"
210 .OPTION_MESSAGE(2)="....................................2"
220 .CHAIN_NAME(2)="?????????????"
230 .OPTION_MESSAGE(3)="....................................3"
240 .CHAIN_NAME(3)="?????????????"
250 .OPTION_MESSAGE(4)="....................................4"
260 .CHAIN_NAME(4)="?????????????"
270 .OPTION_MESSAGE(5)="....................................5"
280 .CHAIN_NAME(5)="?????????????"
290 .OPTION_MESSAGE(6)="....................................6"
300 .CHAIN_NAME(6)="?????????????"
310 .OPTION_MESSAGE(7)="....................................7"
320 .CHAIN_NAME(7)="?????????????"
330 .OPTION_MESSAGE(8)="....................................8"
340 .CHAIN_NAME(8)="?????????????"
```

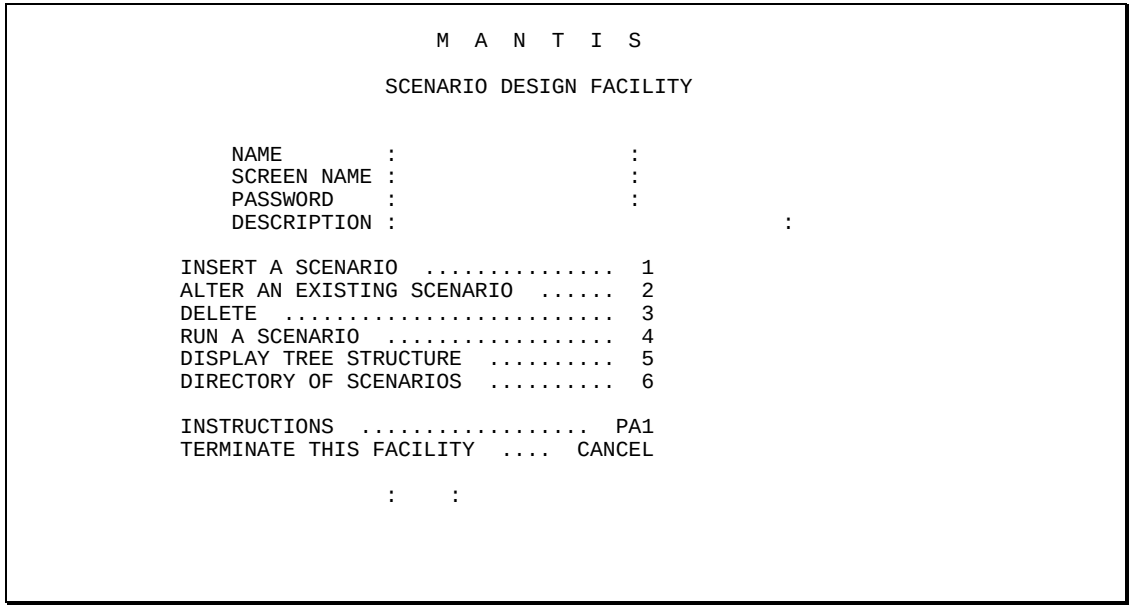
```
350 .OPTION_MESSAGE(9)="....................................9"
360 .CHAIN_NAME(9)="?????????????"
370 .OPTION_MESSAGE(10)="...................................10"
380 .CHAIN_NAME(10)="?????????????"
390 .OPTION_MESSAGE(11)="...................................11"
400 .CHAIN_NAME(11)="?????????????"
410 .OPTION_MESSAGE(12)="...................................12"
420 .CHAIN_NAME(12)="?????????????"
430 .¦
440 .¦
450 .PAD HEADING ALL
460 .CONVERSE MAP
470 .WHILE MAP<>"CANCEL"
480 ..IF MAP(1,2)=”PF”
490 ...OPTION=VALUE(MAP)
500 ..END
510 ..IF OPTION>=1 AND OPTION<=12
520 ...IF CHAIN_NAME(OPTION)<>””
530 ....CHAIN CHAIN_NAME(OPTION)
540 ...END
550 ..END
560 ..OPTION=ZERO
570 ..CONVERSE MAP
580 .END
590 EXIT
```

Portability considerations

Because MANTIS Run System entities are not stored on the MANTIS file, portability is not an issue. However, Run System facilities on MANTIS for the IBM mainframe are not exactly the same as those available on MANTIS for Windows, mainly because of the file support available.

Scenario facility

Scenario provides you with a facility for defining a system flow during the design phase of your application. You can define and print your entire application scenario structure before you create the screens, files, or prompters for your application. When you select the Design a Scenario option from the MANTIS Facility Selection menu, the following menu displays:



Provide information for the following fields:

NAME

Description *Required*. Specifies the name of your scenario.

Format 1- to 16-character alphanumeric symbolic name.

SCREEN NAME

Description *Optional*. Specifies the name of the screen you want to select within the given scenario.

Default The scenario name.

Format 1- to 16-character alphanumeric symbolic name.

Considerations

- When creating or inserting a scenario, this should be the highest-level screen in the scenario hierarchy.
- Once this field is saved, it cannot be changed.

PASSWORD

Description *Optional*. Supplies a password if you want to password-protect the scenario.

Format 1–16 alphanumeric characters.

Consideration Once this field is saved, it cannot be changed.

DESCRIPTION

Description *Optional*. Describes the scenario.

Format 1- to 28-character alphanumeric text string.

Consideration Once this field is saved, it cannot be changed.

The following table lists the options available on the Scenario Design Facility menu and other subordinate menus as needed:

This option	Enables you to. . .	See
Insert or Alter a Scenario	Define a new scenario or change an existing scenario.	"Insert or alter a scenario" on page 236.
Data Definition	Associate data with any definition.	"Data definition" on page 240.
Delete	Delete a portion of a scenario.	"Delete" on page 243.
Run a Scenario	Execute the named scenario.	"Run a scenario" on page 245.
Display Tree Structure	View or print a tree diagram representing the scenario.	"Display tree structure" on page 247.
Directory of Scenarios	View or print a listing of all your scenarios.	"Directory of scenarios" on page 248.

Insert or alter a scenario

When you select the Insert a Scenario option from the Scenario Design Facility menu, the following screen displays:

```
SCENARIO   : nnnn                PARENT SCREEN: nnnn              LEVEL: nn

SCREEN NAME: nnnn                     EXIT KEY:                HELP KEY:
FILE NAME  :
KEY   SCREEN           PROGRAM          KEY  SCREEN           PROGRAM
ENTER                                   PF11
CLEAR                                   PF12
PA1                                     PF13
PA2                                     PF14
PF1                                     PF15
PF2                                     PF16
PF3                                     PF17
PF4                                     PF18
PF5                                     PF19
PF6                                     PF20
PF7                                     PF21
PF8                                     PF22
PF9                                     PF23
PF10                                    PF24



       PRESS ENTER TO UPDATE, CANCEL TO TERMINATE, PA1 FOR HELP, PF1 TO COPY
```

When you select the Alter an Existing Scenario option, the Scenario Definition menu will also appear. Any existing data for the named screen within the named scenario will appear on the screen.

MANTIS maintains the following entries:

SCENARIO

Description The name of the scenario you selected from the Scenario Design Facility menu.

PARENT SCREEN

Description Specifies the name of the screen that is one level above the current screen in the application hierarchy. This field will be blank if the current screen is the highest level screen in this scenario.

LEVEL

Description Specifies the level of the current screen in the application hierarchy. If the current screen is the highest level screen in the scenario, the LEVEL is 1.

Consideration The lower the level is in the hierarchy, the higher the level number.

SCREEN NAME

Description Specifies the name of the screen you are currently defining or altering in your scenario hierarchy.

Supply the following information:

EXIT KEY

Description *Required*. Specifies the key to press to return to the next higher level as you move up in the hierarchy.

Default CANCEL key.

Format Enter one of the keys listed in the KEY column of the screen illustration at the beginning of this section (such as ENTER, CLEAR, PA1, PA2, PF1).

HELP KEY

Description *Optional*. Specifies the key to press to obtain HELP information for the particular screen in the application.

Format Enter one of the keys listed in the KEY column of the screen illustration at the beginning of this section (such as ENTER, CLEAR, PA1, PA2, PF1).

Consideration HELP information appears in a MANTIS prompter. The prompter must have the same name as that assigned in the SCREEN NAME field. If the prompter does not exist, you will receive an error message when you try to use the HELP KEY while running the scenario.

FILE NAME

Description *Optional*. Specifies the name of a MANTIS file or external file view if you want to associate data with the screen defined in SCREEN NAME. When you press ENTER, you will be presented with the Data Definition screen (see "Data definition" on page 240).

Format 1- to 16-character alphanumeric name.

Consideration TOTAL file views cannot be used on a personal computer. They must be copied to the mainframe (using the Universal Export Facility, discussed in "Transfer Facility" on page 323) and used there.

SCREEN

Description *Optional*. Supplies a MANTIS screen name opposite any of the listed function keys. You will press the associated key to branch to the named screen (lower in hierarchy) from the current one.

Format 1- to 16-character alphanumeric name.

Considerations

- If the named MANTIS screen does not exist, you will receive an error message when you press the associated function key while running the scenario.
- You cannot enter the same screen name more than once on the Scenario Definition menu. If you want to use a screen design more than once, you must save the screen with different names so you can provide a new name for each occurrence.

PROGRAM

Description *Optional*. Supplies a MANTIS program name opposite any of the listed function keys. You will press the associated key to branch to the named program from the current screen.

Format 1- to 16-character alphanumeric name.

Considerations

- If the named MANTIS program does not exist, you will receive an error message when you run the scenario.
- The MANTIS program design should have the following general format:

```
10 ENTRY PROGX (SCENARIOZ,SCREENZ,PROGZ)
20 TEXT SCENARIOZ(16),SCREENZ(16),PROGZ(16)
.
.
9990 CHAIN"CONTROL:SCENARIO-RUN",SCENARIOZ,SCREENZ,PROGZ
9999 EXIT
```

  Where PROGX is the name of the MANTIS program to which you will be transferred and SCENARIOZ, SCREENZ, and PROGZ are any MANTIS symbolic names.

To copy an existing scenario, move the cursor to the lower left corner of the Scenario Definition menu (see the illustration in “Insert or alter a scenario” on page 236). Type in the name of the scenario you wish to copy and press PF1. The specified scenario will be copied onto the current scenario definition screen.

Data definition

The Data Definition screen, shown in the following example, displays when you provide data in the File Name field on the Scenario Definition screen and press ENTER. Use this screen to associate data with any screen in the scenario.

```
                              M  A  N  T  I  S


            DATA DEFINITION FOR SCENARIO nnnn

    SCREEN NAME ..................... : nnnn                 :
    NUMBER OF RECORDS ON SCREEN ... :    :

    FILE OR VIEW NAME ............. : nnnn                  :
    FILE OR VIEW PASSWORD ......... :                   :
    TYPE (MANTIS,DOS) ....... :          :
    KEY TYPE (NUMERIC,TEXT, KANJI) ....... :         :

                                FUNCTION KEYS

                         DATA ENTRY  ...... :         :
                         BROWSE  .......... :         :



         PRESS ENTER TO UPDATE; CANCEL TO EXIT; PA1 FOR INSTRUCTIONS
```

MANTIS maintains the following entries:

DATA DEFINITION FOR SCENARIO

Description The name of the current scenario.

SCREEN NAME

Description The MANTIS screen which is used to enter and/or browse the data.

Supply the following information:

NUMBER OF RECORDS ON SCREEN

Description *Optional.* Supplies the total number of records appearing on the screen named in SCREEN NAME. (The total number is the original line plus the total number of repeat occurrences.)

Default 1

Format 1- to 2-digit number.

FILE OR VIEW NAME

Description The MANTIS file or external file view.

FILE OR VIEW PASSWORD

Description *Optional.* Supplies the password for this file or view.

Default No password.

Format 1- to 16-character alphanumeric password.

Considerations

- If you want to use the DATA ENTRY option on the Data Definition for Scenario menu, you must enter the file password for deleting/inserting; otherwise, supply the password for viewing.
- This must be the same password defined in the profile of the MANTIS file or view.

TYPE

Description *Optional.* Indicates the type of file or view used. Only the first character is required.

Default M MANTIS file.

Options M MANTIS file.

D External file.

KEY TYPE

Description *Required*. Specifies the type of the primary key.

Options

N Numeric (BIG or SMALL)

T TEXT

K KANJI

DATA ENTRY

Description *Optional*. Specifies the key that you will use to indicate that you want to enter data into the file.

Format One of the keys listed in the KEY column of the screen illustration in "Insert or alter a scenario" on page 236 (such as ENTER, CLEAR, PA1, PA2, PF1).

BROWSE

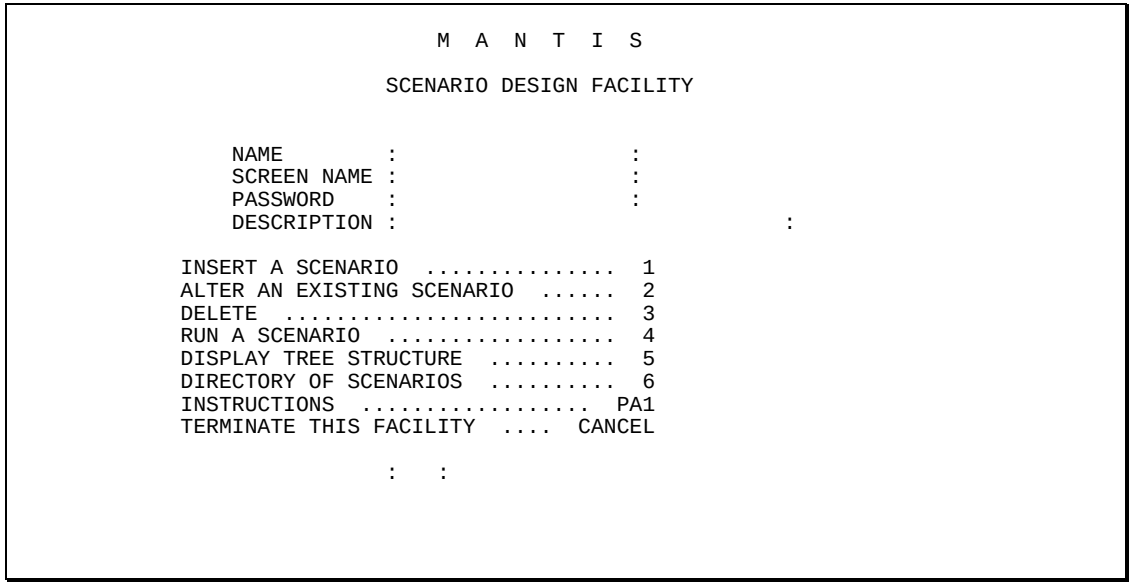
Description *Optional*. Specifies the key that you will use to initiate a browse of the data in the file. Note that when you run a scenario, headings alone will appear on the first browse screen. Press the BROWSE key to see the data.

Format One of the keys listed in the KEY column of the screen illustration in "Insert or alter a scenario" on page 236 (such as ENTER, CLEAR, PA1, PA2, PF1).

Press CANCEL to terminate the Data Definition screen.

Delete

The Delete option deletes part of a scenario or an entire scenario. When you select this option from the Scenario Design Facility menu, the following screen displays:



NAME

Description *Required*. Specifies the name of the scenario you want to delete.

Considerations

- To delete a portion of a scenario, enter the name of the scenario (if it differs from the one currently on the screen).
- To delete an entire scenario, supply the name of the scenario (if it differs from the one currently on the screen) and the name of the screen which is the top level for that scenario.

SCREEN NAME

Description *Optional*. Specifies the name of the screen you want to delete.

Default Scenario name.

Consideration All subordinate screens of the named screen in the scenario will also be deleted.

PASSWORD

Description *Required*. Specifies the password if the scenario has one.

DESCRIPTION

Description *Optional*. Describes the scenario.

You may terminate the deletion by pressing CANCEL.

A confirmation message will appear to let you know that the scenario has been deleted.

Run a scenario

Use the Run a Scenario option on the Scenario Design Facility menu to test your current scenario. When you select the Run option, your scenario will automatically run.

When you run a scenario, a screen with the heading “Diagnostics for Scenario ‘*scenario-name*’” lists the error messages for your scenario. MANTIS lists the error messages one at a time. The error messages are documented in “Messages” on page 435. Press any action key, and the scenario will continue running.

Exit using the appropriate exit key already defined to the scenario.

You may also execute a scenario from the MANTIS Facility Selection menu. When you select the Run a Scenario option from this menu, the following screen displays:

```
                          M  A  N  T  I  S

                        SCENARIO  FACILITY



 SCENARIO NAME:
 MAIN SCREEN  :                  (IF DIFFERENT)









PRESS ENTER TO EXECUTE THE SCENARIO .. CANCEL TO EXIT THIS FACILITY
```

SCENARIO NAME

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

Format 1- to 16-character alphanumeric symbolic name.

MAIN SCREEN

Description *Optional*. Specifies the name of the MANTIS screen which will begin the execution of the scenario.

Default The current scenario name.

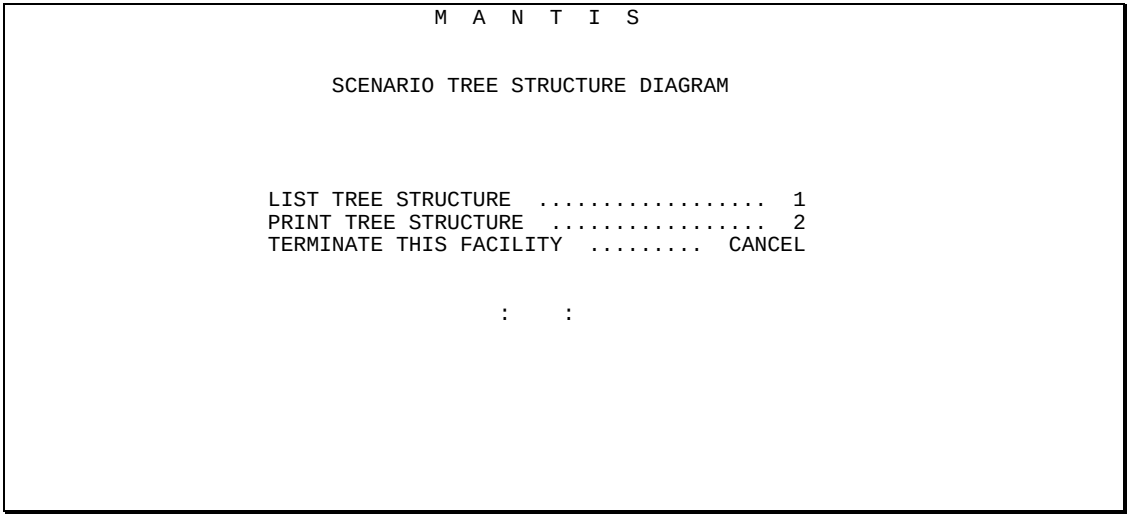
Format 1- to 16-character alphanumeric symbolic name.

Consideration The screen can be at any level within the scenario.

Press ENTER to run the named scenario.

Display tree structure

This option enables you to view or print a tree structure diagram of a particular scenario. When you select this option, the following screen displays:

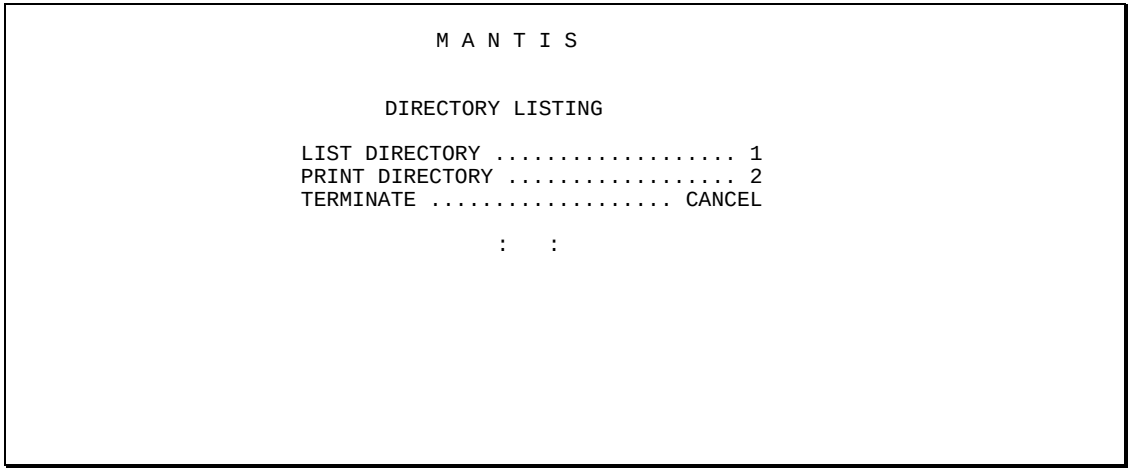


To return to the Scenario Design Facility Menu, press CANCEL.

When List Tree Structure is selected, only the tree structure of the screens associated with that Scenario are displayed.

Directory of scenarios

The Directory of Scenarios option allows you to view or print a list of your scenarios. When you select this option, the following screen displays:



Press CANCEL to return to the Scenario Design Facility menu.

When List Tree Structure is selected, only the tree structure of the screens associated with that Scenario are displayed.

7

Program design

The Program Design Facility provides a menu of options to create, maintain, view, print, bind, unbind, and edit MANTIS programs. When you select the Design a Program option from the MANTIS Facility Selection menu (see the illustration in “Signing on to MANTIS” on page 41) the Program Design Facility menu displays, as shown under “Program design facility menu” on page 250 (you always select an option of Program Design from this menu).

Program design facility menu

The following screen shows the MANTIS Program Design Facility menu:

```
                              M  A  N  T  I  S

                         PROGRAM DESIGN FACILITY

                    UPDATE PROGRAM  .............(S).......  1
                    DIRECTORY OF PROGRAMS  ................  2
                    LIBRARY FUNCTIONS  ....................  3
                    PRINT PROGRAM  ..............(L).......  4
                    BIND PROGRAM  ...............(B).......  5
                    UNBIND PROGRAM  .............(U).......  6
                    PURGE PROGRAM  ..............(P).......  7
                    PURGE PROGRAM SOURCE  .......(N).......  8
                    EDIT PROGRAM  ...............(E).......  9
                    TERMINATE THIS FACILITY  .........  CANCEL


  CURRENT PROGRAM :
                                       :    :
```

To create and modify your program, you can use the MANTIS Line Editor, automatically initiated in the Update Program option, or your personal computer text editor, which you can initiate using the EDIT PROGRAM using option (9) or the EDIT command in the Update Program option (see “MANTIS commands” on page 261). An external editor provides an alternative to the Line Editor’s editing commands. In either case, the Line Editor is used to test and debug the program.

Enter data described as follows:

(: ... :)

Description *Optional.* Specifies the name of a program(s) with which you want to work.

Format MANTIS program name or wildcard specification to indicate a set of programs whose names correspond to a particular set of characters where:

* Represents an indefinite number of generic characters. For example, *A* indicates all programs whose names contain an A.

? Represents a single generic character. PROG??? designates a program(s) whose name begins with PROG and ends with any three characters.

Considerations

- If you leave the field blank, the option you select from the menu (e.g., bind and save) is performed on the prorgam currently in the work area.
- If you specify a single program, the option you select from the menu is performed on that program. If you select the Update Program or Edit Program options, the program you specify becomes the current program.
- If you specify multiple programs (via wildcard specification), MANTIS displays the Directory of Programs, starting with the first program that fits the specification. The SEL fields (in the Program Directory Selection display) of all programs fitting the wildcard specification have the abbreviation of the selected option (e.g., B for bind).
- You cannot specify a program in another user's library from this menu. If you want to perform a program design function on a program from another library, either select the Update Program option and use the LOAD command, or select the Library Functions option and use the FETCH option.

Current program

Description MANTIS displays the name of the program currently in the work area.

Consideration The default program name (the user name) is displayed in this field when you first select Design a Program from the MANTIS Facility Selection menu. You cannot update this field.

To create a new program, first use the Update Program option (see "Update a program" on page 254) to write the program, and then use the Library Functions option (see "Library functions" on page 313) to save the program.

To update an existing program, do one of the following:

- Select the Update Program option and use the LOAD command (see "MANTIS commands" on page 261) to retrieve the program into your work area.
- Select the Library Functions option (see "Library functions" on page 313), fetch the program from your library into your work area, and proceed with the Update Program option.

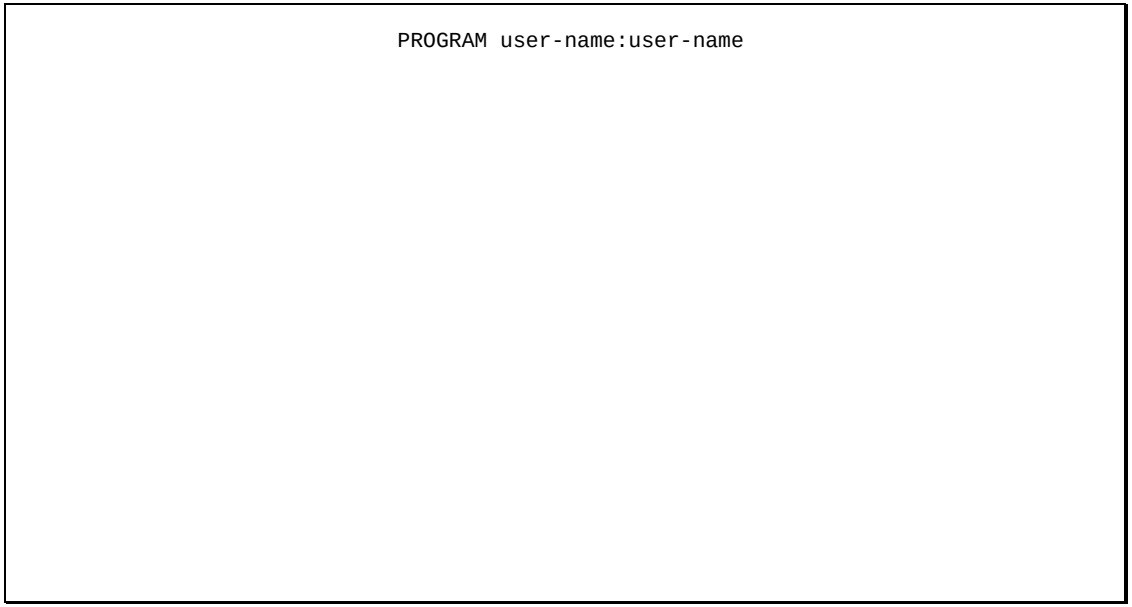
You can move among the options listed on this screen without losing the program currently in your work area. However, remember to save your program or any updates, by using the SAVE or REPLACE commands (see "MANTIS commands" on page 261) or by using the Library Functions (see "Library functions" on page 313), before exiting from the Program Design Facility to the Facility Selection menu. If you exit from the Program Design Facility without first saving current changes, MANTIS asks you to confirm your action.

The remainder of this chapter discusses the Program Design Facility options. If you are creating a new program, proceed through the chapter. If you are updating an existing program, go directly to the section(s) you need. The following table provides an overview of the options in Program Design and where each option is discussed:

This option	Enables you to. . .	See
Update Program	Initiate MANTIS programming mode, allowing you to create, edit, and run a MANTIS program.	"Update a program" on page 254.
Directory of Programs	View an alphabetic listing of all programs in your library, and select programs for update, purging (deletion), binding, unbinding, deletion of program source, printing, or editing.	"Directory of programs" on page 309.
Library Functions	Save, replace, fetch, or delete a program.	"Library functions" on page 313.
Print Program	Print a program.	"Print a program" on page 317.
Bind Program	Create a more efficient version of your MANTIS program that is stored with your program code.	"Bind a program" on page 318.
Unbind Program	Delete the bound version of your program.	"Unbind a program" on page 319.
Purge Program	Purge a program (and bound version, if it exists) from your library.	"Purge a program" on page 320.
Delete Program Source	Delete unbound version of a bound program from your library.	"Delete the program source" on page 321.
Edit Program	Invoke an external editor.	"Edit a program" on page 322.

Update a program

The Update Program option initiates MANTIS programming mode, in which you can create, edit, and run a MANTIS program. Programming mode is the scroll mode discussed in “Scroll mode” on page 31. MANTIS scrolls up previously entered lines and repositions the cursor on the bottom line. To enter MANTIS programming mode, select the Update Program option from the Program Design Facility menu (see “Program design facility menu” on page 250). The following screen displays:



If you have specified a program name in the Program Name field, MANTIS loads that program before it enters programming mode. If the program does not exist, MANTIS displays the Programming Directory Selection with an S (for select) in the SEL field. When you press ENTER, MANTIS loads the selected program.

If you save a new program or retrieve an existing program, your *user-name* appears at the top of the screen. When you save or retrieve a program, the name of that program appears at the top of the screen. MANTIS does not display your password.

If you clear the work area (using the NEW command) or load a program from an external DOS file (using the LOAD FILE command), your *user-name* reappears an the top line. If your program chains to another program, the name of the second program appears.

If you retrieve a program from another user's library, the top line of the screen displays those user and program names as follows:

```
PROGRAM ==> user-name:program-name
```

The following sections describe the basic elements of the MANTIS programming language and provide general information on creating and maintaining your MANTIS programs. Program design commands are described in detail in "MANTIS commands" on page 261.

Programming fundamentals

The MANTIS language consists of statements, program lines, and commands. A statement consists of a reserved word and, if necessary, one or more operands. A statement can be part of a program line (saved with the program) or can be issued for immediate execution within programming mode (not saved with the program). A program line consists of a line number followed by one or more statements. Statements and program lines are describes in *MANTIS for Windows Language Reference Manual*, P19-2302.

A command is a special form of statement that can only be issued for immediate execution within programming mode. Commands do not have a line number and are not saved with the program. Commands are typically used to edit, maintain, and execute programs. MANTIS commands are explained in this chapter.

Some MANTIS reserved words can be used as both statements and commands (such as SHOW), but others can be used only as statements (such as CHAIN) or only as commands (such as QUIT). You do not need to remember which reserved words can be used as statements and commands; MANTIS returns an error message if you omit a line number on a statement or try to enter a line number on a command.

The following example illustrates how SHOW can be used as both a statement and a command:

```
10 ENTRY COMPOUND
20 SHOW "WHAT IS THE CAPITAL AMOUNT?" ---- statement
30 OBTAIN INVESTMENT
50 EXIT
RUN
WHAT IS THE CAPITAL AMOUNT?
1400
SHOW INVESTMENT+650           ---- command
2050
```

Create a program

Create a program by typing line numbers and statements at the bottom of the screen. After you type a statement, press ENTER. MANTIS scrolls up previously entered lines and repositions the cursor on the bottom line. (Refer to the *MANTIS for Windows Language Reference Manual*, P19-2302, for information on the programming statements MANTIS offers.)

You can add MANTIS statements among those statements you have already entered by specifying a line number between the lines where you want the new statement to appear.

Save a program

To store a program in your MANTIS library, use the SAVE command in programming mode, or the SAVE option in Library Functions. To replace an existing program, use the REPLACE command in programming mode, or the REPLACE option in Library Functions.

Run a program

You may execute a partial or complete program at any time by entering the RUN command. MANTIS executes your program from the first to the last coded statement. If MANTIS encounters an error in a running application, it returns the name of the program as well as the line number where the error was found.

The heading on the scroll map disappears when you RUN a program and reappears when the program terminates.

Retrieve a program

You can retrieve a program from the library by using the LOAD command (see “MANTIS commands” on page 261) or by using the FETCH option in Library Functions (see “Library functions” on page 313). When MANTIS retrieves the program, it displays the new program name at the top of the screen. You can also retrieve a program through the Program Design Facility screen.

Display a program

You can enter the LIST command (see "MANTIS commands" on page 261) to display a listing of your program statements. MANTIS automatically indents all statements to indicate their relative position in the program's nesting hierarchy.

Alter statements

To alter a statement, do the following:

- Enter the statement number with the new statement at the bottom of the screen and press ENTER.
- Use the ALTER command (described in "MANTIS commands" on page 261). MANTIS displays the specified statement(s) one at a time at the bottom of the screen. You can move the cursor and change any portion of your statement without reentering the entire line. Press ENTER after changing each statement.
- Use the SELECT, SELUP, and SELDOWN keys, as described on the following page, under Additional Functions.

Delete statements

To delete lines from your program:

- Enter only the line number at the bottom of the screen and press ENTER.
- Use the ERASE command to delete a block of statements (see "MANTIS commands" on page 261).

Renumber statements

To renumber your statements and leave room for future insertions, use the SEQUENCE command (see “MANTIS commands” on page 261). The following example shows how SEQUENCE renumbers a program (the default increment value is 10):

```
10 ENTRY COMPOUND
11 .¦ THIS IS AN EXAMPLE
20 .SHOW “WHAT IS THE CAPITAL AMOUNT?”
21 .OBTAIN SAVINGS
30 EXIT
SEQUENCE
LIST
10 ENTRY COMPOUND
20 .¦ THIS IS AN EXAMPLE
30 .SHOW “WHAT IS THE CAPITAL AMOUNT?”
40 .OBTAIN SAVINGS
50 EXIT
```

Additional functions

In programming mode, you can perform these special functions:

- The @ (at character) redirects input by telling MANTIS to read keyboard input from a specified file. When MANTIS reaches the end of the file, it resumes obtaining input from the keyboard. You can use this feature to avoid repeatedly entering the same sequence of commands or input while testing a program. Enter this command in the following format:

  `@ (`*`file-name`*`)`

- REFRESH redisplays the current screen.

- SELECT copies a line from the scroll map for you to modify. MANTIS displays the specified line in the Unsolicited Input field. You can move the cursor and change any portion of your line without reentering the entire line.

Note that after issuing a PERFORM statement or command, non-MANTIS output may remain on your screen. In this case, pressing SELECT will not copy what you see on your screen. To see what you are copying from the scroll map, press REFRESH before pressing SELECT.

- SELUP copies the previous input line from the scroll map to the Unsolicited Input field.
- SELDOWN copies the next input line from the scroll map to the Unsolicited Input field.
- The $ (dollar sign) invokes an operating system command, as does the PERFORM command. Enter this command in the following format:

```
$ (operating system command)
```

Exit from programming mode

You must save or replace your program before you exit from the Program Design Facility or your updated program will be lost. If you exit from programming mode using the QUIT command, you return to the Program Design Facility menu and your program remains in the work area.

Terminate a program

MANTIS terminates a program when:

- It executes a STOP, RETURN, or EXIT statement.
- It encounters no more statements.
- It encounters an error.
- You press CTRL-BREAK.
- You enter KILL in the Key Simulation field (or press the KILL key) in response to program input.

“Messages” on page 435 lists the warnings and error messages you may receive while you are in programming mode. The rest of this section discusses the MANTIS commands. The statements used to write a MANTIS program are in *MANTIS for Windows Language Reference Manual*, P19-2302.

MANTIS commands

This section describes the MANTIS commands and provides the following information for each parameter of the commands:

Description	Description of the parameter
Default	Default value, if any, of the parameter.
Format	Required format of the parameter.
Example	Example of the command.
Considerations	Any special limitations, considerations, and guidelines for the parameter.

The following table lists the MANTIS commands, which are described on the following pages in alphabetical order:

Command	Enables you to. . .	See
ALTER	Present specified program line(s) for modification.	“ALTER” on page 263.
BIND*	Bind or unbind a program.	“BIND” on page 266.
CHANGE	Replace occurrences of a string of characters in a range of program lines.	“CHANGE” on page 268.
CLEAR	Clear program breakpoints.	“CLEAR” on page 271.
COPY	Specifies that MANTIS should copy portions of a program into the work area.	“COPY” on page 272.
DISPLAY	Display the values of MANTIS variables.	“DISPLAY” on page 275.
DOWN	Move down to a lower-level external sub-routine.	“DOWN” on page 277.

* You can also use this command as a statement, as documented in *MANTIS for Windows Language Reference Manual*, P19-2302.

Command	Enables you to. . .	See
EDIT*	Invoke an external text editor.	"EDIT" on page 278.
ERASE	Delete one or more program lines.	"ERASE" on page 281.
GO	Resume execution from a program breakpoint.	"GO" on page 283.
HELP	Display explanatory information for an error message, command, or statement.	"HELP" on page 285.
LIST	List all or part of the program in the work area.	"LIST" on page 287.
LOAD	Retrieve a program from a library or PC file into the work area.	"LOAD" on page 289.
NEW	Clear the work area.	"NEW" on page 291.
PURGE	Purge a program from your library but not from the work area.	"PURGE" on page 292.
QUIT	Terminate the programming mode and return to the Program Design Facility Menu.	"QUIT" on page 293.
REPLACE	Replace a program in your library or in a PC file with the program currently in the work area.	"REPLACE" on page 294.
RUN	Execute the program currently in the work area.	"RUN" on page 296.
SAVE	Copy the program currently in the work area into your library or a PC file.	"SAVE" on page 298.
SEQUENCE	Renumber the lines of the program in the work area.	"SEQUENCE" on page 300.

* You can also use this command as a statement, as documented in *MANTIS for Windows Language Reference Manual*, P19-2302.

Command	Enables you to. . .	See
SET	Set breakpoints in the current program.	"SET" on page 302.
SHOW	Display current program breakpoints or the next program to be executed.	"SHOW" on page 304.
UP	Move up to a higher-level external subroutine.	"UP" on page 305.
USAGE	Show where a MANTIS keyword, symbolic name, or string is used in your program.	"USAGE" on page 306.

ALTER

Use the ALTER command to modify one or more lines of a MANTIS program without retyping the line(s). When you use the ALTER command, MANTIS displays the specified lines one at a time on the bottom line of the screen for you to alter. MANTIS does not indicate the nesting levels when displaying the lines.

ALTER *begin*[,*end*]

begin

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

Format Arithmetic expression that evaluates to a line number in your program.

Considerations

- The line number you specify must be a valid line number in your program.
- MANTIS applies only the integer portion of begin.

end

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

Default Value of begin parameter.

Format Arithmetic expression that evaluates to a line number between 1 and 99999999.

Considerations

- The line number you specify does not have to be a line number in the program. For example, you can enter ALTER 10,99999 to alter all program lines.
- MANTIS applies only the integer portion of end.
- If end is less than begin, no lines will be altered.

Example

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

General considerations

- MANTIS displays all lines with line numbers greater than or equal to begin and less than or equal to end.
- If you supply only begin, the same value is assumed for end. So, to alter one line, you need to specify that line number only once.
- You can escape from ALTER mode without altering any more lines by entering a command (which has no line number) in place of the next line displayed by ALTER.
- You can copy a line by using the ALTER command to display the line at the bottom of the screen and then changing the line number.
- You can also alter a line without using the ALTER command by reentering it entirely, including the line number. You can also alter a line by moving the cursor to the appropriate line and pressing SELECT. The line appears at the bottom of your screen to be altered. To delete a line without using the ALTER command, simply enter the line number with no data. Do not delete the line number, as this cancels the ALTER command.
- MANTIS automatically removes breakpoints from the program when the ALTER command is executed.
- Program lines longer than the width of the scroll output map are truncated before being displayed for editing. You can avoid truncation by editing these lines externally using the EDIT command (how the lines came to be entered originally). The scroll output map width can be altered by the Master User in the Update Configuration File Facility.

BIND

Use the BIND command to convert a program from unbound to bound or bound to unbound format. When you bind a program, MANTIS parses the program and creates a more efficient version of your program and stores it with your program code.

BIND [**ON** | **OFF**]

ON

Description *Optional*. MANTIS performs the binding process for your or the current program. This is the default value.

Consideration MANTIS always executes the bound version of your program, if it exists.

OFF

Description *Optional*. Indicates that you want MANTIS to delete the bound version of your program, leaving the unbound program code.

Example

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

General considerations

- When you run your bound program, MANTIS executes the bound version. When you load the program into your work area to make modifications, MANTIS loads whatever is stored in the MANTIS file (bound or unbound). If you modify the program work area in any way, the program is automatically unbound by MANTIS. You must issue the BIND and REPLACE commands after you modify the program if you want to save the changes. Any MANTIS command or statement that alters the current program work area effectively deletes the bound program.

- MANTIS maintains a statement counter in conjunction with the SLICE and SLOT statements, but the counter is not incremented during execution of the bound version.

- A bound program can DO or CHAIN to an unbound program and vice versa. MANTIS simply executes the bound version, where found.

- Program breakpoints that are set in the unbound version of the program cannot be executed when the bound version is running.

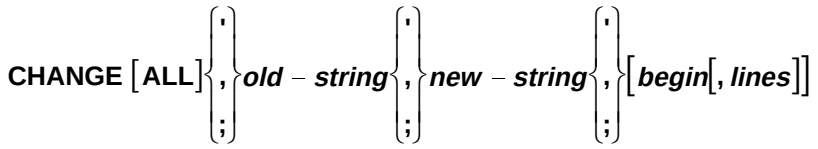
- You can use the GO command to resume execution of a bound program provided that the condition which stopped the program has been corrected without deleting the bound version (e.g., after CTRL-BREAK).

- You may also bind your program with the Bind Program option on the Program Design Facility menu or by entering U in the SEL field on the Program Directory Selection screen.

- You may also unbind your program with the Unbind Program option on the Program Design Facility menu or by entering U in the SEL field on the Program Directory Selection screen.

CHANGE

Use the CHANGE command to replace occurrences of a specified string with a new string over a range of lines.



ALL

Description *Optional*. Specifies that all occurrences of *old-string* on each line are to be replaced.

Consideration If you do not specify ALL, MANTIS replaces only the first occurrence on each line.

' , ;

Description *Required*. Specifies the delimiter to separate the old and new strings.

old-string

Description *Required*. Specifies the string of characters you want to change.

Format Use the delimiter that was specified previously after this string.

new-string

Description *Required*. Specifies the string of characters that is to replace the *old-string*.

Format Use the delimiter that was specified previously after this string.

begin

Description *Optional*. Specifies the first line of the program for MANTIS to start the search-and-replace operation.

Format Arithmetic expression that evaluates to a line number in your program.

Considerations

- If you do not specify begin, MANTIS starts searching at the first line of your program.
- The line number you specify must be a valid line number in your program.

lines

Description *Optional*. Specifies the number of program lines in which to search for *old-string*.

Format Arithmetic expression that evaluates to a number between 1 and 99999999.

Consideration If you do not specify lines, MANTIS searches to the last line in your program.

Example

```
10 ENTRY SAMPLE
20 .SMALL J
30 .WHILE J<10
40 SHOW J:J=J+1
50 .END
60 EXIT
CHANGE 'J'K'20,3
20 SMALL K
30 WHILE K<10
40 SHOW K:J=J+1
CHANGE ALL 'J'K'40
40 SHOW K:K=K+1
```

General considerations

- All changed program lines are listed below the CHANGE command without any nesting periods.
- The *old-string* is compared with the text of the program as it would be listed by the LIST command. The *old-string* is not replaced unless there is an exact match in the program line. Spacing and case must match.
- Any breakpoint is removed from a line when it is modified by a CHANGE command.

CLEAR

Use the CLEAR command to clear program breakpoints.

CLEAR BREAK [*line-number*]

BREAK

Description *Required*. Clears program breakpoints set by SET BREAK.

line-number

Description *Optional*. Specifies the line number where a program breakpoint is to be cleared.

Format Arithmetic expression that evaluates to a line number in your program.

Consideration The line number must be a valid line number in your program.

Example

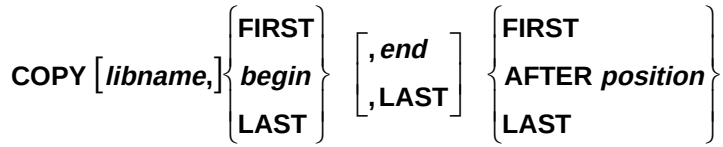
```
CLEAR BREAK 60
```

General considerations

- MANTIS removes the program breakpoint at the specified line number or removes all program breakpoints if no line number is specified.
- CLEAR can also be used as a statement, as documented in *MANTIS for Windows Language Reference Manual*, P19-2302.

COPY

Use the COPY command to copy portions of a program into the work area. The program from which you copy the program lines can be in a library or can be the program currently in the work area.



libname

Description *Optional*. Specifies the library name of the program from which you are copying.

Default Your current program.

Format [*user-name*:]*program-name*

Consideration If the program is in your library, you only need to specify the *program-name*.

FIRST, *begin*, LAST

Description *Required*. Specifies the line in the program where MANTIS should begin copying. *begin* specifies a particular line number in the program. FIRST specifies the first line in the program. LAST specifies the last line in the program.

Considerations

- Choose only one parameter.
- If you specify LAST only, MANTIS copies only the last line in the program.

end, LAST

Description *Optional*. Specifies the line in the program where MANTIS should stop copying. *end* specifies an existing line number in the program. LAST specifies the last line in the program.

Considerations

- Choose only one parameter.
- If you do not specify *end* or LAST, MANTIS copies only the line specified by the preceding parameter.

FIRST, AFTER *position*, LAST

Description *Required*. FIRST tells MANTIS to insert the copied lines before the first line in the program currently in the work area. AFTER *position* specifies the line after which MANTIS should insert the copied lines. LAST tells MANTIS to insert the copied lines after the last line of the program currently in the work area.

Consideration When you specify AFTER *position*, you need not specify an existing line in the program.

Example

```
LIST
  10 ENTRY COMPOUND_INTEREST
  20 .SHOW "WHAT IS THE CAPITAL AMOUNT?"
  30 .OBTAIN SAVINGS
  40 EXIT
COPY SIMPLE_INTEREST,70,80 AFTER 34
LIST
  10 ENTRY COMPOUND_INTEREST
  20 .SHOW "WHAT IS THE CAPITAL AMOUNT?"
  30 .OBTAIN SAVINGS
  35 .SHOW "WHAT IS THE INTEREST?"
  36 .OBTAIN INTEREST
  40 EXIT
```

General considerations

- MANTIS assigns a line number to the first line copied according to FIRST, AFTER, or LAST. The line number increments by one for each subsequent line copied.
- If the assigned line numbers overlap into existing program lines, MANTIS automatically renumbers as many lines as necessary to restore an ascending sequence. If you relied on the original line numbers, you may lose your place in the current program. To reorient yourself, issue the LIST command and scan to the line you need.
- To acquire and modify a subroutine from another library, use COPY followed by an ALTER with range.
- MANTIS removes breakpoints from the program when it executes the COPY command.
- If the program you are copying is in another user's library and its password does not match your current program password, you will be refused access to the program and the copy attempt will terminate.
- The line specified by the first parameter must be less than or equal to the line specified by the second parameter.

DISPLAY

Use the DISPLAY command to display the attributes (e.g., type, value) of specified MANTIS variables.

DISPLAY { ***name*** / **ALL** } ,…

name

Description *Required.* Name specifies the MANTIS variable you want to display.

Format Valid MANTIS variable name.

ALL

Description *Required.* Tells MANTIS to display all variables in your program. If you enter All after a variable name, MANTIS displays all variables defined after that variable. Variables are referenced in the vocabulary in this order:

- In the top-to-bottom occurrence of variables referenced in the program.
- In the chronological order of creation through the complex statements SCREEN, ACCESS, and FILE.

Consideration The All parameter should only be specified once.

Examples

- The following example displays the attributes of variables I, J, and K:

```
DISPLAY I,J,K
```

- The following example displays the attributes of all variables in the program:

```
DISPLAY ALL
```

- The following example displays the attributes of the variable J and those variables defined after J:

```
DISPLAY J,ALL
```

General considerations

- If you use the DISPLAY command with a complex entity (entities that contain other entities, such as screens and files), MANTIS displays all fields defined for that entity (all component variables).
- The following attributes of each variable are displayed:
  - NAME. The name of the variable.
  - TYPE. The type of the variable (BIG, SMALL, TEXT).
  - MAXLEN. The maximum length (number of characters) of a text variable.
  - DIMS. The array dimensions if the variable is an array.
  - VALUE. If the variable is not an array, a single value is displayed, for example, 16 (numeric format), 5:HELLO (text format). For an array, values of all array elements are displayed row by row separated by commas. For file names and access names, the associated status is displayed. For screen names, the value from the Reply field is displayed.
- Variables in a program are undefined until the program is executed.
- Your display may be as large as your full scroll map (the size of your scroll map is set by the Master User). If your scroll map display is larger than your physical screen, you may need to window right or left to view the entire contents.
- Separate multiple variable names with commas.

DOWN

Use the DOWN command to select as the current program an external subroutine at a lower level. You can then list and edit it in the work area.

DOWN [*levels*]

levels

Description *Optional.* Specifies the number of levels down from the current program to the external subroutine.

Default 1

Format Numeric expression that evaluates to a positive number between 1 and 32767.

Example

```
DOWN 2
```

General considerations

- The DOWN command works differently in MANTIS for Windows than it does in MANTIS for the IBM mainframe, where it scrolls toward the end of a program listing.
- The original program has a DOLEVEL of zero. With each nested external DO statement, the DOLEVEL value increases by one. Use DOWN after MANTIS has stopped executing an external subroutine and you have used the UP command to select a higher level routine or the calling program as the current program in the work area. DOWN then allows you to return to a lower level.
- The name of the program that contains the external subroutine at the specified level will appear at the top of the screen.
- If the levels parameter is greater than the number of levels down to the lowest level, MANTIS selects the external subroutine at the lowest level.

EDIT

Use the EDIT command to invoke an external text editor to edit a program.

EDIT [***libname*** [**,** ***password***]]
[**FILE** ***file - spec***]

libname

Description *Optional*. Specifies the name of the program you want to edit if it is in a library.

Format [*user-name*:] *program-name*

Consideration If the program is in your library, you do not need to specify *user-name*.

password

Description *Optional*. Specifies the password used to save the program in the MANTIS library.

Default Password of the program currently in the work area.

Format Password with which the program was last saved.

Considerations

- If the program is in your library, you do not need to specify password.
- If the password specified here does not match the password specified when the program was saved, MANTIS displays an error message instead of loading the program (unless the program is in your own library).

FILE

Description *Optional*. Specifies that you want to edit a program in a DOS file.

file-spec

Description *Optional*. Specifies the name of the DOS file that contains your program.

Format DOS file specification.

Examples

```
EDIT
EDIT EXAMPLE_PROGRAM
EDIT FILE C:RTN123.MAN
```

General considerations

- The EDIT command is not supported by MANTIS for the IBM mainframe.
- When you issue the EDIT command, MANTIS invokes your editor as defined by the environment variable EDITOR or in your configuration file (discussed in *MANTIS for Windows Administration Guide*, P19-2304).
- If you specify EDIT alone, the current program in the work area is written to a temporary PC file, and your editor in then invoked to edit the temporary file. MANTIS copies the edited program back into the work area when you exit from your editor. MANTIS renumbers any program lines whose line numbers are missing or out of sequence and expands tabs according to the setting of the EDITTABS environment variable.
- If you specify EDIT FILE *file-spec*, MANTIS invokes your editor to edit the file. MANTIS copies the edited program back into the work area when you exit from your editor. MANTIS renumbers any program lines whose line numbers are missing or out of sequence and expands tabs according to the setting of the EDITTABS environment variable.
- Upon exiting from the editor, only the program work area is updated, not the version of the program in your MANTIS library. To update the version of the program in your MANTIS library, go back to Library Functions and replace it.
- EDIT can also be used as a statement, as documented in *MANTIS for Windows Language Reference Manual*, P19-2302.

- All breakpoints are removed from the current program when the program is modified by an EDIT command.
- The path used to create the temporary file can be controlled through the TMP environment variable.
- When the edited program is read back into the work area, tabs are expanded using the value specified in the EDITTABS environment variable.
- If the external file contains lines that cannot be encoded into a MANTIS program, they will be converted into comment lines.
- You can also edit your program with the Edit option on the Program Design Facility menu, or by entering E in the SEL field on the Program Directory Selection Screen.

ERASE

Use the ERASE command to delete one or more lines of a MANTIS program.

ERASE *begin*[,*end*]

begin

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

Format Arithmetic expression that evaluates to a line number in your program.

Consideration The line number must be a valid line number in your program.

end

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

Format Arithmetic expression that evaluates to a line number in your program.

Considerations

- If you do not specify end, MANTIS deletes only the line specified by begin.
- The line number must be a valid line number in your program.
- end must be greater than or equal to begin.

Example

```
LIST
  10 ENTRY MAINTENANCE
  20 .ACCESS RECORD("INDEX","SERENDIPITY",16)
  30 .SCREEN MAP("INDEX")
  40 .CONVERSE MAP
  50 .COUNTER=1
  60 .WHILE MAP<>"CANCEL" AND COUNTER<17
  70 ..WHEN INDICATOR(COUNTER)="G"
  80 ...GET RECORD LEVEL=COUNTER
  90 ..WHEN INDICATOR(COUNTER)="D"
 100 ...DELETE RECORD LEVEL=COUNTER
ERASE 70,80
LIST
  10 ENTRY MAINTENANCE
  20 .ACCESS RECORD("INDEX","SERENDIPITY",16)
  30 .SCREEN MAP("INDEX")
  40 .CONVERSE MAP
  50 .COUNTER=1
  60 .WHILE MAP<>"CANCEL" AND COUNTER<17
  90 ..WHEN INDICATOR(COUNTER)="D"
 100 ...DELETE RECORD LEVEL=COUNTER
```

General considerations

- Another way to erase a single line is to enter the line number at the bottom of your screen and press ENTER.
- MANTIS does not resequence line numbers automatically. You can resequence by using the SEQUENCE command.

GO

Use the GO command to resume execution of a program after it has stopped at a breakpoint. You can specify how many lines of the program you want MANTIS to execute.

GO [*lines*]

lines

Description *Optional*. Specifies the number of program lines you want MANTIS to execute before stopping again.

Format Arithmetic expression in the range of 1–99999999.

Considerations

- If you do not specify *lines*, MANTIS continues executing your program until it reaches another breakpoint or terminates.
- Specifying the number of lines to execute is useful during program testing when you want to step through your program a few lines at a time.

Example

```
SET BREAK 70,"SHOW I"
RUN
487 The program has stopped at a breakpoint.
70 I=I+1
--> SHOW I
16
GO 1
608 The specified number of program lines has been executed.
80 GET DETAIL LEVEL=I
GO
```

General considerations

- The GO command is not supported by MANTIS for the IBM mainframe.
- When a breakpoint is set on a program line, the statements on that line will not execute until the program stops at the breakpoint and the GO command is entered.
- A program breakpoint is effected before any statements on the given program line are executed. The GO command resumes execution starting with the breakpoint program line. Before using the GO command, you can use the SHOW NEXT command to check which program line is to be executed next.
- Execution does not stop at a breakpoint when a bound program is running.

HELP

Use the HELP command to explain an error message, command, or statement. HELP can also display a list of reserved words and a list of the commands, built-in functions, and statements for which help is available.

HELP [***message - number*** | ***keyword*** | **RESERVE** | **LAST**]

---

message-number

Description *Optional*. Specifies the number of a MANTIS error message for which you want further information.

Format Arithmetic expression that evaluates to a MANTIS error message number.

keyword

Description *Optional*. Specifies the keyword of a command or statement for which you want further information.

Format Valid MANTIS command or statement.

Considerations

- For statements used with END (e.g., WHILE-END, IF-END), do not specify END with the HELP command (use HELP WHILE or HELP IF).
- You can get help for MANTIS built-in functions which have the same keyword as a MANTIS statement by entering the function name, followed by a set of parentheses. For example, if you want help for the ASI statement, enter HELP ASI. For the ASI function, enter HELP ASI().
- If you have SQL Support, you can get help information by entering HELP SQL.

RESERVED

Description *Optional*. Displays a list of all words reserved for use as keywords and not for use as symbolic names.

LAST

Description *Optional*. Displays the error message for the most recent operating system request that returned an error status, followed by the last line written to the MANTIS error log file during this MANTIS session.

Examples

```
HELP
HELP 123
HELP CONVERSE
HELP REVERSED
HELP IF
```

General considerations

- HELP with no parameter displays a prompter describing the most recent error message generated within the current main program. If there is no MANTIS program fault, the result is the same as entering HELP HELP.
- To exit from the help prompter and return to your program, press CANCEL.

LIST

Use the LIST command to list all or part of the program currently in the work area. MANTIS removes superfluous blanks and indents statements according to their nesting level in ENTRY-EXIT, FOR-END, IF-ELSE-END, UNTIL-END, WHEN-END, and WHILE-END statements.

LIST [*begin*[,*lines*]]...

begin

Description *Optional*. Specifies the number of the first line you want to list.

Format Arithmetic expression that evaluates to a valid line number.

Considerations

- If you do not specify *begin*, MANTIS begins with the first line in the program in your work area.
- The line number does not have to be exact. MANTIS starts listing the program at the first line greater than or equal to the specified line number. MANTIS displays an error message only if the specified line number is negative, or greater than the highest line number in the program.

lines

Description *Optional*. Specifies the number of lines you want to list.

Format Arithmetic expression between 1 and 99999999.

Considerations

- If you do not specify *lines*, MANTIS lists all lines from *begin* to the end of the program.
- If you specify more lines than the program contains, the entire program will be listed.

Example

```
LIST
10 TEXT(16)
20 LET X="ABCDEFGH"
```

General considerations

- LIST with no parameters lists the entire program, displaying a full screen each time you press ENTER. When the program contains more lines than will fit on the screen, press ENTER to continue the display until the end of the program is reached.
- MORE is displayed in the Key Simulation field if there are more program lines to be listed. You can overtype MORE with KILL or CANCEL if you do not want to list any more lines, or press KILL or CANCEL.
- If a line exceeds the width of the scroll map, the displayed text will be truncated at the right edge of the scroll output map.
- You can print a program while in programming mode by entering:

  ```
  OUTPUT PRINTER
  LIST
  ```

  or by using the Print Program option from the Program Design Facility menu.

LOAD

Use the LOAD command to retrieve a program from a MANTIS library or a PC file into your work area.

LOAD { ***libname*** [**, *password***] | **FILE *file - spec*** }

libname

Description *Optional*. Specifies the name of the program you want to load if it is in another user's library.

Format [*user-name*:]*program-name.*

Consideration If the program is in your library, you do not need to specify the *user-name*.

password

Description *Optional*. Specifies the password used when the program was most recently saved.

Default Password of the program currently in the work area.

Format Password used when the program was most recently saved.

Considerations

- If the program is in your library you do not need to specify the password.
- If the password does not match the password specified when the program was saved, MANTIS displays an error message instead of loading the program (unless the program is in your own library).

FILE

Description *Optional*. Specifies that you want to load a program from a PC file.

Considerations

- LOAD FILE renumbers any program lines whose line numbers are missing or are out of sequence and resets the program name to the user name.
- LOAD FILE will expand any tabs using the value specified in the EDITTABS environment variable.
- If the PC file contains lines that cannot be encoded into a MANTIS program, they will be converted into comment lines.

file-spec

Description *Required*. Specifies the name of the PC file that contains your program.

Format PC file specification.

Examples

```
LOAD EXAMPLE_PROGRAM
LOAD MASTER:EDIT_RTN,VICTORIA
LOAD FILE C:RTN123.MAN
```

General Considerations

- Note that MANTIS for Windows uses a comma (,) to separate the password in the LOAD command. MANTIS for the IBM mainframe uses a slash(/).
- LOAD automatically clears the work area after loading the specified program. Therefore, if you load a second program before saving or replacing the first program, any changes you made after the most recent SAVE or REPLACE will be lost.
- You can also load a program into your work area by using the FETCH option in Library Functions, or by entering S in the SEL field on the Program Directory Selection screen.

NEW

Use the NEW command to clear the work area.

NEW

Example

```
LIST
10 TEXT X(16)
20 LET X="ABCDEFGH"
NEW
LIST
```

General considerations

- Issuing the NEW command clears the work area, but does not clear the screen.
- Issuing the NEW command without first saving or replacing the program causes any updates to the program to be lost.
- The NEW command sets the current password to the sign-on password and the current program description to a null text value. It also resets the program name to the user name.
- The LOAD, EDIT *libname*, EDIT FILE *file-spec* and RUN *libname* commands also clear the work area.

PURGE

Use the PURGE command to delete a program from your library (but not from the work area).

PURGE *libname*[,*password*]

libname

Description *Required*. Specifies the library name of the program you want to delete.

password

Description *Optional*. Specifies the password used when the program was most recently saved.

Default Password of the program currently in the work area.

Format 1- to 16-character text value.

Consideration The password is not checked if it is not supplied because you can only purge programs in your own MANTIS library. It will be checked if supplied. There is no need to specify this parameter.

Example

```
PURGE EXAMPLE_PROGRAM
```

General considerations

- Note that MANTIS for Windows uses a comma(,) to separate the password in the PURGE command. MANTIS for the IBM mainframe uses a slash(/).
- You can purge programs only in your own library.
- You can delete a program from your own MANTIS program library by using the DELETE option in Library Functions in the Program Design Facility, or by entering P in the SEL field on the Program Directory Selection screen.

QUIT

Use the QUIT command to terminate programming mode and return to the Program Design Facility menu screen.

QUIT

Example

```
QUIT
```

General considerations

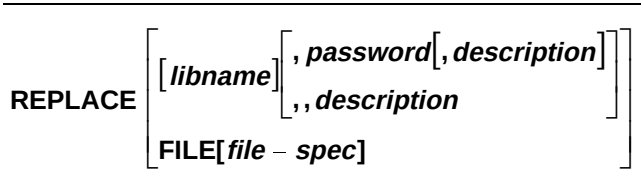
- In MANTIS for Windows, issuing a QUIT command returns you to the Program Design Facility menu. Your program and any changes you made remain in the work area. You can go into other options of Program Design and return to the Update Program option to SAVE or REPLACE your program. You can also SAVE or REPLACE your program from the Library Functions menu.

  In MANTIS for the IBM mainframe, issuing a QUIT command returns you to the Facility Selection menu and clears your program from the work area. So, you must SAVE or REPLACE your program before issuing a QUIT command, or your changes will be lost.

- The KILL or QUIT logical keys (CTRL-K and CTRL-Q by default) also return you to the Program Design Facility menu, as QUIT does.

REPLACE

Use the REPLACE command to replace a program in your library or in a OC file with the program currently in your work area.



libname

Description *Optional*. Specifies the library name of the program to be replaced.

Default The name of the current program in your work area.

Format Library name of the program you want to replace.

Consideration Specifies only if the name of the program you want to replace differs from the name with which the current program was most recently saved or loaded.

password

Description *Optional*. Specifies the new password for the program to be replaced.

Default Password of the current program in the work area.

description

Description *Optional*. Specifies or changes the description of a program as it appears in the Directory of Programs.

Default Description of the current program in the work area.

Format 1- to 48-character text value.

Consideration Specifies a description only if you want to change it or add it to the program.

FILE

Description *Optional.* Specifies that you want to replace a program in a PC file.

file-spec

Description *Optional.* Specifies the name of the PC file in which you want to save your program.

Format PC file specification.

Consideration If you specify a PC file that already exists, it will be overwritten. You do not need to specify a PC file if you want to replace a file that was loaded using LOAD FILE.

Examples

```
REPLACE DATAENTRY
REPLACE PROGRAMA,,TEST PROGRAM
REPLACE FILE C:RTN123.MAN
```

General considerations

- Note that MANTIS for Windows uses a comma(,) to separate the password and description in the REPLACE command. MANTIS for the IBM mainframe uses a slash (/).
- You can replace a program only in your own library.
- You can save a program only once; thereafter, you must replace it.
- If the program you are replacing is the program now in your work area, you need not specify *libname*, *password*, or *description*.
- If you issue a RUN statement for a program containing a CHAIN statement, be sure that the proper program is in the work area before you REPLACE it. If a program containing a CHAIN statement is run before any modifications have been SAVEd or REPLACEd, these changes will be lost.
- You can also replace a program in your work area by using the Replace option in Library Functions (see “Library functions” on page 313).

RUN

Use the RUN command to execute the program in the work area, optionally loading it into the work area from a specified library. The programming mode heading (PROGRAM ===>) disappears from the screen while the program is running and reappears when the program stops executing. A program will run until it encounters an invalid statement, a STOP statement, a CHAIN statement, a KILL command, a breakpoint, or runs out of program statements.

RUN [*libname*] [*begin*]

libname

Description *Optional*. Specifies the library name of the program you want to load and run.

Default The current program in the work area.

Format [*user-name*:]*program-name*

Consideration If the program is in your library, you do not need to specify the *user-name*.

begin

Description *Optional*. Specifies the number of the line where you want the program to begin running.

Default The first line in your program.

Format Arithmetic expression that evaluates to a line number in your program.

Example

```
10 SHOW "WHAT IS THE CAPITAL AMOUNT?"
20 END
RUN
WHAT IS THE CAPITAL AMOUNT?
```

General considerations

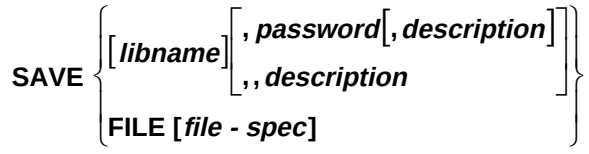
- RUN with no parameter erases all variables and arrays belonging to the program in the work area and executes the program from the beginning. If the program in the work area is an external subroutine (which has stopped before reaching EXIT), any arguments passed to it on the DO statement are not erased. They retain their current values.

- RUN with a begin parameter retains the current values of all variables and arrays and executes the current program from the specified line number. Use this form of the RUN command to continue a program after it stops because of an error condition or a STOP statement. You will find this useful for interactive testing and debugging.

- You can RUN any program in another user's library. When the program stops, however, you will not be allowed to LIST or modify it unless its password matches the password of the last program (from your library) which you loaded into the work area.

SAVE

Use the SAVE command to copy the program in the work area into your library or a PC file.



libname

Description *Optional*. Specifies the name you want to use when saving the program in your MANTIS library.

Default The name of the program currently in your work area.

Format 1–30 alphanumeric characters.

Consideration The *libname* cannot contain a slash (/) character.

password

Description *Optional*. Specifies the password you want to use when saving the program.

Default Password of the last program loaded into the work area or sign-on password if no program was loaded.

Format 1- to 16-character text value.

Considerations

- Only supply a password if it is different from your sign-on password.
- The password cannot contain a slash(/) character.

description

Description *Optional*. Specifies a description of the program as you want it to appear in the Directory of Programs.

Format 1–48 characters.

FILE

Description *Optional*. Specifies that you want to save a program in a PC file.

file-spec

Description *Optional*. Specifies the name of the PC file in which you want to save your program.

Format PC file specification.

Consideration If you specify a PC file that already exists, the SAVE statement will fail. Use the REPLACE FILE statement if you want to overwrite an existing file.

Examples

```
SAVE DATAENTRY
SAVE PROGRAMA,,TEST PROGRAM
SAVE FILE C:RTN123.MAN
```

General considerations

- Notice that MANTIS for Windows uses a comma(,) to separate the password and description in the SAVE command. MANTIS for the IBM mainframe uses a slash (/).
- Blanks are important in both program names and passwords because MANTIS interprets them as part of the name or password. Use exactly the same number of blanks consistently. For example, ACME␣PAYROLL is different from ACME␣␣PAYROLL.
- You can save a program only once; thereafter, you must replace it.
- You can also save a program in your work area by using the SAVE option in Library Functions (see “Library functions” on page 313).

SEQUENCE

Use the SEQUENCE command to renumber the lines of the program in the work area.

SEQUENCE [*first*[,*increment*]] [*entry-name*]

first

Description *Optional*. Specifies the number you want for the first statement.

Default 10

Format Arithmetic expression that evaluates to a number between 1 and 64000.

Consideration MANTIS applies only the integer portion of first.

increment

Description *Optional*. Specifies the increment by which you want successive line numbers to increase.

Default 10

Format Arithmetic expression that evaluates to a number between 1 and 64000.

Consideration MANTIS applies only the integer portion of increment.

entry-name

Description *Optional*. Specifies that the renumbering is to be confined to a subroutine or to the main program.

Format Entry name of a subroutine or the main program as defined on an ENTRY statement.

Examples

```
    10 ENTRY COMPOUND
    13 .¦ THIS IS AN EXAMPLE
    20 .SHOW "WHAT IS THE CAPITAL AMOUNT?"
    21 .OBTAIN INVESTMENT
    50 EXIT
  SEQUENCE
  LIST
    10 ENTRY COMPOUND
    20 .¦ THIS IS AN EXAMPLE
    30 .SHOW "WHAT IS THE CAPITAL AMOUNT?"
    40 .OBTAIN INVESTMENT
    50 EXIT
  SEQUENCE 100
  SEQUENCE 100,5
  SEQUENCE 1,1
  SEQUENCE 1000 EDIT_ROUTINE
```

General considerations

- If you specify an *entry-name*, renumbering begins with the ENTRY *entry-name* statement and ends with the next EXIT statement. Renumbering stops if another ENTRY statement is encountered before the EXIT statement. When renumbering the specified routine, if the last line of the renumbered routine has a higher line number than the program line following, a warning message is displayed and lines are renumbered until no overlap occurs.
- Breakpoints are automatically removed from the program when the SEQUENCE command is executed.

SET

Use the SET command to set breakpoints in the current program. Setting a breakpoint at a program line number causes execution of the program to stop when the first statement on that line is about to be executed.

SET BREAK *line-number*[,*command*]

BREAK

Description *Required*. Specifies a breakpoint in the current program.

line-number

Description *Required*. Specifies the line number where a breakpoint is to be set.

Format Arithmetic expression that evaluates to a line number in your program.

command

Description *Optional*. Specifies a MANTIS command that will be executed when the program reaches the breakpoint.

Format Text expression that evaluates to a MANTIS command (or statement).

Considerations

- Can be any MANTIS command (or statement). MANTIS will interpret it as though you entered it after the program stopped at the breakpoint.
- You can also stack commands within this parameter.

Example

```
SET BREAK 70,"SHOW I"
RUN
487 The program has stopped at a breakpoint.
70 I=I+1
-> SHOW I
16
```

General considerations

- The SET command is not supported by MANTIS for the IBM mainframe.
- Breakpoints are useful during program testing when placed at strategic locations in the program. You can use the RUN command to execute the program until it reaches a breakpoint, and then use the SHOW or DISPLAY command to check the values of variables. Use the GO command to resume execution of your program after it has stopped at a breakpoint.
- Programs can be saved or replaced in your program library with breakpoints set. Breakpoints remain in effect when such a program is next loaded during Program Design. You can use this feature to set breakpoints in a subroutine invoked by an external DO statement. External subroutines are not loaded until the DO statement is executed.
- Use the CLEAR command to clear program breakpoints.
- Any breakpoint is removed from a line when it is modified by a CHANGE or ALTER command. All breakpoints are removed from the current program when the program is modified by a SEQUENCE, COPY, or EDIT command.
- SET can also be used as a statement, as documented in *MANTIS for Windows Language Reference Manual*, P19-2302.
- Execution does not stop at a breakpoint in a bound program.
- If the command on the SET BREAK line is invalid, a message will be displayed, and the process will stop. If you enter GO, the command in error will be skipped, and the program will continue at the line where the breakpoint occurred.

SHOW

Use the SHOW command to display the current program breakpoints or the next program line to be executed.

SHOW { **BREAK** | **NEXT** }

BREAK

Description *Optional*. Displays all breakpoints in the current program or external subroutine.

NEXT

Description *Optional*. Displays the program line which will be executed next.

Example

```
SHOW BREAK
```

General consideration

- After displaying a full screen of lines, MANTIS displays MORE in the Key Simulation field and waits for you to reply before displaying any more lines. This prevents lines from being scrolled off the screen before you have had time to read them.
- A shorthand form of the SHOW command is available. Entering a colon (:) at the start of the line is equivalent to SHOW, so that :BREAK is equivalent to SHOW BREAK.
- SHOW can also be used with different options as a program statement. Refer to the *MANTIS for Windows Language Reference Manual*, P19-2302.

UP

Use the UP command to select as the current program a program or an external subroutine at a higher level. You can then list and edit it in the work area.

UP [*levels*]

levels

Description *Optional.* Specifies the number of levels up from the current program to the desired program or external subroutine.

Default 1

Format Numeric expression that evaluates to a positive number between 1 and 32767.

Example

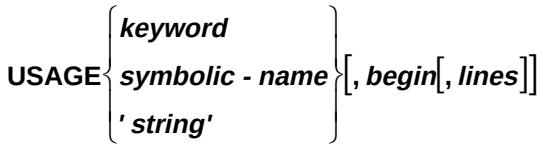
```
UP 2
```

General considerations

- The UP command works differently in MANTIS for Windows than it does in MANTIS for the IBM mainframe, where it is used to scroll toward the beginning of a program listing.
- The original program has a DOLEVEL of zero. With each nested external DO statement, the DOLEVEL value increases by one. Use this command when MANTIS stops executing an external subroutine to select a higher-level routine or the calling program as the current program in the work area.
- The name of the main program or the program that contains the external subroutine at the specified level will appear at the top of the screen.
- If levels is greater than the number of levels up to the highest level, MANTIS selects the main program (which is at the highest level).

USAGE

Use the USAGE command to show where a MANTIS reserved word, symbolic name, or string is used in your program. MANTIS displays each line (within a specified range) where the item you specify is used.



keyword

Description *Required*. Specifies a keyword to display where it appears in your program.

Format MANTIS reserved word, as listed in the table in "MANTIS reserved words" on page 23.

Consideration If you specify a keyword, MANTIS displays only program lines which contain that keyword.

symbolic-name

Description *Required*. Specifies a *symbolic-name* to display where it appears in your program.

Format Name of a variable, array, or symbolic name defined in a SCREEN, PROGRAM, FILE, or ACCESS statement.

Consideration If you specify *symbolic-name*, MANTIS displays only program lines which contain that symbolic name.

string

Description *Required*. Specifies a character string to display where it appears in your program.

Format Any arbitrary string of characters. The string is delimited by a single quotation mark (’), comma (,), or semicolon (;).

Consideration If you specify *string*, MANTIS displays program lines which contain an exact match for the string in any position. The string is compared with the text of the program as it would be listed by the LIST command. Spacing and case (uppercase or lowercase) must match. Include the delimiters if you specify *string*; otherwise, MANTIS may define an unintended symbolic name.

begin

Description *Optional*. Specifies the number of the first line for which you want to display usage of the specified item.

Default The first line in your program.

Format Arithmetic expression that evaluates to a line number in your program.

Consideration The line number does not need to be exact. MANTIS starts searching the program at the first line greater than or equal to the specified line number.

lines

Description *Optional*. Specifies the number of lines for which you want to display usage of the specified item.

Format Arithmetic expression that evaluates to a number between 1 and 99999999.

Consideration If you do not specify *lines*, MANTIS displays all lines which contain the specified item. MANTIS waits for you to press ENTER each time it fills the screen.

Examples

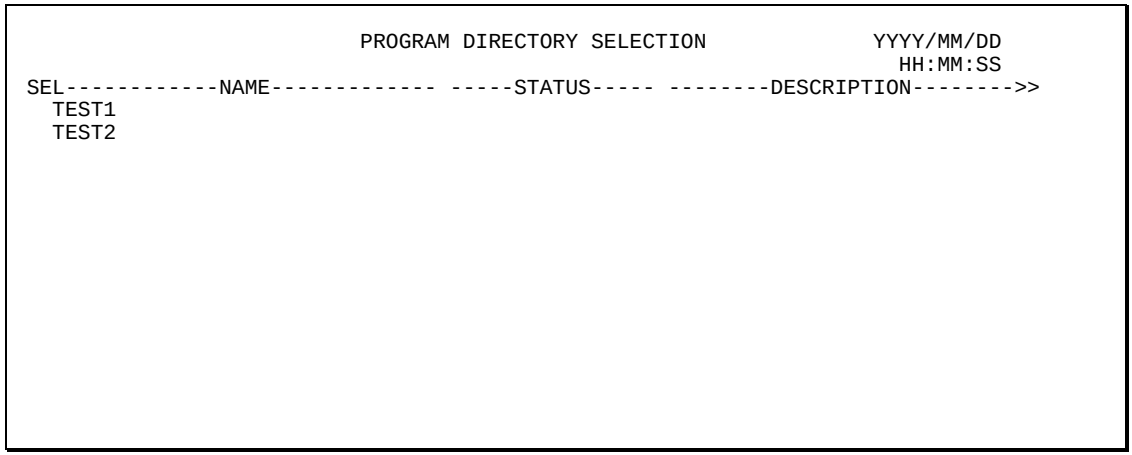
```
USAGE REC1
10 FILE REC1("INDEX","FORGET_ME_NOT")
30 GET REC1
40 WHILE REC1<>"END"
50 .GET REC1
60 .GET REC1(INDEX1)EQUAL

USAGE 'REC1("INDEX")'
10 FILE REC1("INDEX","FORGET_ME_NOT")

USAGE GET
30 GET REC1
50 .GET REC1
80 .GET REC1(INDEX1)EQUAL

USAGE 'GET'
10 FILE REC1("INDEX","FORGET_ME_NOT")
30 GET REC1
50 .GET REC1
60 .GET REC1(INDEX1)EQUAL

USAGE ,REC1(,,
10 FILE REC1(“INDEX”,”FORGET-ME-NOT”)
60 GET REC1(INDEX1)EQUAL

USAGE ,REC1(,,50)
60 .GET REC1(INDEX1)EQUAL

USAGE ,REC1(,,,1)
10 FILE REC1(“INDEX”,”FORGET-ME-NOT”)
```

General considerations

- Choose only one parameter: *keyword*, *symbolic-name*, or *string*.
- You can terminate a USAGE display after MANTIS displays a full screen of data by entering KILL or CANCEL in the Key Simulation field.
- If you specify *lines* but not a *begin*[,*lines*], you must code the *begin* comma.

Directory of programs

The Directory of Programs option enables you to view an alphabetic listing of all programs in your library. When you select this option from the Program Design Facility menu, a screen similar to the one shown in the following example displays. If you specified a name in the Program Name field of the Program Design Facility menu, the directory list is positioned starting with the name of that program.



The PASSWORD, DATE, and TIME fields appear to the right of the DESCRIPTION field (off the screen). Scroll to the right using the (WINRIGHT) key to view these fields.

The cursor is positioned above the SEL field. If you enter characters here and press ENTER, the directory lists programs starting with the program name which begins with or is alphabetically after the entered characters.

You may also use the wildcard specification to indicate a set of programs whose names correspond to a particular set of characters where:

* Represents an indefinite number of generic characters. For example, *A* indicates all programs whose name contains an A.

? Represents a single generic character. PROG??? designates a program(s) whose name begins with PROG and ends with any three characters.

MANTIS maintains the following fields on this screen:

NAME

Description Provides the name of the program.

STATUS

Description Indicates whether the program is bound (BOUND), or whether the program contains logic errors (LOGIC).

Options

BOUND The program is bound.

BOUND (N) The program is bound, and the source has been deleted.

BOUND (X) The program is bound but cannot be executed. This is probably caused by transferring a bound program from one release to another.

LOGIC The program contains logic errors.

DESCRIPTION

Description Supplies the description you provided for the program. If you left the Description field blank, there will not be any description of your program.

PASSWORD

Description Provides the password for the program.

DATE

Description Provides the date when the program was last saved or replaced.

TIME

Description Provides the time when the program was last saved or replaced.

You may provide information for the following fields:

SEL

Description *Optional*. Specifies the action you want to perform on the program.

Options

S Select the program for update.

P Delete the program code and the bound version, if present.

B Bind the program.

U Remove bound version of the program.

N Delete the program source, leaving the bound version, if any.

L Print the program.

E Edit the program.

Consideration You may specify operations for more than one program. The operations you specify are performed in turn, starting with the program at the top of your screen, with the exception of P and N (both delete operations). MANTIS executes delete operations last and prompts you to confirm the deletion.

General considerations

- When you select the Directory of Programs option from the Program Design Facility menu, MANTIS displays the Program Directory Selection screen. This is not the same directory screen you receive when you select the Directory of Programs option from the Directory Facility. The Directory Facility screen is only for viewing.
- Entering characters in the Unsolicited Input field on the Program Design Facility menu and pressing ENTER will causes the directory to begin listing with the program name which begins with or is alphabetically after the input characters.
- After viewing your list of programs, press ENTER to continue scrolling through the directory list or to return to the Program Design Facility menu. To exit at any point before the end of this display, press CANCEL.

Library functions

The Library Functions option enables you to save new MANTIS programs and to retrieve, replace, and delete existing programs. When you select this option from the Program Design Facility menu, the following screen displays:

```
                    M  A  N  T  I  S

              PROGRAM DESIGN LIBRARY FACILITY

   NAME OF PROGRAM ....:                                    :
   DESCRIPTION ........:                                    :
   PASSWORD ...........:                  :

              SAVE  ...................  1
              REPLACE  ................  2
              FETCH  ..................  3
              DELETE  .................  4
              EXPORT  .................  5
              IMPORT ..................  6
              TERMINATE  ..........  CANCEL

                          :_:
```

The name, description, and password of the program currently in your work area will be displayed. If you want to alter any of these, enter data as described below.

NAME OF PROGRAM

Description *Required*. Supplies a symbolic name for the program.

Format 1- to 30-character alphanumeric symbolic name that can contain any characters except the comma, slash, and colon. Lowercase letters are converted to uppercase automatically.

Considerations

- If you want to fetch a program from another user's library, prefix the program name with the appropriate user name followed by a colon (*user-name*:*program*).
- If the program has been given a name, it will be displayed in this field. You may change the name before executing the Library Functions.

DESCRIPTION

Description *Optional*. Provides a description for your program. This description is stored with the program when you save or replace it, and appears on the directory list.

Default Description with which the program was loaded or last saved or replaced.

Format 1–48 alphanumeric characters.

PASSWORD

Description *Required* for DELETE option, and for FETCH option from another user's library. *Optional* to SAVE a new program or change an existing password for the REPLACE option.

Default Password with which the program was last saved or replaced.

Format 1–16 alphanumeric characters.

The following actions can be executed from the PROGRAM DESIGN FACILITY menu by typing the number of the action in the action field or pressing the corresponding PF key.

- **SAVE**. Saves the program currently in your work area into your library. Use this option only when the program does not already exist in your library. You can also save a program by using the SAVE command in programming mode. You can only save a program in your own library.

- **REPLACE**. Replaces the specified program in your library with the updated version currently in your work area. You can also replace a program by using the REPLACE command in programming mode. You can replace a program only in your own library.

- **FETCH**. Retrieves a program from the specified library and places it in your work area. You can also retrieve a program by using the LOAD and EDIT *libname* commands in programming mode, or by specifying a program name on the Program Design Facility menu and selecting the Update Program or Edit Program options.

- **DELETE**. Deletes a program from your library. The deleted program will remain in your work area until another program is fetched or until you exit from the Program Design Facility. You can delete a program only from your own library. You can resave a program you just deleted by providing the name and selecting the SAVE option. You can also delete a program by using the PURGE command in programming mode, by selecting the Purge Program option from the Program Design menu, or by selecting the P (purge) option in the Program Directory Selection screen.

- **EXPORT**. Exports a Program Design from your library. You can specify only a single design to be exported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus export more than one design/entity. The default output file is of the form *program_name*.exp.

- **IMPORT**. Imports a Program Design to your library. You can specify only a single design to be imported. Once this option is selected, the main Universal Export Facility screen is displayed. You can now modify any field in this main screen and thus import more than one design/entity. The default input file is of the form *program_name*.exp.

- **TERMINATE**. Press CANCEL to exit from this facility and to return to the Program Design Facility menu.

When you complete one of the options on this screen, MANTIS displays a library confirmation message.

Print a program

The Print Program option enables you to obtain a hard copy of the program specified in the Program Name field. If the Program Name field is blank, then the program shown in the Current Program field is selected. If the specified program does not exist, MANTIS displays the Program Directory Selection screen with an L in the SEL field. Erase the L to avoid printing a particular program. When you press ENTER, MANTIS prints the programs you have specified.

You can also print a program in programming mode using the OUTPUT PRINTER and LIST commands (see the example in the General considerations for the LIST command).

You may return to the Program Design Facility menu at any time during Program Design and select the Print Program option. This option sends a listing of the program currently in your work area to your designated printer.

Bind a program

The Bind Program option invokes the binding process. During the binding process, MANTIS creates a more efficient version of your program and stores it with your program code. MANTIS always executes the bound version of your program, if it exists. When you select the Bind Program option, the program you have specified in the Program Name field is loaded, bound, and replaced. If the Program Name field is blank, the program shown in the Current Program field is selected. If you have specified a program that does not exist, MANTIS displays an error message.

If you have selected multiple programs, the specified programs are displayed on the Program Directory Selection screen, with a B in the SEL field. To avoid binding a particular program, erase the B. When you press ENTER, MANTIS starts binding the specified programs.

If any errors are encountered during the Bind operation, the program is not bound. Correct the errors according to the error messages displayed by the Bind function, and repeat the Bind until all errors are eliminated. Program errors uncovered by the Bind function cause messages to be displayed in scroll mode. If the MORE prompt is displayed, you can terminate the current program Bind function by pressing KILL or CANCEL. When error messages are displayed for a program, MANTIS finishes the Bind function for that program by displaying the Press ENTER to Continue message in scroll mode. At this point, you can continue to Bind the remaining program selection (if any) by pressing ENTER, or you can cancel the Binding of the remaining program selection by pressing KILL or CANCEL.

When MANTIS finishes the binding process, it displays a status of BOUND or NOT BOUND. Press ENTER to continue.

Remember that MANTIS always executes the bound version of the program if it exists. The bound version of a program is able to DO or CHAIN to an unbound program; and likewise, an unbound program to a bound program.

You can also bind a program in programming mode using the BIND ON command. See “MANTIS commands” on page 261 for more details.

For more information on compatibility with MANTIS for the IBM mainframe, refer to the *MANTIS for Windows Language Reference Manual*, P19-2302.

Unbind a program

The Unbind Program option instructs MANTIS to delete the bound version of the program, leaving the unbound program code. When you select the Unbind Program option, the program you have specified in the Program Name field is loaded and replaced. If the Program Name field is blank, the program shown in the Current Program field is selected. If you have specified a program that does not exist, MANTIS displays an error message.

If you have selected multiple programs, the specified programs are displayed on the Program Directory Selection screen, with a U in the SEL field. To avoid unbinding a particular program, erase the U. When you press ENTER, MANTIS deletes the specified bound versions. When the unbind process is complete, MANTIS displays a confirmation message. Press ENTER to continue.

You can also delete the bound version of a program in programming mode by using the BIND OFF command.

Purge a program

The Purge Program option tells MANTIS to delete both the program code and the bound version of the program. When you select the Purge Program option, the program you have specified in the Program Name field is deleted. If the Program Name field is blank, then the program shown in the Current Program field is selected. If you specify a program that does not exist, MANTIS displays an error message. You can also delete a program in programming mode using the PURGE command.

If you specify multiple programs, MANTIS displays the programs on the Program Directory Selection screen with a P in the SEL field.

Erase the P to avoid purging a particular program. When you press ENTER, MANTIS deletes the programs, one at a time, asking you to confirm the deletion for each specified program. MANTIS displays a message when the deletion process is complete. Press ENTER to continue.

Delete the program source

The Delete Program Source option tells MANTIS to delete the program source code, leaving only the bound version of the program. You cannot recover the program source code after you execute this option. When you select the Delete Program Source option, the program source code for the program you have specified in the Program Name field is deleted. If the Program Name field is blank, the program shown in the Current Program field is selected. If you specify a program that does not exist, MANTIS displays an error message. If you specify a program that is not bound, MANTIS does not delete your source and issues the error message, PROGRAM NOT BOUND.

If you specify multiple programs, MANTIS displays the programs on the Program Directory Selection screen with an N in the SEL field. Erase the N if you want to avoid deleting the program code for a particular program. When you press ENTER, MANTIS deletes the program code, one program at a time. MANTIS asks you to confirm each deletion. MANTIS displays a message when the deletion process is complete. Press ENTER to continue. If the program is not found, the source does not get deleted. You receive a message of NOT FOUND.

Edit a program

The Edit Program option invokes your personal computer text editor from the Program Design Facility menu. If you have specified a program in the Program Name field, MANTIS loads that program before it invokes the editor. If the Program Name field is blank, the program shown in the Current Program field is selected. If the specified program does not exist, MANTIS displays an error message.

You may also select this option by pressing the EDIT key. If the specified program does not exist, MANTIS displays an error message. Note that you can also invoke the editor from programming mode using the EDIT command.

When you exit from the Full-Screen Editor, MANTIS copies the edited program back into the work area and renumbers any program lines whose line numbers are missing or are out of sequence. MANTIS enters programming mode to give you the opportunity to RUN, SAVE, or REPLACE the modified program. When you QUIT from programming mode, you will be returned to the screen from where the EDIT was invoked (the Program Design Facility screen, or the Program Directory Selection screen).

8

Transfer Facility

MANTIS for Windows allows you to transport MANTIS entities between two personal computers, using the Transfer Facility. The Transfer Facility enables you to copy entities (such as screens, files, and programs) between MANTIS users, in one or more MANTIS libraries, using the Transfer File as a staging area. The Transfer File holds data on a temporary basis, and is divided into independent areas, or bins, which may belong to a single user or may be shared by several users.

Transfer Facility features

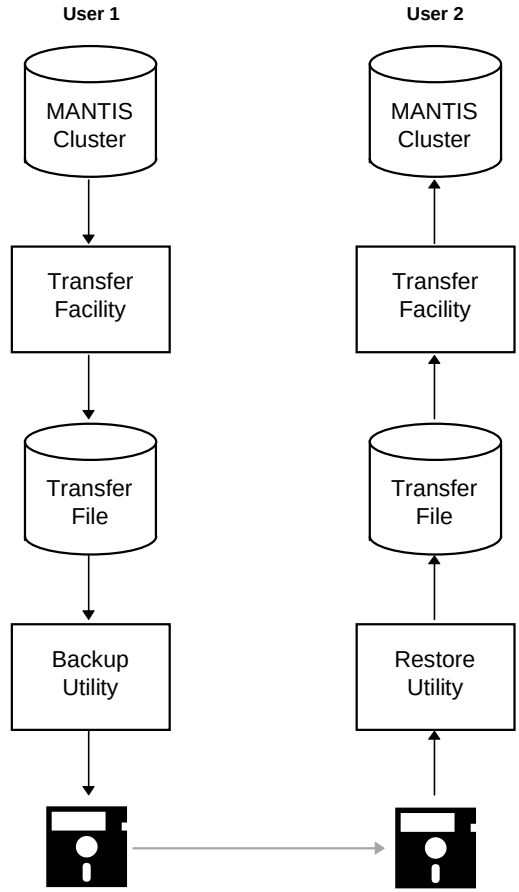
The Transfer Facility enables you to:

- Copy selected entities between MANTIS users on multiple personal computers.
- Copy selected entities between MANTIS users on one personal computer.
- Do a selective backup of MANTIS entities.
- Do a selective recovery of MANTIS entities from a backup of the MANTIS library.

The following figure illustrates how the Transfer Facility works:

Copying from one personal computer to another

Use the Transfer Facility to copy entities between two personal computers. User 1 copies entities into a bin of the Transfer File and then uses the a backup utility to create diskettes of the Transfer File. These diskettes are taken to another personal computer, and a restore utility is used to load the Transfer File onto the other personal computer. User 2 copies the entities from the bin into his or her library. The following figure shows how this process works:

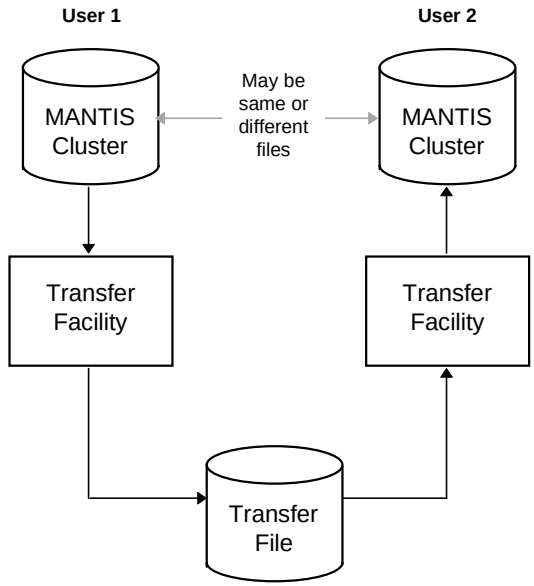


This process can also be done without backup or restore utilities and diskettes if both computers share a network connection.

Copying from one user to another on one personal computer

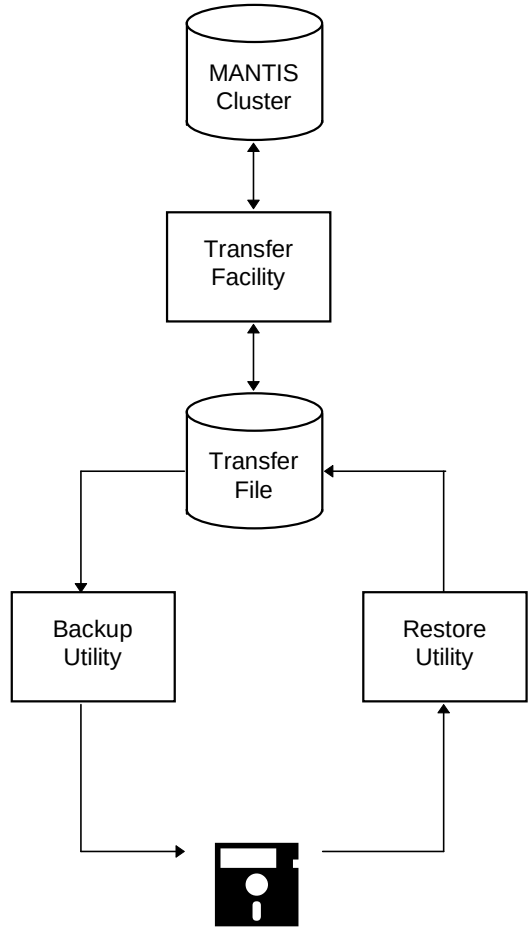
You can use the Transfer Facility to copy entities between MANTIS users on one personal computer, as follows. User 1 copies entities into a bin of the Transfer File and then signs off MANTIS. User 2 signs on to MANTIS and copies the entities from the bin into his or her library. (User 2 can delete entities from the bin after the copy.)

User 1 and User 2 may reside in the same library or in different libraries in a cluster; or in different clusters altogether. More than one MANTIS library can be accessed by using more than one configuration file or by using the SET command (refer to the *MANTIS for Windows Administration Guide*, P19-2304). If User 1 and User 2 are in one MANTIS library, it is not necessary for User 1 to sign off from MANTIS before signing on to User 2. The following figure shows how this process works:



Selective backup of MANTIS entities

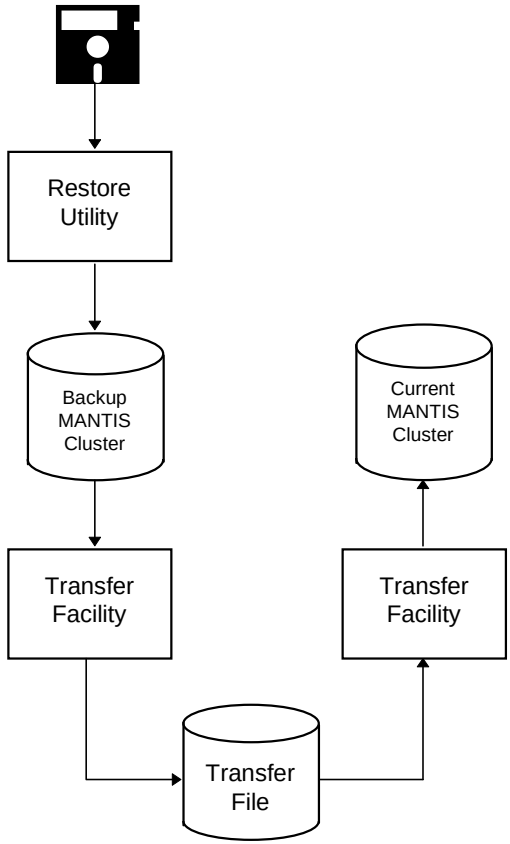
You can use the Transfer Facility to back up selected entities. Copy the entities into a bin of the Transfer File and then use a backup utility to create the backup diskettes of the Transfer File. The entities can be selectively restored later by restoring the original Transfer File (by using a restore utility) and then copying the entities back into the MANTIS cluster. The following figure shows how this process works:



This process can also be done without backup or restore utilities and diskettes if both computers share a network connection.

Selective recovery from a backup cluster

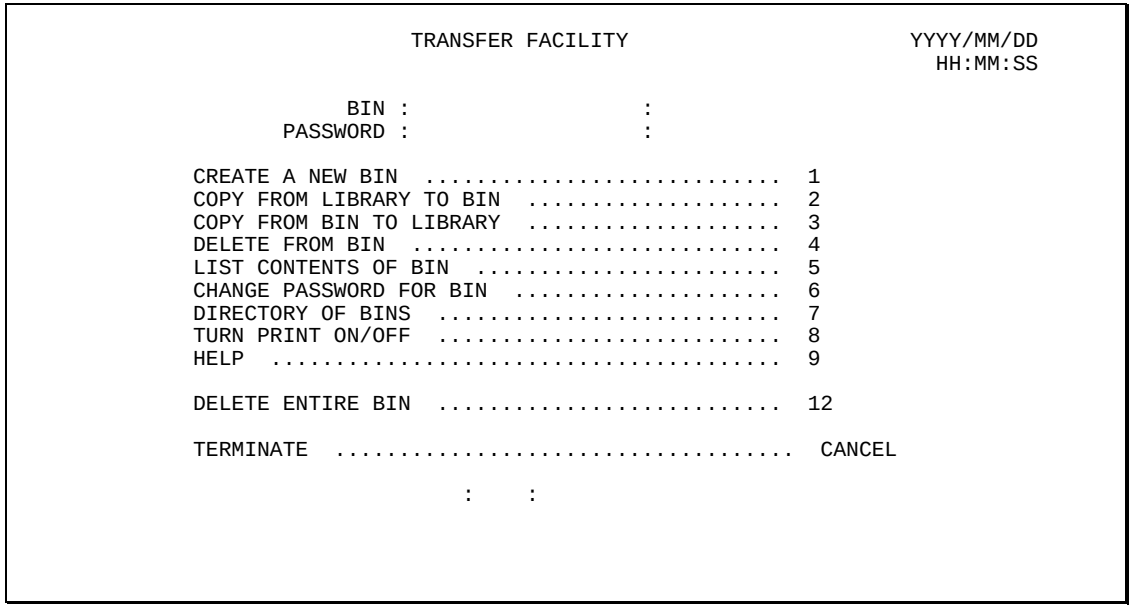
By using the Transfer Facility, you can selectively recover entities from backup diskettes of your MANTIS cluster, as shown in the following illustration:



If your backup MANTIS cluster has the same name as your current cluster, you should first rename your current cluster. Using a restore utility, you can then restore from the MANTIS cluster backup. Use the Transfer Facility to copy the specified entities from the backup MANTIS cluster to the Transfer File, and then to copy the entities into the current MANTIS cluster. Then delete the backup MANTIS cluster.

Transfer Facility menu

You access the Transfer Facility from the Facility Selection menu (see the illustration in “Signing on to MANTIS” on page 41). When you select the Transfer Facility option, the following screen displays:



Provide the following information:

Bin

Description *Required* for Create a New Bin, Copy from Library to Bin, Copy from Bin to Library, Delete from Bin, List Contents of Bin, Change Password for Bin, and Delete Entire Bin. *Optional* for Directory of Bins, Turn Print On/Off, and help. Specifies the name of the bin to be created, accessed, or deleted.

Format 1–16 alphanumeric characters.

Considerations

- If you do not know the name of an existing bin, you can select the Directory of Bins option (see "Directory of bins" on page 382) to view a list of the current bins. Bin names are listed as well as the name of the creator and the date of creation. Passwords also appear if you are the Master User or the creator of the bin.
- The bin name you enter on the Transfer Facility menu appears in the Bin field in the upper left corner of all subsequent screens until you change it on this menu or exit from this facility.

Password

Description *Optional*. Provides a password for the bin.

Format 1–16 alphanumeric characters.

Considerations

- If you provide a password when you create a bin, you must supply a password for other options on the Transfer Facility menu, as well.
- If you do not know the password for an existing bin, you can select the Directory of Bins option (see "Directory of bins" on page 382) to view a list of the current bins in your library. Bin names are listed as well as the name of the creator and the date of creation. Passwords also appear if you are the Master user or the creator of the bin.

The following table provides an overview of the options available in the Transfer Facility and where each option is discussed:

This option	Enables you to. . .	See
Create a New Bin	Create a new bin into which you will copy entities from your library.	"Creating a new bin" on page 332.
Copy from Library to Bin	Copy entities from your library into the current bin.	"Copying from library to bin" on page 333.
Copy from Bin to Library	Copy entities from the current bin into your library.	"Copying from bin to library" on page 350.
Delete from Bin	Delete entities from the current bin.	"Deleting entities from a bin" on page 366.
List Contents of Bin	List entities in the current bin.	"Listing the contents of the current bin" on page 378.
Change Password for Bin	Assign a new password to the current bin.	"Changing the bin password" on page 381.
Directory of Bins	List all bins.	"Directory of bins" on page 382.
Additional options:		
Turn Print ON/OFF	Switch on/off a printing trail.	"Additional options" on page 383.
Help	View a prompter of help information.	
Delete Entire Bin	Delete a bin and its contents.	

In the transfer process, you copy entities out of one library and into another. To transfer OUT entities, you can do the following:

- Create a New Bin ("Creating a new bin" on page 332).
- Copy from Library to Bin ("Copying from library to bin" on page 333).

To transfer IN entities, you can Copy from Bin to Library ("Copying from bin to library" on page 350).

The following sections discuss the Transfer Facility options.

Creating a new bin

The Create a New Bin option is the first of two steps in the process of transferring entities out of a library. This option enables you to create a new bin with its own name and password in the Transfer file. There can only be 360 bins in the same Transfer file. This bin will hold the entities that you copy in the Copy From Library to Bin option (see "Copying from library to bin" on page 333), which is the second step in the process of transferring out entities.

You begin the Create a New Bin option on the Transfer Facility menu (see "Transfer Facility menu" on page 329) by entering a bin name and password and pressing the corresponding PF key (or entering the corresponding number in the action field and pressing ENTER). MANTIS returns a confirmation message in the lower left corner of the screen after it creates the new bin. (The Transfer Facility Menu remains on your screen.) You can access any option on the menu or press CANCEL to return to the Facility Selection menu (see the illustration in "Signing on to MANTIS" on page 41).

Copying from library to bin

The Copy from Library to Bin option is the second step in the process of transferring entities out of your library and into a bin. This option enables you to copy entities from your library to the bin you created in the Create a New Bin option (see “Creating a new bin” on page 332).

You select the Copy from Library to Bin option on the Transfer Facility menu (see “Transfer Facility menu” on page 329) by entering a bin name and password, and pressing the corresponding PF key (or by entering the corresponding number in the action field and pressing ENTER). The following screen displays:

```
                          COPY FROM LIBRARY TO BIN                    YYYY/MM/DD
BIN: current_bin                                                        HH:MM:SS

PROGRAMS  ..............  1
SCREENS  ...............  2
FILE PROFILES  ..........  3
PROMPTERS  .............  4              TURN PRINT ON/OFF  ........  12
INTERFACES  ............  5              HELP  .....................  13
SCENARIOS  .............  6              USER FILE DATA  ...........  14
TOTAL FILE VIEWS  ......  7              ALL USER ENTITIES  ........  24
EXTERNAL FILE VIEWS  ....  8             TEREMINATE  ...........  CANCEL


        STARTING NAME : _                                  :
          ENDING NAME :                                    :
      (A)DD/(R)EPLACE : A :              WITH DATA : N :

             NEW NAME :                                    :
      LANGUAGE:DEVICE : ENGLISH

                                  :    :
```

The Copy from Library to Bin 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 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 the name of the entity or 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- to 16-character names. The following table summarizes the permitted lengths when naming MANTIS entities in the Transfer Facility:

Entity type	Length of name
Programs	1–32
Screens	1–32
Files	1–16
Prompters	1–16
Interfaces	1–16
TOTAL File Views	1–16
External File Views	1–16
Scenarios	1–16

ENDING NAME

Description *Optional*. Indicates the last name in a range of entities to be copied.

Format 1- to 32-character alphanumeric existing program name or screen name.

1- to 16-character alphanumeric existing name for all other entities (see the previous table).

Consideration This field is required if you are copying a range of entities to a bin. Leave this field blank if you are copying a single entity.

(A)DD/(R)EPLACE

Description *Required*. Indicates the action to be taken with the specified entities.

Default A

Options A ADD

R REPLACE

WITH DATA

Description *Required*. Indicates whether you want the MANTIS file data copied along with the MANTIS file profile.

Restriction For use only when copying MANTIS file profiles.

Default N

Consideration You can also use this field with the ALL option (see “All user entities” on page 349).

NEW NAME

Description *Optional*. Specifies the name you want to give to an entity being copied.

Format 1- to 32-character alphanumeric name.

Consideration You can specify a new name for only one entity at a time.

LANGUAGE

Description *Optional*. Supplies the language that is associated with the entity.

Default Your default language code.

Consideration The language specified here only applies to the transfer of screens and prompters. You cannot store multiple versions of an entity (e.g., entities with the same name, but different language codes) in the same bin.

The following options are also available from the Copy from Library to Bin screen shown in the previous illustration in 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 12 in the action 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-hand corner of the current screen. MANTIS will route the printing trail to your designated printer.

- **HELP**. Online help is available from the Copy from Library to Bin screen by typing a 13 in the action field and pressing Enter or by pressing PF13. Press Enter to page through the help prompters. Press PA2 to exit.

Copying single entities

You can copy a single entity from a library to a bin in one of the following ways:

- Type 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 bin, 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 bin, type it in the NEW NAME field.

  To execute, type the entity option number (1–9) in the action field and press ENTER or PF2. MANTIS copies the entity to the bin and displays a confirmation message in the lower left-hand corner of the screen.

  The following example shows a new screen, test-screen1, being added to a bin called currentbin. Type 2 (for screens) in the action field and press either ENTER or PF2 to copy the file.

```
                        COPY FROM LIBRARY TO BIN                  YYYY/MM/DD
BIN: currentbin                                                     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  ...........  14
TOTAL FILE VIEWS  ......  7             ALL USER ENTITIES  ........  24
EXTERNAL FILE VIEWS  ....  8            TERMINATE THIS FACILITY ... PA2


        STARTING NAME : test-screen1                              :
          ENDING NAME :                                 :
      (A)DD/(R)EPLACE : A :               WITH DATA : N :
             NEW NAME :                                 :

                                 :  2  :
```

- Select a single entity to be copied from an entity list that displays all of the entities in your library. To display an entity list, leave the STARTING NAME and ENDING NAME fields blank at the Copy from Library to Bin panel (see the illustration in "Copying from library to bin" on page 333). Type the option number of the type of entity you want to copy in the action field and press ENTER, or press the corresponding PF key.

  MANTIS returns the Copy To Bin: *nnnn* entity list as shown in the following example:

```
                        COPY TO BIN: nnnnnn                          YYYY/MM/DD
Bin: nnnnnn                                                            HH:MM:SS

A/R -------NAME IN LIBRARY--------  ----------NEW NAME---------  --STATUS--
      TEST_SCREEN1                  TEST_SCREEN1
      TEST_SCREEN2                  TEST_SCREEN2
      TEST_SCREEN3                  TEST_SCREEN3
      TEST_SCREEN4                  TEST_SCREEN4
```

You can page through the entity list by pressing ENTER or by using the repoint option. Tab to the lower-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 is displayed 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 This field was specified at the Copy from Library to Bin screen (see the illustration in “Copying from library to bin” on page 333).

BIN

Description *Display*. Shows the name of the bin the entities are to be copied into.

Consideration This field is specified at the Transfer Facility menu (see “Transfer Facility menu” on page 329).

A/R

Description *Optional*. Indicates the action you want to take with the entity.

Option

A ADD

R REPLACE

(Blank) No action to be taken

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 in the STATUS field (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 A in the A/R column as shown in the following example:

```
                          COPY TO BIN: SCREENS                          YYYY/MM/DD
Bin: currentbin                                                           HH:MM:SS

A/R -------NAME IN LIBRARY--------  ----------NEW NAME---------  --STATUS--
      TEST_SCREEN1                  TEST_SCREEN1
 A    TEST_SCREEN2                  TEST_SCREEN2
      TEST_SCREEN3                  TEST_SCREEN3
```

When you press ENTER, MANTIS copies the screen to your bin and displays a confirmation message in the STATUS field.

```
                          COPY TO BIN: SCREENS                          YYYY/MM/DD
Bin: currentbin                                                           HH:MM:SS

A/R -------NAME IN LIBRARY--------  ----------NEW NAME---------  --STATUS--
      TEST_SCREEN1                  TEST_SCREEN1
      TEST_SCREEN2                  TEST_SCREEN2                 ADDED
      TEST_SCREEN3                  TEST_SCREEN3
```

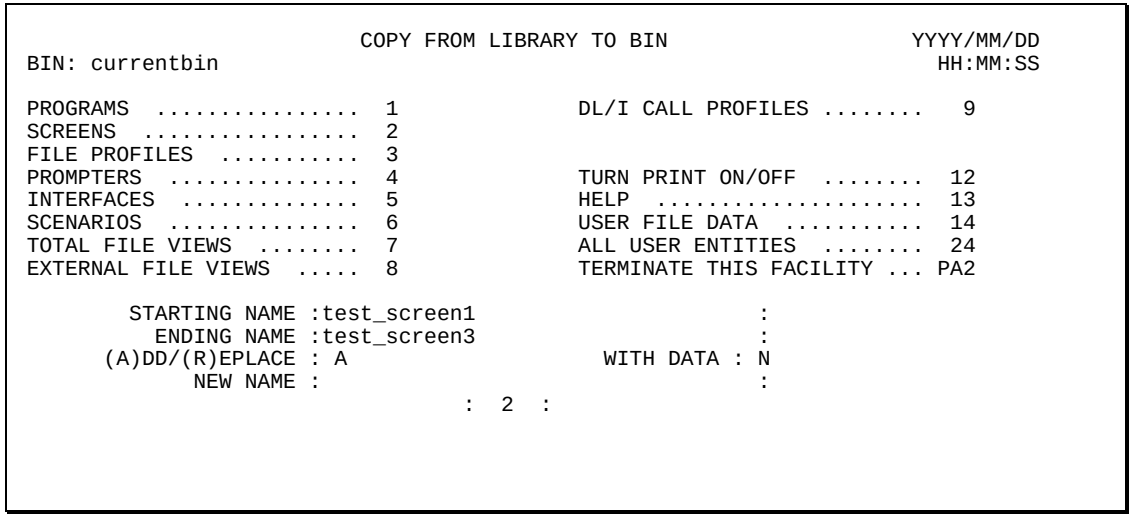
If an entity already exists in the bin, the message CANNOT ADD will appear in the STATUS field. If you want to replace the entity in the bin with the entity in your library, type R in the A/R column to replace and press ENTER. MANTIS will replace the existing entity and return the confirmation message, REPLACED.

Copying multiple entities

You can copy multiple entities from a library to a bin in one of the following ways:

- Specify a range of entities to be copied at the Copy from Library to Bin screen (see the illustration in “Copying from library to bin” on page 333). Follow these steps:
  - Type the name of the entity where you wish the copy to begin in the STARTING NAME field.
  - Type the name of the entity where you want the copy to end in the ENDING NAME field.
  - If you are adding the entities, accept the default A (ADD) in the A/R field. If the entities you are copying are to replace existing entities in the bin, type R over the A in this field.
  - To execute, type the entity option number (1–9) in the action field and press ENTER or press the corresponding PF key.

The following example shows how to copy a range of screens from TEST_SCREEN1 to TEST_SCREEN3:



When the action is executed, MANTIS returns the Copy to Bin: Screens entity list shown in the following example. 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.

```
                          COPY TO BIN: SCREENS                          YYYY/MM/DD
Bin: currentbin                                                           HH:MM:SS

A/R -------NAME IN LIBRARY--------  ----------NEW NAME---------  --STATUS--
 A    TEST_SCREEN1                 TEST_SCREEN1
 A    TEST_SCREEN2                 TEST_SCREEN2
 A    TEST_SCREEN3                 TEST_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 as shown in the following example:

```
                          COPY TO BIN: SCREENS                          YYYY/MM/DD
Bin: currentbin                                                           HH:MM:SS

A/R -------NAME IN LIBRARY--------  ----------NEW NAME---------  --STATUS--
      TEST_SCREEN1                  TEST_SCREEN1                 ADDED
      TEST_SCREEN2                  TEST_SCREEN2                 ADDED
      TEST_SCREEN3                  TEST_SCREEN3                 ADDED
```

If you only want to copy some of the displayed entities, tab to the A/R column and erase the A or R using the space key.

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 R in the A/R column to replace and press ENTER. MANTIS will replace the existing entity and return 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 generic characters. For example, *2* will yield a list of all entities whose names contain a 2.

  ? Represents a single generic 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 which 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 action 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. Erase the A or the R using the space bar 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 action field or by pressing the corresponding PF key. MANTIS will display a complete list of entities, but the A/R column will be blank. Type A if you want to add the entity to the bin. Type 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 PA2 to return to the Copy from Library to Bin screen (see the illustration in “Copying from library to bin” on page 333). You can continue copying entities, or press PA2 again to exit to the Transfer Facility menu.

User file data

The User File Data option enables you to copy data records from a user file in your library to a previously copied user file profile in the current_bin. When you select the User File Data option from the Copy From Library to Bin menu (see the illustration in “Copying from library to bin” on page 333), the following screen displays:

```
                          COPY USER DATA TO BIN                    YYYY/MM/DD
BIN: current_bin                                                     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)
```

The current bin name is displayed at the top of the screen. Enter data as follows:

FILE NAME

Description *Required*. Identifies the file form which you are copying.

Format 1–16 alphanumeric characters.

STARTING KEY
ENDING KEY

Description STARTING KEY is *required*; ENDING KEY is *optional*. To specify a single record or multiple records, enter a single key value, a range of values, or a generic key pattern of 1–32 characters (see item 2 in "Copying multiple entities" which starts on page 359). 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. All records with the specified value in their first key field are copied.

FILE NAME IN BIN

Description *Optional*. Identifies the file in the bin.

Default FILE NAME entered on this screen.

Format 1–16 alphanumeric characters.

NEW KEY VALUE

Description *Optional*. Provides a new key value if you want a new key value in the bin.

Default STARTING KEY value entered on this screen (no new key value).

Format 1–32 alphanumeric characters.

(A)DD/(R)EPLACE

Description *Optional.* Specifies whether you want to add or replace records.

Default A

Options A Add only those records not already in the bin.

R Replace any records already in the bin and add new records.

After you supply the relevant data, press ENTER. A confirmation message appears in the lower left corner of the screen when the copy process is complete.

All user entities

The All User Entities option enables you to copy all entities in your library into the current bin. The User Profile is not copied. User profiles can only be copied by the Master User.

Move the cursor to the (A)DD/(R)EPLACE field. Accept the default value A (ADD) if you want to copy only those entities not already in the bin. Type R (REPLACE) over the A to copy all entities, replacing those already in the bin. Next, select the All User Entities option. A confirmation message appears in the lower left corner of the screen when the entities are copied.

Copying from bin to library

The Copy From Bin to Library option is the only step in the process of transferring entities into a library. This option enables you to copy entities from the current bin to your library.

You begin the Copy From Bin to Library option on the Transfer Facility menu (see "Transfer Facility menu" on page 329) by entering a bin name and password and pressing the corresponding PF key (or entering the corresponding number in the action field and pressing ENTER). The following screen displays:

```
                          COPY FROM BIN TO LIBRARY                    YYYY/MM/DD
BIN: current_bin                                                        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  ...........  14
TOTAL FILE VIEWS  ......  7             ALL USER ENTITIES  ........  24
EXTERNAL FILE VIEWS  ....  8             TERMINATE  ............  CANCEL

        STARTING NAME :                                  :
          ENDING NAME :                                  :
      (A)DD/(R)EPLACE : A :              WITH DATA : N :

            NEW NAME :                                   :
         NEW PASSWORD :
            LANGUAGE : ENGLISH                    :

                                  :    :
```

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 a library, a range of entities from the library, or all the entities in the library.

The following field descriptions apply to the Copy from Bin to Library screen:

BIN

Description *Display*. Shows the name of the current bin as specified through choosing an option on the Transfer Facility menu.

STARTING NAME

Description *Optional*. Indicates the name of the entity or the first name in a range of entities that you want to copy to a library.

Format 1- to 32-character alphanumeric existing program name or screen name.

1- to 16-character alphanumeric existing name for all other entities (see the table in "Copying from library to bin" on page 333).

ENDING NAME

Description *Optional*. Indicates the last name in a range of entities to be copied.

Format 1- to 32-character alphanumeric existing program name or screen name.

1- to 16-character alphanumeric existing name for all other entities (see the table in "Copying from library to bin" on page 333).

Consideration This field is required if you are copying a range of entities to a library. Leave this field blank if you are copying a single entity.

(A)DD/(R)EPLACE

Description *Required.* Indicates the action to be taken with the specified entities.

Default A

Options A ADD

R REPLACE

WITH DATA

Description *Required*. Indicates whether you want the MANTIS file data copied along with the MANTIS file profile.

Restriction For use only when copying MANTIS file profiles.

Default N

Consideration You can also use this field with the ALL option (see "Copying all user entities" on page 365).

NEW NAME

Description *Optional*. Specifies the new name you want to give to an entity being copied.

Format 1- to 32-character alphanumeric name.

Consideration You can specify a new name for only one entity at a time (see "Copying single entities" on page 353).

NEW PASSWORD

Description *Optional*. Supplies the password you want to give the entity in you library.

Default 1–32 alphanumeric characters.

Consideration Passwords are not changed on programs, and screens do not have passwords.

LANGUAGE

Description *Optional*. Supplies the language that is associated with the entity.

Default Your default language code.

Consideration The language specified here only applies to the transfer of screens and prompters. You cannot store multiple versions of an entity (e.g., entities with the same name, but different language codes) in the same library.

The following options are also available from the Copy from Bin to Library screen shown in "Copying multiple entities" on page 359.

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 12 in the action 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-hand corner of the current screen. MANTIS will route the printing trail to your designated printer.

HELP

Online help is available from the Copy from Library to Bin screen by typing a 13 in the action field and pressing ENTER or by pressing PF13. Press ENTER to page through the help prompters. Press PA2 to exit.

Copying single entities

You can copy a single entity from a bin to a library in one of the following ways:

- Type the name of the entity you want to copy in the STARTING NAME field and leave the ENDING NAME field blank.

  When 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 action field and press ENTER or press PF2. MANTIS copies the entity to the library and displays a confirmation message in the lower left-hand corner of the screen.

The following example shows a new screen, test-screen1, being copied to a library from a bin called current-bin. Type 2 (for screens) in the action field and press ENTER or PF2.

```
                        COPY FROM BIN TO LIBRARY                    YYYY/MM/DD
BIN: current-bin                                                      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  ...........  14
TOTAL FILE VIEWS  ......  7             ALL  ......................  24
EXTERNAL FILE VIEWS  ....  8            TERMINATE THIS FACILITY ... PA2

        STARTING NAME : test_screen1                    :
          ENDING NAME :                                 :
      (A)DD/(R)EPLACE : A :             WITH DATA : N :

             NEW NAME :                                 :
        NEW PASSWORD :

                                  :    :
```

- Select a single entity to be copied from an entity list that displays all of the entities in the bin. To display an entity list, leave the STARTING NAME and ENDING NAME fields blank at the Copy from Bin to Library panel (see the above illustration). Type the option number of the type of entity you want to copy in the action field and press ENTER, or press the corresponding PF key.

MANTIS returns the Copy to Library: *nnnn* entity list. The following example shows the Copy to Library: Screens entity list:

```
                          COPY TO LIBRARY: SCREENS                YYYY/MM/DD
 BIN: nnnnnn                                                        HH:MM:SS

A/R -------NAME IN BIN--------  ----------NEW NAME---------  --STATUS-- --
       TEST_SCREEN1                 TEST_SCREEN1                    US
       TEST_SCREEN2                 TEST_SCREEN2                    US
       TEST_SCREEN3                 TEST_SCREEN3                    US
```

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 is displayed beginning with the entry corresponding to, or the first entry following, your repoint value.

The NEW PASSWORD field is displayed 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-hand corner of the screen and pressing ENTER. Window mode PF keys will be displayed 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 This field was specified at the Copy from Bin to Library panel.

BIN

Description *Display*. Shows the name of the bin from which the entities are being copied.

Consideration This field is specified at the Transfer Facility menu.

A/R

Description *Optional*. Indicates the action you want to take with the entity.

Options

A Add

R Replace

(Blank) No action to be taken.

NEW NAME

Description *Optional*. Indicates the new name of the entity as it will appear in the library.

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- to 32-character alphanumeric password (only the first 16 characters are displayed).

Default User password.

Considerations

- Type the new password over the existing password. MANTIS file names are only 16 characters in length, so only the first 16 characters of this field are used.
- 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 will be displayed to enable you to move around the screen. Press PF9 to exit window mode.

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 A in the A/R column as shown in the following example:

```
                          COPY TO LIBRARY: SCREENS                YYYY/MM/DD
 BIN: currnet_bin                                                   HH:MM:SS

A/R -------NAME IN BIN--------  ----------NEW NAME---------  --STATUS-- --US
       TEST_SCREEN1                 TEST_SCREEN1                       --US
 A     TEST_SCREEN2                 TEST_SCREEN2                       --US
       TEST_SCREEN3                 TEST_SCREEN3                       --US
```

When you press ENTER, MANTIS copies the screen to your library and displays a confirmation message in the STATUS field, as shown in the following example:

```
                          COPY TO LIBRARY: SCREENS                 YYYY/MM/DD
 BIN: current_bin                                                    HH:MM:SS

A/R -------NAME IN BIN--------  ----------NEW NAME---------  --STATUS-- --US
       TEST_SCREEN1                 TEST_SCREEN1                       --US
       TEST_SCREEN2                 TEST_SCREEN2             ADDED     --US
       TEST_SCREEN3                 TEST_SCREEN3                       --US
```

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 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

You can copy multiple entities from a bin to a library in one of two ways:

1. Specify a range of entities to be copied at the Copy from Bin to Library screen (see the example below) Follow these steps:

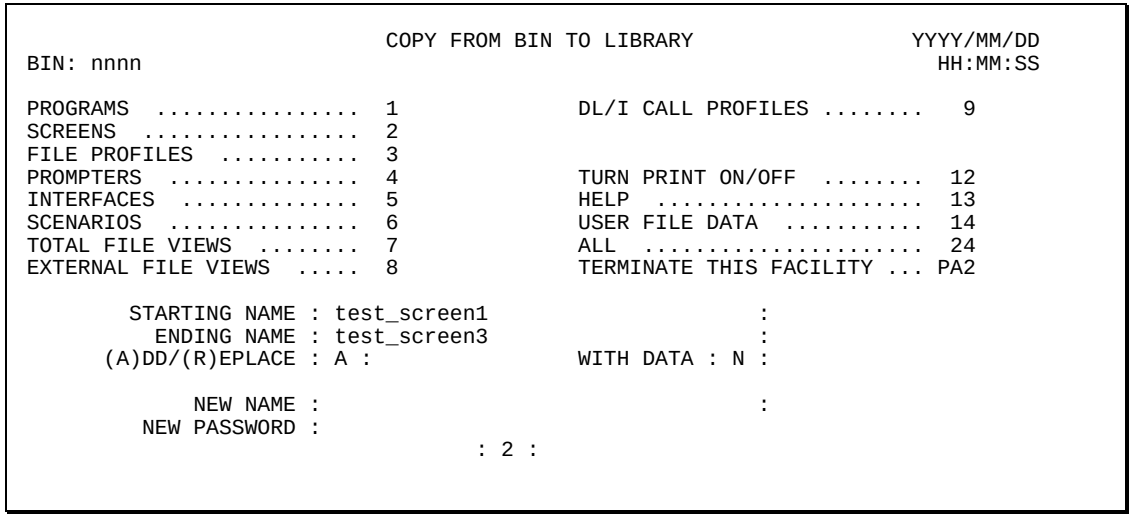
   a. Type the name of the entity where you wish the copy to begin in the STARTING NAME field.

   b. Type the name of the entity where you want the copy to end in the ENDING NAME field.

   c. 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 R over the A in this field.

      To execute, type the entity option number (1–9) in the action field and press ENTER or press the corresponding PF key.

   The following example shows how to copy a range of screens (test_screen1 to test_screen3) from a bin to a library:



When you press ENTER, MANTIS returns the Copy to Library: Screens entity list shown in the following example. 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.

```
                            COPY TO LIBRARY: SCREENS                 YYYY/MM/DD
 BIN: current_bin                                                      HH:MM:SS

A/R -------NAME IN BIN--------  ----------NEW NAME---------  --STATUS-- --US
 A     TEST_SCREEN1                 TEST_SCREEN1                       --US
 A     TEST_SCREEN2                 TEST_SCREEN2                       --US
 A     TEST_SCREEN3                 TEST_SCREEN3                       --US
```

When you press ENTER, MANTIS copies the screens to your library and displays a confirmation message in the STATUS field, as shown in the following example:

```
                          COPY TO LIBRARY: SCREENS                 YYYY/MM/DD
 BIN: current_bin                                                    HH:MM:SS

A/R -------NAME IN BIN--------  ----------NEW NAME---------  --STATUS-- --US
       TEST_SCREEN1                 TEST_SCREEN1            ADDED      --US
       TEST_SCREEN2                 TEST_SCREEN2            ADDED      --US
       TEST_SCREEN3                 TEST_SCREEN3            ADDED      --US
```

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 R in the A/R column to replace and press ENTER. MANTIS will replace the existing entity and return the confirmation message, REPLACED.

2. 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 generic characters. For example, *2* will yield a list of all entities whose names contain a 2.

   ? Represents a single generic 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 which 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 action 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. Erase the A or the R using the space bar 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 action field or by pressing the corresponding PF key. MANTIS will display a complete list of entities, but the A/R column will be blank. Type A if you want to add the entity to the library. Type 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 PA2 to return to the Copy from Bin to Library screen (see the second illustration in "Copying multiple entities" on page 342). You can continue copying entities, or press PA2 again to exit to the Transfer Facility menu.

User file data

The User File Data option allows you to copy data records from a user file in the current bin to a user file profile in your library. When you select the User File Data option from the Copy From Bin to Library menu (see the fourth illustration in "Copying single entities" on page 337), the following screen displays:

```
                          COPY USER DATA TO LIBRARY                YYYY/MM/DD
BIN: current_bin                                                     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)
```

The current bin name appears at the top of the screen. Enter data as shown below:

FILE NAME IN BIN

Description *Required*. Identifies the file from which you are copying.

Format 1–16 alphanumeric characters.

STARTING KEY
ENDING KEY

Description STARTING KEY is *required*; ENDING KEY is *optional*. To specify single or multiple records, enter a single key value, a range of values, or a generic key pattern of 1–32 characters (see item 2 under "Copying multiple entities" which starts on page 359). 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. All records with the specified value in their first key field are copied.

FILE NAME IN LIBRARY

Description *Optional*. Supplies the name of the file in your library.

Default FILE NAME IN BIN entered on this screen.

Format 1–16 alphanumeric characters.

NEW KEY VALUE

Description *Optional.* Supplies a new key value only if you want a new key value in your library.

Default STARTING KEY entered on this screen.

Format 1–32 alphanumeric characters.

(A)DD/(R)EPLACE

Description *Optional*. Specifies whether you want to add or replace records.

Default A

Options A Add only those records not already in the bin.

R Replace any records already in the bin and add new records.

After you have supplied the relevant data, press ENTER. A confirmation message appears in the lower left corner of the screen when the copy process is complete.

Copying all user entities

The All User Entities option allows you to copy all entities in the current bin into you library. Specifies WITH DATA = Y to copy the user file data. Move the cursor to the (A)DD/(R)EPLACE field. Accept the default value A (ADD) if you do not want entities copied if they are already in your library. Type R if you want them copied. Next, select the All User Entities option. A confirmation message appears in the lower left corner of the screen when the entities are copied.

Deleting entities from a bin

You can delete specific entities from a bin using the Delete from Bin option on the Transfer Facility menu (see “Transfer Facility menu” on page 329). 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 action field and pressing ENTER or by pressing PF4. MANTIS returns the Delete from Bin menu as shown in the following example:

```
                          DELETE FROM BIN                          YYYY/MM/DD
BIN: current_bin                                                     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  ...........  14
TOTAL FILE VIEWS  ........  7
           TERMINATE THIS FACILITY ... PA2

        STARTING NAME :                                  :
          ENDING NAME :                                  :
                                 :  :
```

The current bin name appears in the upper left-hand corner of the screen. From this screen, you can delete single or multiple entities.

The following field descriptions apply to the Delete from Bin panel shown above:

BIN

Description *Display*. Shows the current bin as specified on the Transfer Facility menu.

STARTING NAME

Description O*ptional*. Indicates the name of the entity or the first name in a range of entities that you want to delete from a bin.

Format 1- to 32-character alphanumeric existing entity name.

ENDING NAME

Description *Optional*. Indicates the last name in a range of entities to be deleted.

Format 1- to 32-character alphanumeric existing entity name.

Consideration This field is required if you are deleting a range of entities from a bin.

Deleting single entities

You can delete a single entity from a bin in one of two ways:

1. Type the name of the entity you want to delete in the STARTING NAME field and leave the ENDING NAME field blank. To execute, type 2 in the action field and press ENTER or press PF2. MANTIS deletes the entity from the bin and displays a confirmation message, DELETED, in the lower left-hand corner of the screen. In the following example, the screen test_screen1 has been entered:

```
                          DELETE FROM BIN                          YYYY/MM/DD
BIN: current_bin                                                     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  ...........  14
TOTAL FILE VIEWS  ......  7
            TERMINATE THIS FACILITY ... PA2

        STARTING NAME : test_screen1                                :
          ENDING NAME :                                 :
                                 :  :
```

2. The other way to delete a single entity is to select the entity to delete from an entity list. To obtain a list of the entities in a bin, type the entity option number in the action field at the Delete from Bin screen and press ENTER, or the corresponding PF key. MANTIS returns the following Delete from Bin entity list:

```
                          DELETE FROM BIN: SCREENS                YYYY/MM/DD
 BIN: current_bin                                                   HH:MM:SS

DEL --------NAME IN LIBRARY----  ---CREATED BY----  --DATE-- --STATUS
      TEST_SCREEN1               USERNAME           YYYY/MM/DD
      TEST_SCREEN2               USERNAME           YYYY/MM/DD
      TEST_SCREEN3               USERNAME           YYYY/MM/DD
```

Page through the entity list by pressing ENTER or by using the repoint option. TAB to the lower-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 is displayed 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 previous example:

DELETE FROM BIN

Description Shows the type of entity list being displayed.

Consideration This field was specified at the Delete from Bin panel.

BIN

Description *Display*. Shows the name of the bin from which the entities are being deleted.

Consideration This field is specified at the Transfer Facility menu.

DEL

Description *Optional*. Indicates the action to be taken on the entity.

Options D Delete the entity.

(Blank) No action to be taken.

NAME IN LIBRARY

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.

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 D in the DEL column, as shown in the following example:

```
                              DELETE FROM BIN: SCREENS                YYYY/MM/DD
 BIN: current_bin                                                       HH:MM:SS

DEL --------NAME IN LIBRARY----  ---CREATED BY----  --DATE-- --STATUS
 D    TEST_SCREEN1               USERNAME           YYYY/MM/DD
      TEST_SCREEN2               USERNAME           YYYY/MM/DD
      TEST_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, as shown in the following example:

```
                          DELETE FROM BIN: SCREENS                YYYY/MM/DD
 BIN: current_bin                                                   HH:MM:SS

DEL --------NAME IN LIBRARY----  ---CREATED BY----  --DATE-- --STATUS
      TEST_SCREEN1               USERNAME          YYYY/MM/DD  DELETED
      TEST_SCREEN2               USERNAME          YYYY/MM/DD
      TEST_SCREEN3               USERNAME          YYYY/MM/DD
```

Deleting multiple entities

You can delete multiple entities from a bin in one of two ways:

1. Specify a range of entities to be deleted at the Delete from Bin screen (see the second illustration in "Copying single entities" on page 337). Follow these steps:

   a. Type the name of the entity where you wish the delete to begin in the STARTING NAME field.

   b. Type the name of the entity where you want the delete to end in the ENDING NAME field.

   c. To execute, type the entity option number (1–9) in the action field and press ENTER or press the corresponding PF key.

   The following example shows how to delete a range of screens (test_screen2 to test_screen4) from a bin:

```
                          DELETE FROM BIN                          YYYY/MM/DD
BIN: current_bin                                                     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  ...........  14
TOTAL FILE VIEWS  ........  7
            TERMINATE THIS FACILITY ... PA2

        STARTING NAME : test_screen2                                :
          ENDING NAME : test_screen4                                 :
                                : 2 :
```

When you execute the action, MANTIS returns the Delete from Bin: Screens entity list shown in the following example. This list displays the range of entities you specified on the previous screen and places a D (DELETE) in the DEL column.

```
                          DELETE FROM BIN: SCREENS                YYYY/MM/DD
 BIN: current_bin                                                   HH:MM:SS

DEL --------NAME IN LIBRARY----  ---CREATED BY----  --DATE-- --STATUS
 D    TEST_SCREEN2               USERNAME         YYYY/MM/DD
 D    TEST_SCREEN3               USERNAME         YYYY/MM/DD
 D    TEST_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, as shown in the following example:

```
                          DELETE FROM BIN: SCREENS                YYYY/MM/DD
 BIN: current_bin                                                   HH:MM:SS

DEL --------NAME IN LIBRARY----  ---CREATED BY----  --DATE-- --STATUS
      TEST_SCREEN2               USERNAME         YYYY/MM/DD  DELETED
      TEST_SCREEN3               USERNAME         YYYY/MM/DD  DELETED
      TEST_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.

2. 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 (?) as follows:

   * Represents an indefinite number of generic characters. For example, *2* will yield an entity list of all entities whose names contain a 2.

   ? Represents a single generic 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 which 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 action field and press ENTER or press the corresponding PF key. MANTIS places an D in front of every entity on the list. Erase the D if it appears before an entity you do not wish 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 action field and press ENTER or press the corresponding PF key. MANTIS will display a complete list of entities, but the DEL column will be blank. Type 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 marker entities are deleted. Press PA2 to return to the Delete from Bin screen (see the second illustration in "Copying single entities" on page 353). Press PA2 again to exit to the Transfer Facility menu (see "Transfer Facility menu" on page 329).

Deleting user file data

The User File Data option lets you delete data records from a user file previously copied to the current bin. When you select the User File Data option from the Delete From Bin menu (see the illustration in “Deleting single entities” on page 368), the following screen displays:

```
                          DELETE USER DATA IN BIN                  YYYY/MM/DD
BIN: current_bin                                                     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 is at the upper-left corner of the screen. Enter data as follows:

FILE NAME IN BIN

Description *Required*. Specifies a name for the file from which you are deleting.

Format 1–16 alphanumeric characters.

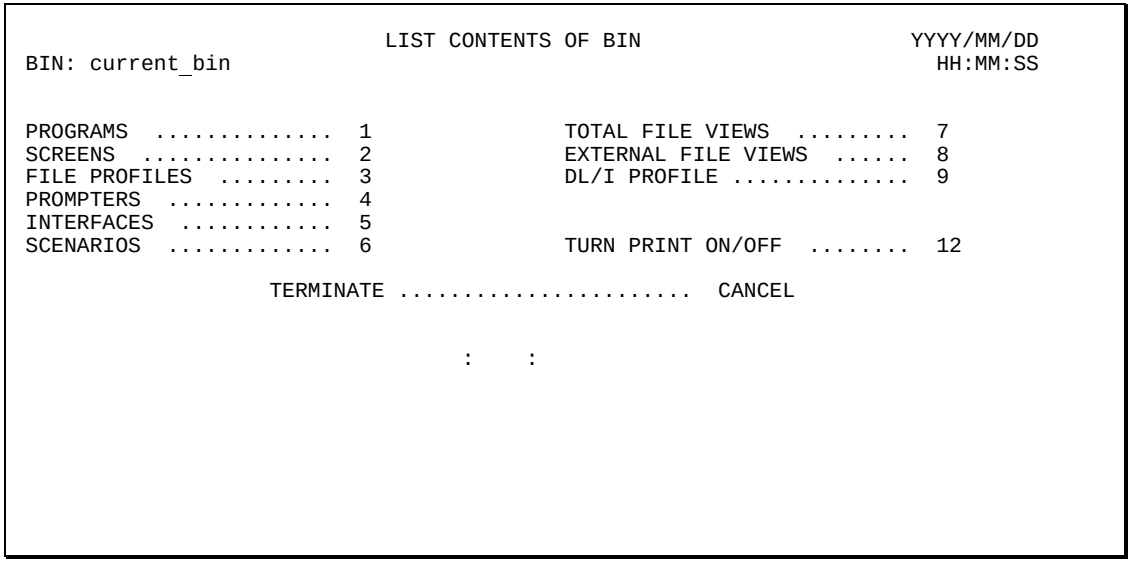
STARTING KEY
ENDING KEY

Description STARTING KEY is *required*; ENDING KEY is *optional*. To specify single or multiple records, enter a single key value, a range of key values, or a generic key pattern of 1–32 characters (see item 2 under "Deleting multiple entities" which starts on page 373). 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. All records with the specified value in their first key field are deleted.

After you supply the relevant data, press ENTER. A confirmation message appears in the lower left corner of the screen when the deletion is complete.

Listing the contents of the current bin

The List Contents of Bin option enables you to view the current bin contents for any entity type (programs, screens, views, etc.). To indicate the bin you want to use, enter the bin name and password on the Transfer Facility menu. This becomes your current bin. When you select the List Contents of Bin option, the following menu displays:



Your current bin name appears in the upper left corner of this screen. To select the entity type for which you want a listing, press the corresponding PF key or enter the corresponding number in the action field and press ENTER.

A directory listing of all entities of that type (programs, screens, etc.) in the current bin appears in the following format. If you select the Field Profiles option, an additional column, Count, appears on the screen, giving the number of records in each listed file. The directory listings for screens and prompters also display language codes.

```
                    BIN CONTENTS: entity_type                      YYYY/MM/DD
BIN: current_bin                                                     HH:MM:SS

-------------NAME-------------   -----LAST UPDATED BY------   --DATE--




        (PRESS ENTER FOR MORE; PF1 TO SKIP TO NEXT TYPE; CANCEL TO EXIT)
```

To page through the directory, press ENTER. To position the display at a specific point, use the repoint option. This repoint value represents the new starting position of the directory, but is still within the original selection criteria (you cannot specify a generic pattern in the repoint value). To use the repoint option, type 1–30 alphanumeric characters (representing a portion of an entity name) in the Unsolicited Input field and press ENTER. The directory will be displayed alphabetically, beginning with the entry corresponding to or the first entry following your repoint value.

To skip to the next entity type, press PF1 (e.g., if the screen currently lists prompters, you can skip to a listing of interfaces by pressing PF1). Pressing PF1 has the same effect as your returning to the List Contents of Bin menu and selecting the next option.

Press CANCEL to return to the List Contents of Bin menu (shown at the beginning of this section), and press CANCEL again to return to the Transfer Facility menu (see “Transfer Facility menu” on page 329).

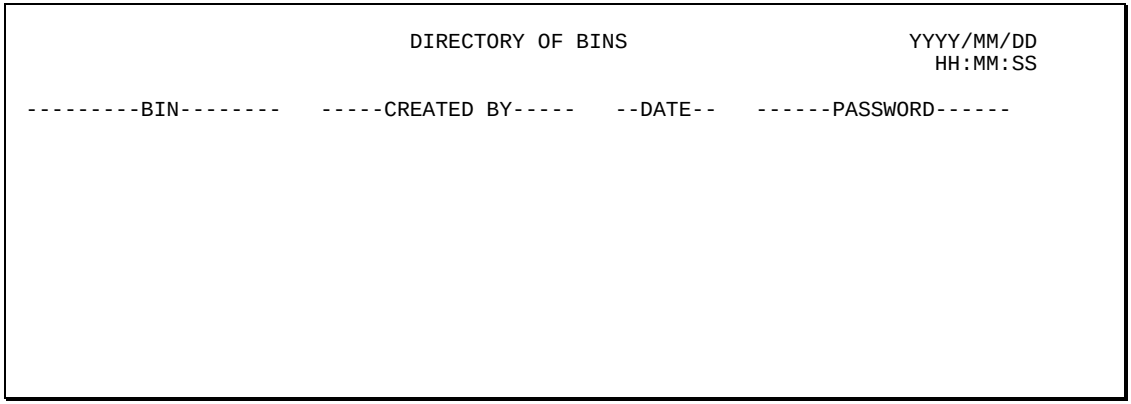
Changing the bin password

The Change Password for Bin option allows you to give a new password to the current bin. At the Transfer Facility menu (see "Transfer Facility menu" on page 329), enter a bin name and password. When you select the Change Password for Bin option, you are prompted for a new password. (The Transfer Facility menu remains on your screen). Type the new password over the old one in the Password field and press ENTER.

MANTIS returns a confirmation message in the lower left corner of the screen upon completion of the change. You may go on to any option on the menu, or press CANCEL to return to the Facility Selection menu (see the illustration in "Signing on to MANTIS" on page 41).

Directory of bins

The Directory of Bins option displays a listing of all bins in the Transfer file. When you select the Directory of Bins option from the Transfer Facility menu (see “Transfer Facility menu” on page 329), the following screen displays:



Bin names are listed as well as the name of the creator and the date of creation. Passwords also appear if you are the Master User or the creator of the bin.

To page through the directory, press ENTER. To position the display at a specific point, use the repoint option. This repoint value represents the new starting position of the directory, but is still within the original selection criteria (you cannot specify a generic pattern in the repoint value). To use the repoint option, type 1–30 alphanumeric characters (representing a portion of a bin name) in the Unsolicited Input field, and press ENTER. The directory will be displayed alphabetically, beginning with the bin name corresponding to or the first bin name following your repoint value.

Note the name and password of the bin you will use if it has been created. Press CANCEL to return to the Transfer Facility menu (see “Transfer Facility menu” on page 329).

Additional options

These remaining options are also found on the Transfer Facility menu (see “Transfer Facility menu” on page 329).

Turn printer trail on or off

The Turn Print ON/OFF function allows you to switch on or off a printing trail which shows the results of all updates made while the feature is active. The printed copies are routed to your designated printer.

You can switch the printing trail on or off from any screen in the Transfer Facility (except Help screens). When the feature is active, the word PRINT appears in the upper left corner of the screen.

From the Transfer Facility menu (see “Transfer Facility menu” on page 329), or any other menu in the Transfer Facility, press the PF key corresponding to the print option. If print is on, it is turned off and vice versa, as long as you remain in the Transfer Facility or until you press the key again.

On all screens in the Transfer Facility (except Help screens) that are not menus, you may switch printing on or off by pressing PF12 or by entering PF12 in the Key Simulation field and pressing ENTER.

Help

The HELP option enables you to access a prompter. Press ENTER to page through the prompter for relevant information. Press CANCEL to exit from the prompter.

Delete entire bin

The Delete Entire Bin option enables you to delete a specified bin and its contents. At the Transfer Facility menu (see “Transfer Facility menu” on page 329), enter the bin name and password of the bin you want to delete. When you select the Delete Entire Bin option, MANTIS returns a message asking you to confirm the deletion. To confirm the selection, press ENTER or the PF key again. To terminate the deletion, press CANCEL.

You can proceed to any option on the Transfer Facility menu, or press CANCEL to return to the Facility Selection menu (see the illustration in “Signing on to MANTIS” on page 41).

9

Miscellaneous facilities

So far we have discussed the facilities of screen, file, prompter, interface, and program design. We will discuss the other facilities available on the MANTIS Facility Selection menu in this chapter.

Facility selection menu

Other facilities available on the MANTIS Facility Selection menu are shown in the following example:

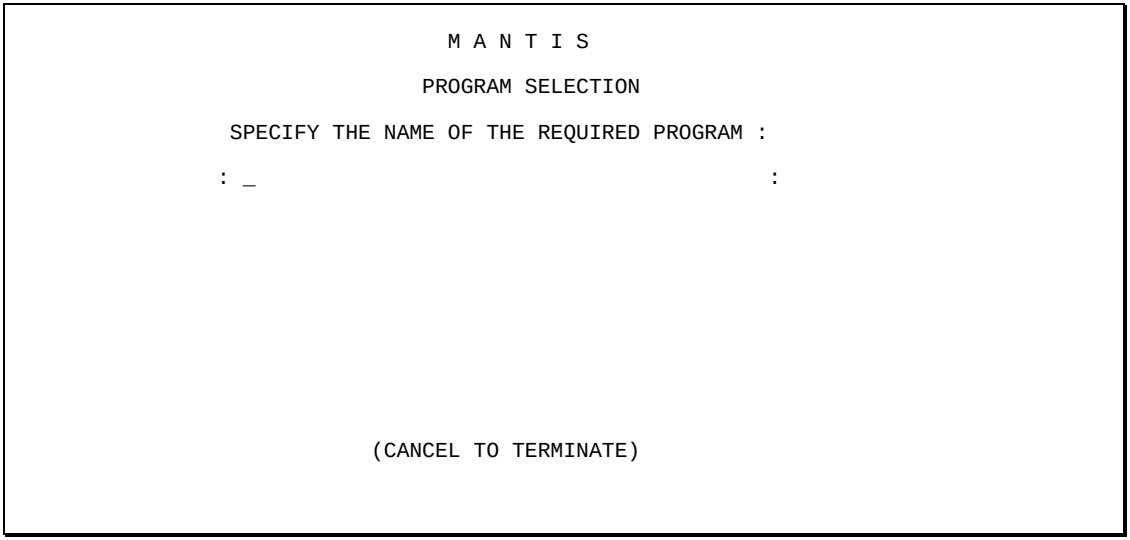
```
                              M  A  N  T  I  S

                            FACILITY SELECTION

    RUN A PROGRAM BY NAME ........  1     SIGN ON AS ANOTHER USER .....  11
:   DISPLAY A PROMPTER ...........  2     MANTIS RUN SYSTEM ...........  12
:   DESIGN A PROGRAM .............  3     RUN A SCENARIO ..............  13
    DESIGN A SCREEN ..............  4     DIRECTORY FACILITY ..........  14
    DESIGN A FILE ................  5     TRANSFER FACILITY ...........  15
    DESIGN A PROMPTER ............  6     DL/I FACILITY ...............  16
    DESIGN AN INTERFACE ..........  7
    DESIGN A TOTAL FILE VIEW .....  8
    DESIGN AN EXTERNAL FILE VIEW .  9
    DESIGN A SCENARIO ............ 10     TERMINATE MANTIS ......... CANCEL


                                  :    :
```

These miscellaneous facilities enable you to:

- Run a program by name without going into programming mode (see “Running a program by name” on page 387).
- Display a prompter (see “Display a prompter” on page 389).
- Sign on as another user (see “Signing on as another user” on page 392).
- View and print directories of programs, screens, files, prompters, interfaces, TOTAL and external file views, and scenarios (see “Directory facility” on page 393).

Running a program by name

The Run a Program by Name Facility enables you to run a program from your own or another user's library without going into programming mode. When you select the Run a Program by Name option from the Facility Selection menu (see "Facility selection menu" on page 386), the following screen displays:



Enter the program name. A password is not required because you may only execute the program. You cannot list, inspect, or modify it in any way. Enter the program name as follows:

SPECIFY THE NAME OF THE REQUIRED PROGRAM

Description *Required*. Specifies the program name. A password is not required because you can only execute the program; you cannot list, inspect, or modify it.

Format [*user-name*:]*program-name*

USER-NAME

Description *Optional*. Specifies the user name only if the program to be executed is from a library other than the one you signed on to.

Default Your sign-on name.

PROGRAM-NAME

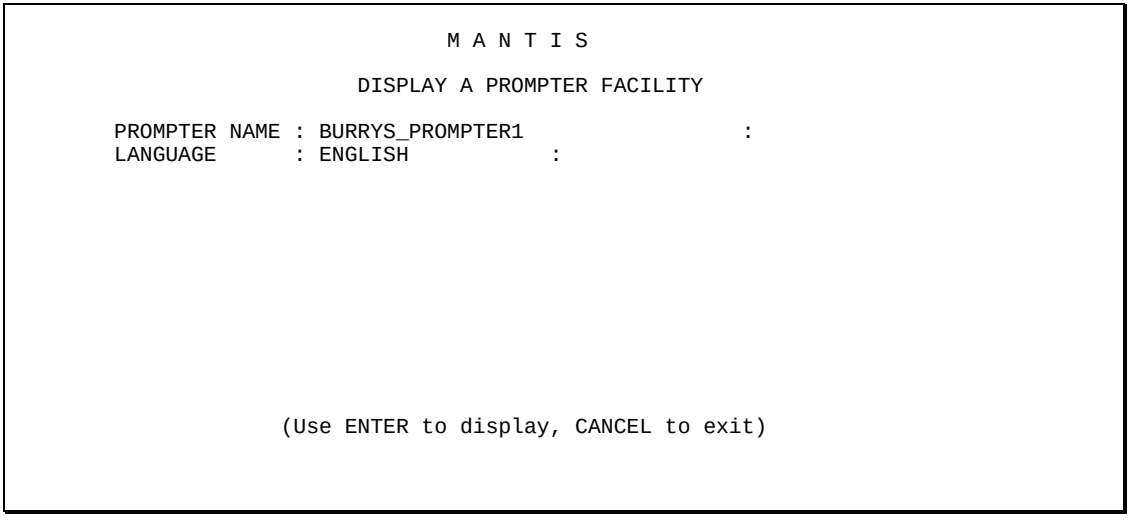
Description *Optional*. Indicates the name of a valid program in your or another user's library.

When you press ENTER, the program executes. If the program name is not found, you may enter another name. When the program finishes executing, MANTIS returns you to the Facility Selection menu (see "Facility selection menu" on page 386).

Display a prompter

The Display a Prompter Facility enables you to view prompters; you cannot alter the contents of a prompter when you use this facility. You must use the Prompter Design Facility (see “Prompter design” on page 171) if you want to change a prompter.

Select the Display a Prompter option from the MANTIS Facility Selection menu (see “Facility selection menu” on page 386), and the following screen displays. Enter the name of the prompter you want to display and press ENTER (BURRYS_PROMPTER1 is specified in this example):



PROMPTER NAME

Description *Required*. Specifies the name of a prompter.

Format [*user-name*:]*prompter-name*

USER-NAME

Description *Optional*. Used only if the prompter resides in another user's library.

Default Your sign-on name.

PROMPTER-NAME

Description *Required*. Indicates the name of the prompter you want to view.

LANGUAGE

Description The default language of the prompter.

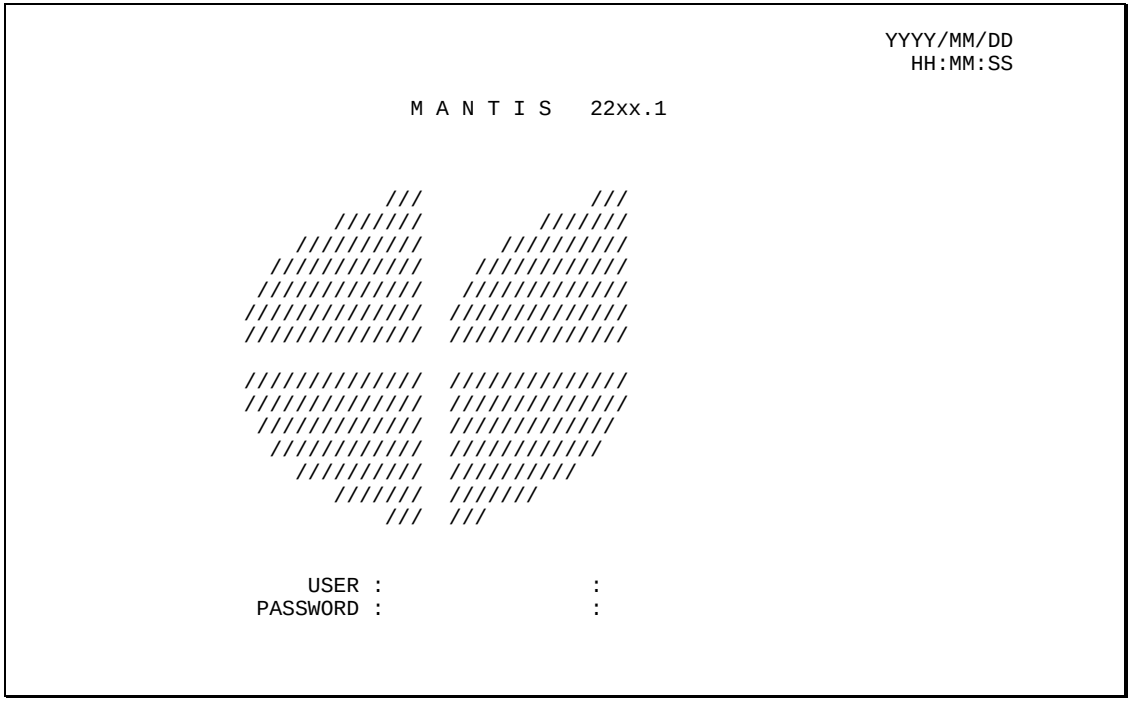
When you press ENTER, the prompter appears. The following example shows a sample prompter:

```
                    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 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
```

A heading is centered at the top of the screen in bright intensity. This heading is obtained from the description you supplied when the prompter was designed and saved. To page through a prompter, press ENTER. When all prompter information has been displayed (including any prompters which may be chained to this one), you will return to the Display a Prompter Facility screen. Press CANCEL to return to the Facility Selection menu

Signing on as another user

The Sign On as Another User Facility enables you to sign on to another user from the Facility Selection menu. When you select this option from the Facility Selection menu, the following sign-on screen displays (in this example, the Cincom logo appears as the sign-on screen, but your sign-on screen may be different):



Supply the name and password of the user whose library you wish to access. When you press ENTER, that user's Facility Selection menu displays.

Directory facility

Use the Directory Facility to view or print an alphabetical listing of all current programs, screens, files, prompters, interfaces, and/or views in your library. When you select the Directory Facility option from the Facility Selection menu (see “Facility selection menu” on page 386), the following screen displays:

```
                              M  A  N  T  I  S

                           DIRECTORY FACILITY

LIST PROGRAMS ..............  1     PRINT PROGRAMS ..............  10
LIST SCREENS ...............  2     PRINT SCREENS ...............  11
LIST FILES .................  3     PRINT FILES .................  12
LIST PROMPTERS .............  4     PRINT PROMPTERS .............  13
LIST INTERFACES ............  5     PRINT INTERFACES ............  14
LIST TOTAL FILE VIEWS ......  6     PRINT TOTAL FILE VIEWS .....   15
LIST EXTERNAL FILE VIEWS ...  7     PRINT EXTERNAL FILE VIEWS ...  16

LIST SCENARIOS .............  9     PRINT SCENARIOS .............  18

                 TERMINATE .....................CANCEL


                                    : _ :
```

Select the option corresponding to the directory you want to view or print. You may enter a repoint value on the Directory Facility screen to position the display at a specific point. To use the repoint option, type 1–30 alphanumeric characters (representing a portion of an entity name) in the Unsolicited Input field of any Directory Facility screen (including this menu) and press ENTER. The directory will be displayed alphabetically, beginning with the entry corresponding to or the first entity following your repoint value.

When you finish viewing the directory, press CANCEL or ENTER to redisplay the Facility Selection menu. MANTIS returns the Facility Selection menu when you finish printing the directory.

Each entity directory can also be accessed through its own design facility. Sample directory screens appear where each facility is discussed.

10

DL/I Call Profile Design Facility

The DL/I Call Profile Design Facility provides a menu of options to create, maintain, and view DL/I Call Profiles to be executed on MANTIS for the IBM mainframe. To access DL/I Call Profiles, you must migrate them to the mainframe by using the Universal Export Facility. This chapter explains how to create and modify DL/I Call Profiles using MANTIS for Windows. Refer to the *MANTIS User's Guide—DL/I Access Supplement*, P19-0008, for programming considerations.

DL/I Call Profile Design Facility menu

When you access the DL/I Call Profile Design Facility from the Facility Selection menu (see the illustration in "Signing on to MANTIS" on page 41), the following screen displays:

```
                    M  A  N  T  I  S

          DL/I CALL PROFILE DESIGN FACILITY

     CREATE OR UPDATE PROFILE DEFINITION ..... 1
     UPDATE PROFILE LAYOUT ................... 2
     LIBRARY FUNCTIONS ....................... 3
     LIST DIRECTORY OF PROFILES .............. 4
     PRINT DIRECTORY OF PROFILES ............. 5
     PRINT COMPLETED DESIGN .................. 6
     TERMINATE THIS FACILITY ............. CANCEL


                         : _ :
```

The DL/I Call Profile Design Facility provides a menu of options to create, maintain, view, and print Call Profiles. To create a new Call Profile, select option 1, option 2, and then option 3 from the DL/I Call Profile Design Facility menu.

To choose a new option in the DL/I Call Profile Design Facility, you must always return to this menu. Remember to save your Call Profile design (using the Library Functions option) before exiting this facility.

The following table provides an overview of the options available in the DL/I Call Profile Design Facility and where the option is discussed:

This option	Enables you to. . .	See
Create or Update Profile Definition	Create a new Call Profile or update the definition of an existing Call Profile.	"Create or update the profile definition" on page 397.
Update Profile Layout	Specify the DL/I Segment Search Arguments (SSAs) in the hierarchical path of the call.	"Update the profile layout" on page 399.
Library Functions	Save new Call Profile designs, and retrieve, replace, and delete existing Call Profile designs.	"Library functions" on page 408.
Directory of Call Profiles	View and print an alphabetical listing of all existing Call Profiles.	"Directory of call profiles" on page 411.
Print Completed Design	Print the Call Profile currently in your work area.	"Print the completed design" on page 412.

Create or update the profile definition

The Create or Update Profile Definition option enables you to create a new Call Profile or update the definition of an existing Call Profile. When you select this option from the DL/I Call Profile Design Facility menu (see the illustration in "Signing on to MANTIS" on page 41), the following screen displays:

```
                        M  A  N  T  I  S

                    DL/I PROFILE DESIGN

NAME OF PROFILE ........ :                    :
DESCRIPTION ............ :                                  :

PSB NAME ............... :           :
RELATIVE DB PCB NUMBER.. :     :
```

If you are updating an existing Call Profile, or returning to this option after performing other options, the Call Profile currently in your work area will appear.

To create a new Call Profile, enter the data described below:

NAME OF PROFILE

Description *Required*. Supplies a name for this Call Profile.

Format 1–16 alphanumeric characters.

DESCRIPTION

Description *Optional*. Provides a description of the design for the Directory of Call Profiles.

Format 1–32 alphanumeric characters (may contain blanks and special characters).

PBS NAME

Description *Required*. Provides the name of the PBS (Program Specification Block) to be used for accessing the DL/I database when using this Call Profile.

RELATIVE DB PCB NUMBER

Description *Required*. Provides the Relative DB PCB (Program Communication Block) number (relative to 1) in the PSB to be used for accessing the DL/I database when using this Call Profile. (When TP PCBs precede the DB PCBs in the PSB, they will not be included in the relative DB PCB calculation.)

Press ENTER to store your entries. MANTIS will return you to the DL/I Call Profile Design Facility menu (see "DL/I Call Profile Design Facility menu" on page 395).

Update the profile layout

Use the Update Profile Layout option to specify the DL/I Segment Search Arguments (SSAs) in the hierarchical path of the call. Each one of these SSAs may be specified further by qualification lists.

An SSA consisting of only a name (DL/I segment name) is known as an unqualified SSA. The DL/I Call will process the next segment occurrence.

An SSA consisting of a name and number of qualification statements is known as a qualified SSA. The DL/I Call will process a particular segment occurrence. Qualified SSAs can have 1–12 qualification statements, each qualification statement consisting of DL/I search field information. Multiple qualification statements are connected by Boolean connectors (logical AND or logical OR).

Retrieval calls may use qualified or unqualified SSAs, as required. Insert calls may also use qualified or unqualified SSAs, but if qualified SSAs are used, the SSA with the lowest level in the hierarchy must be unqualified. Delete and replace calls must use unqualified SSAs.

When you select the Update Profile Layout option from the DL/I Call Profile Design Facility menu, the following screen displays:

```
                          DL/I CALL PROFILE LAYOUT

------------------------------DL/I SEGMENTS---------------------------------

           ACT         DLI SEGMENT      COMMAND CODES
           - -          -                 -




      (USE PF1 - PF15 TO ADD SEARCH FIELD INFORMATION; USE CANCEL TO EXIT)
```

Each dash (-) represents a built-in tab for this function.

The message "**QUAL**" will appear at the right of the Call Profile SSA if it has associated search field information.

The maximum number of SSAs in a hierarchy is 15, each line representing one SSA in the hierarchy.

Press the PF key corresponding to the line number of an SSA to view, or specify search field information for that SSA. If PF keys are not available on your terminal, type S (for select) in the ACT field next to the SSA you wish to qualify.

If you are updating an existing Call Profile Layout, or returning to this function after performing other functions, the Call Profile Layout currently in your work area will appear on the screen.

Enter the Call Profile Layout data as described below:

ACT

First Tab Position

Description *Optional*. Specifies an action indicator.

Options

A Alter this line. Key new information over the existing fields.

I Insert this line.

D Delete this line.

S Search field information is to be added or updated for this SSA.

Second Tab Position

Description *Optional*. Indicates the relative SSA number when inserting a new SSA.

Considerations

- If you do not number your SSAs, MANTIS will assign the numbers and store them in the sequence entered.
- You can insert one or more SSAs between two existing SSAs. For example, if you want to insert an SSA between SSAs 4 and 5, insert the new SSA at line 4, and press ENTER. MANTIS renumbers the new SSA as line 5, the original line 5 as line 6, 6 as 7, and so on.
- If you delete an SSA during an update, MANTIS will renumber all subsequent SSA numbers.

DL/I SEGMENT

Description *Required*. Supplies a name for the DL/I segment being referenced by this SSA.

Format 1–8 characters.

Consideration The name should already be defined in the DL/I DBDGEN.

COMMAND CODES

Description *Optional*. Supplies the DL/I command codes for the current level of qualification.

Format Specify the command codes in a contiguous string of letters representing the required commands.

Options C, D, F, L, N, P, Q, U, V (Refer to your DL/I or IMS manual for an explanation of each command code.)

Considerations

- Do not specify any command code twice in a call.
- If you specify an SSA with a command code of C, it must be the first and only SSA in the Call. When you run a program that uses an SSA with the C command code, use the semi-reserved words DLI-KFBLEN and DLI-KFBARE to pass the length and the concatenated key to the DL/I interface. A previous DL/I Call may have filled these fields. the DL/I interface uses these fields to internally build an SSA of the concatenated key format.

Press ENTER to save your entries.

If you have chosen to qualify an SSA by entering the letter S in the ACT field, the following screen displays:

```
                DL/I CALL PROFILE SEARCH FIELD LIST

  DL/I SEGMENT NAME: segment_ name

  SSA SEARCH LIST:                                          BOOLEAN
ACT   SEARCH FIELD     MANTIS NAME    TYPE   SIGN   LGTH   OPER   CONN.
- -   -                 -              -      -      -      -      -



          ( USE CANCEL TO RETURN TO PROFILE LAYOUT )
```

Each dash (-) represents a built-in tab for this function. The maximum number of qualification statements for an SSA is 12, each line representing one search argument for the SSA.

MANTIS maintains the following entry:

DL/I SEGMENT NAME

Description The name of the segment to which the Qualification List is related.

Enter the data as described below:

ACT

First Tab Position

Description *Required*. Enter an action indicator.

Options A Alter this line. Key new information over the existing fields.

I Insert this line.

D Delete this line.

Second Tab Position

Description *Optional*. Indicates the relative qualification statement number when inserting a new qualification statement.

Considerations

- If you do not number your qualification statements, MANTIS will number and store them in the sequence you enter.
- You may insert one or more qualification statements between two existing ones. For example, if you want to enter a new qualification statement between qualification statements 4 and 5, insert the new qualification statement at line 4, and press ENTER. MANTIS renumbers the new qualification statement as line 5, the original line 5 as line 6, 6 as 7, and so on.
- If you delete a qualification statement during an update, MANTIS will renumber all subsequent qualification statements.

Search field

Description *Required.* Specifies a search field to qualify the SSA. This search field name must be defined to DL/I in the DSD. It will be used for the qualification statement. If you use a secondary index, the field name is the name you define in the XDFLD statement in the DBD.

Format 1–8 characters.

The Interface Facility for the IBM mainframe also provides a simple method of defining SSAs with compound or concatenated search fields (for mixed-data types). In the Call Profile Design search field list, enter a MANTIS name. Define the type as TEXT and the length equal to the total length of the composite key, regardless of the length of the MANTIS name specified in the Interface Area Layout. MANTIS then builds an SSA key value using the MANTIS name as a reference point, but implants the key value regardless of the internal format of that value. That is, it will treat the value as a binary string of the length specified in the Search Field List.

For example, assume you want to build a key using the following interface record layout fields:

Element	Name	Format	Length
x			
x			
x			
5	ORDERNO	BINARY	4
6	ITEMNO	PACKED	3
7	CLASS	TEXT	1
x			
x			

Also assume you want the key field to be a concatenation of the values of ORDERNO, ITEMNO, and CLASS.

In the Call Profile Design Search Field List, enter the SSA key as follows:

```
                DL/I CALL PROFILE SEARCH FIELD LIST
  DL/I SEGMENT NAME:
  SSA SEARCH LIST:                                              BOOLEAN
ACT   SEARCH FIELD     MANTIS NAME      TYPE   SIGN   LGTH   OPER CONN.
i 1   srchfld          ORDERNO          TEXT          8      EQ




                    ( USE CANCEL TO RETURN TO PROFILE LAYOUT )
```

In this case, srchfld is the name of the search field as specified in the DL/I DGDGEN. The length is equal to the composite length of the fields.

Supply the following information:

MANTIS NAME

Description *Optional*. Provides the name to be associated with the search field.

Format 1- to 16-character MANTIS variable name.

Considerations

- MANTIS NAME is provided to handle nonunique DL/I search field names and ranges of values within a search field.
- If you specify a MANTIS name in the Call Profile Layout, you should also specify it in the Interface Area Layout. MANTIS will attempt to extract the search field data from the mantis name in the Interface Area if this field appears in the call Profile Layout. Otherwise, MANTIS extracts the search field data from the name specified in SEARCH FIELD.

TYPE

Description *Required*. Specifies the format in which the data is stored on the DL/I segment.

Options

P Packed decimal

Z Unpacked (Zoned) decimal

B Halfword or fullword binary

F Floating point

T Text character string

K Kanji data

Consideration The type must be the same type assigned to the field name in the Interface Area Layout.

SIGN

Description *Optional*. Specifies whether the nontext element is signed.

Default N

Consideration Applies only to nontext elements.

LGTH

Description *Required*. Specifies the length of the search field.

Format Number of bytes.

Consideration The length must be the same between the DBSGEN and the Interface Area Layout.

OPER

Description *Required*. Specifies the relational operator involved in the qualification as shown below.

Options

EQ or = Equal to

NE or <> Not equal to

LT or < Less than

GT or > Greater than

LE or <= Less than or equal to

GE or >= Greater than or equal to

BOOLEAN CONN.

Description *Optional*. Supplies a Boolean command to connect a search argument with the next argument listed.

Default AND

Options AND

OR

Remember that you must use A (for Alter) to change an existing line. Press ENTER to save your entries. To return to the DL/I Call Profile Layout screen, press CANCEL.

Library functions

The Library Functions option enables you to save new Call Profile designs, and to retrieve, replace, and delete existing Call Profile designs. When the specified option from Library Functions is completed, MANTIS exits to the Call Profile Design Facility menu (see “DL/I Call Profile Design Facility menu” on page 395) and displays a confirmation message in the lower left corner of the screen.

When you select this option from the DL/I Call Profile Design Facility menu, the following screen displays:

```
                          M  A  N  T  I  S


                DL/I PROFILE LAYOUT LIBRARY FACILITY

PROFILE NAME ........ :                    :
DESCRIPTION ......... :                                  :


                    SAVE ..................... 1
                    REPLACE .................. 2
                    FETCH .................... 3
                    DELETE ................... 4
                    TERMINATE ........... CANCEL


                                :_:
```

The name and description of the current Call Profile will be provided automatically if you are creating a new Call Profile. To fetch an existing Call Profile, you need to supply the name. If you want to alter either one of these fields, enter data as described below:

PROFILE NAME

Description *Required*. Supplies a name for this Call Profile.

Format 1- to 16-character symbolic name.

DESCRIPTION

Description *Optional*. If you are creating a new Call Profile, the description is taken from the DL/I Profile Design currently in your work area. If you are updating an existing Call Profile, MANTIS displays the existing description once the profile has been fetched.

Format 1–32 alphanumeric characters.

Consideration You may change this description by typing a new description and using the REPLACE option.

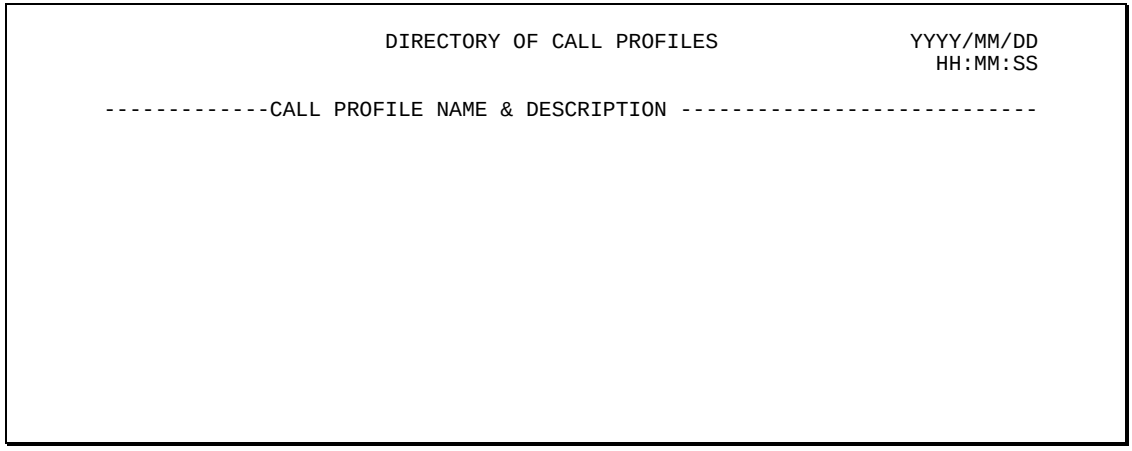
The following actions can be executed from the DL/I PROFILE LAYOUT LIBRARY FACILITY menu by typing the number of the action in the action field or pressing the corresponding PF key:

- **SAVE**. Saves the new Call Profile design in your current work area in your library. Use this function only when the Call Profile does not already exist in your library.
- **REPLACE**. Replaces a specific Call Profile in your library with the updated version currently in your work area.
- **FETCH**. Retrieves a Call Profile from your library and places it in your work area.
- **DELETE**. Deletes a Call Profile from your library. The current Call Profile will remain in your work area until another Call Profile is fetched or until you exit from the DL/I Call Profile Design Facility. To rename the Call Profile just deleted, select the SAVE option and provide a new name.

Press CANCEL to exit from Library Functions and return to the DL/I Call Profile Design Facility menu (see "DL/I Call Profile Design Facility menu" on page 395).

Directory of call profiles

The List Directory of Profiles and Print Directory of Profiles options enable you to view and print an alphabetical listing of all existing Call Profiles. When you select the List Directory of Profiles option from the DL/I Call Profile Design Facility menu, the following screen displays (this screen lists existing Call Profiles and their descriptions):



You may only view the listing; you may not change any information on this screen. Press ENTER to page through the directory. You can position the directory list at a specific point by entering 1–16 alphanumeric characters (representing a profile name or the first part of a profile name) on the bottom line of the screen. When you press ENTER, the directory begins the listing with the profile name on, or alphabetically after, the entered characters.

To print the Directory of Call Profiles, press CANCEL to return to the DL/I Call Profile Design Facility menu and select the Print Directory of Profiles option.

Print the completed design

The Print Completed Design option enables you to print the Call Profile currently in your work area. You may return to the DL/I Call Profile Design Facility menu anytime during the Call Profile design phase and select the Print Completed Design option. This causes the current Call Profile design to be routed to your designated printer.

When you are finished with the DL/I Call Profile Design Facility, press CANCEL to return to the Facility Selection menu (see the illustration in "Signing on to MANTIS" on page 41).

11

Compatibility considerations (personal computer and IBM mainframe)

This manual has describes the version of MANTIS which runs under Windows. You can design and execute your MANTIS applications on your personal computer. You can also transport your MANTIS applications from a personal computer to an IBM mainframe, using the Universal Export Facility described in “Transfer Facility” on page 323.

However, some differences exist between MANTIS for Windows and MANTIS for the IBM mainframe because of the different internal architecture of the two products and the different hardware on which they run. For example, MANTIS for Windows is free of some screen layout constraints imposed by the IBM 3270 display devices.

Compatibility mode enables you to develop MANTIS application on the personal computer for eventual use on the IBM mainframe. The Master User can set compatibility mode in the Update Configuration File Facility (refer to the *MANTIS for Windows Administration Guide*, P19-2304). When testing your applications, MANTIS displays an error message whenever it detects a feature which is not supported by MANTIS for the IBM mainframe. Note that all parts of a program must be executed to ensure that the program is compatible with MANTIS for the IBM mainframe. This chapter describes the features discussed in this manual which are affected by compatibility mode or need special consideration in applications which are to be migrated to the IBM mainframe. Refer to the *MANTIS for Windows Language Reference Manual*, P19-2302, for compatibility considerations that affect the MANTIS programming language.

General considerations

The compatibility topics in the following table are for you to consider when you write your applications:

Size Limit	Personal computer*	IBM Mainframe
Maximum string length (bytes)	254–32750	254
Maximum dimension size (bytes)	255–16000	255
Maximum number of dimensions	2–255	2 (1 for TEXT)
Maximum program line number	9999–64000	30000
Maximum number of user words (variables)	2048–65535	2048
Maximum number of external DO levels	5–255	5
Maximum number of CHAIN parameters	40–255	40
Maximum program size (bytes)	32768–65248	65535

* Maximum size limits on the personal computer must be in the ranges listed here.

Key assignments

Because a personal computer keyboard does not have all the keys on a 3270 keyboard, MANTIS for Windows uses logical keys that correspond to 3270 keys. Logical keys are special key assignments used to enter data and perform special functions. “Keyboard operation” on page 34 describes logical keys in more detail. Personal computer keys are mapped to logical keys and this mapping can be customized (refer to the *MANTIS for Windows Administration Guide*, P19-2304).

Run System Facility

The Run System Facility cannot be executed in compatibility mode.

Screen Design

MANTIS for Windows supports a logical display area that is 32767 rows by 32767 columns. MANTIS for the IBM mainframe supports a logical display area that is 255 rows by 255 columns. In MANTIS for the IBM mainframe, you can design a screen as large as 255 rows by 255 columns. In MANTIS for Windows, you can design a screen with as many as 255 rows or as many as 254 rows by 255 columns. However, the memory required for the map cannot exceed 64K. This means, for example, that a 255 by 255 map cannot be created or used on MANTIS for Windows.

Windowing in MANTIS for Windows is restricted to the size of the current map set, that is, you can scroll only to the edge of the map set. Windowing in MANTIS for the IBM mainframe is restricted to the size of the logical display, that is, you can scroll to anywhere in the logical display area, regardless of the map set size.

Screens containing line-drawing characters cannot be migrated from MANTIS for Windows to MANTIS for the IBM mainframe.

The following attributes are ignored in MANTIS for Windows, but take effect in programs which are migrated to MANTIS for the IBM mainframe:

- DETECTABLE/NONDETECTABLE
- OVERLINE/NO OVERLINE
- LEFT BAR/NO LEFT BAR
- RIGHT BAR/ NO RIGHT BAR
- MODIFIED/UNMODIFIED

The UPPERCASE and LOWERCASE attributes in MANTIS for Windows are not supported in programs which are executed in MANTIS for the IBM mainframe. MANTIS for the IBM mainframe automatically translates all data into uppercase.

Extended validation using validation lists (or arrays) is not supported in MANTIS for the IBM mainframe.

If you want MANTIS for Windows to treat partially displayed fields in the same way as MANTIS for the IBM mainframe, allow the default of Y (yes) for the AUTOMATIC WINDOWING attribute in the Library Functions option of Screen Design. If you set AUTOMATIC WINDOWING to N (no), MANTIS for Windows protects partially displayed fields.

MANTIS for the IBM mainframe requires that every field be preceded by a field separator. Specify Y (yes) for the FIELD SEPARATORS attribute in the Library Functions option of Screen Design if the screen is to be migrated to MANTIS for the IBM mainframe.

MANTIS for the IBM mainframe supports opaque maps that are created by using the blank-fill character in all areas of overlay (that do not contain data) when the screen is designed. For compatibility with MANTIS for the IBM mainframe, you must design an opaque map by using the blank-fill character on the screen design (not by using the OPAQUE MAP attribute in the Library Functions option of the Screen Design Facility).

Floating maps are not supported in MANTIS for the IBM mainframe.

Windowing

In MANTIS for the IBM mainframe, the WINDOW parameter of the CONVERSE statement selects window mode in which the program function keys are used for windowing functions instead of their normal purpose. Window mode is terminated by the completion of CONVERSE processing or by pressing PF9/21. In MANTIS for Windows, window mode is always in effect. Windowing functions can always be performed by using the windowing logical keys.

In MANTIS for Windows, the only difference between the WINDOW and DISPLAY parameters on the CONVERSE statement is that the row and column coordinates of the window are displayed if WINDOW is specified.

External File Design

External files are DOS files on a personal computer and VSAM files on an IBM mainframe system. You can access the following types of external files on the personal computer:

- Personal computer DOS files
- Personal computer files that simulate VSAM files.

For compatibility with MANTIS for the IBM mainframe, use VSAM files for your external file types.

You can insert a record anywhere in a DOS file. If you insert a record that is not immediately following the last record in the file, dummy records are automatically created (containing unpredictable data) between the last record and the one you specify. For example, if the last record is 8 and you insert 12, dummy records 9–11 are automatically created. You can insert to a DOS NUMBERED file.

Each record in a VSAM file has an identifier that specifies whether the record is logically present, that is, whether you can insert or delete that record. You cannot insert a record over an existing record as you can for DOS files. You can update the record, or you can delete it and then insert a new record in the old record's place.

Field Input

In MANTIS for Windows, any changes made to screen fields are automatically reflected in the corresponding program variables. In MANTIS for the IBM mainframe, whether fields are updated depends on the key pressed. Fields are not updated on the mainframe unless ENTER or a PF key is pressed.

Kanji

MANTIS for Windows does not support the Kanji data type (for Asian languages). For compatibility with MANTIS for the IBM mainframe, you can define the data type of a field as K (for Kanji). However, you will receive an error if you try to use a Kanji field on MANTIS for Windows.

Transfer Facility

MANTIS for Windows supports the language specification for screens and prompters.

Interface Design

For TYPE OF INTERFACE, DLL, REMOTE, and PROGRAM interfaces are not supported by IBM MANTIS on the mainframe. The MAINFRAME type of interface is compatible. The DATA FLOW option is not supported by MANTIS for the IBM mainframe. Specify FULL (the default) for compatibility with MANTIS for the IBM mainframe.

MANTIS editing commands

The following editing command work differently in MANTIS for Windows and MANTIS for the IBM mainframe:

- **BIND**. The BIND command has a different effect in MANTIS for Windows. In MANTIS for Windows, the BIND command passes the entire program source and produces a more efficient, executable version of the program. However, no variable definitions are performed until the program is executed.

  In MANTIS for the IBM mainframe, the BIND command partially executes the program, producing an initialized data area which is saved with the program. However, the BIND process stops on the first statement whose effect cannot be predicted prior to execution.

- **DOWN**. In MANTIS for Windows, the DOWN command selects as the current program an external subroutine at a lower level. You can then list and edit it in the work area. In MANTIS for the IBM mainframe, the Full-Screen Editor DOWN command scrolls toward the end of a program listing.

- **EDIT**. The EDIT command is not supported by MANTIS for the IBM mainframe.

- **ERASE**. The semicolon (;) in the ERASE command in MANTIS for the IBM mainframe is not supported by MANTIS for Windows.

- **GO**. The GO command is not supported by MANTIS for the IBM mainframe.

- **LOAD**. MANTIS for Windows uses a comma (,) to separate the password in the LOAD command. MANTIS for the IBM mainframe uses a slash (/). The quotation mark (“) in the LOAD command in MANTIS for the IBM mainframe is not supported by MANTIS for Windows.

- **PURGE**. MANTIS for Windows uses a comma (,) to separate the password in the PURGE command. MANTIS for the IBM mainframe uses a slash (/). The quotation mark (“) in the PURGE command in MANTIS for the IBM mainframe is not supported by MANTIS for Windows.

- **QUIT**. In MANTIS for Windows, issuing a QUIT command returns you to the Program Design Facility menu. Your program and any changes you made remain in the work area. You can select other options of the Program Design Facility and return to the Update Program option to further modify your program.

  In MANTIS for the IBM mainframe, issuing a QUIT command returns you to the Facility Selection menu and clears your program from the work area. So, you must SAVE or REPLACE your program before issuing a QUIT command or your changes will be lost!

- **REPLACE**. MANTIS for Windows uses a comma (,) to separate the password and description in the REPLACE command. MANTIS for the IBM mainframe uses a slash (/). The quotation mark (“) in the REPLACE command in MANTIS for the IBM mainframe is not supported by MANTIS for Windows.

- **RUN**. The *libname* parameter in the RUN command in MANTIS for Windows is not supported by MANTIS for the IBM mainframe.

- **SAVE**. MANTIS for Windows uses a comma (,) to separate the password and description in the SAVE command. MANTIS for the IBM mainframe uses a slash (/). The quotation mark (“) in the SAVE command in MANTIS for the IBM mainframe is not supported by MANTIS for Windows.

- **SEQUENCE**. The *entry-name* parameter in the SEQUENCE command in MANTIS for Windows is not supported by MANTIS for the IBM mainframe.

- **SET**. The SET command is not supported by MANTIS for the IBM mainframe. MANTIS for Windows will return an error message if you try to execute a SET statement or command in compatibility mode.

- **UP**. In MANTIS for Windows, the UP command selects as the current program an external subroutine at a higher level. You can then list and edit it in the work area. In MANTIS for the IBM mainframe, the Full-Screen Editor UP command scrolls toward the beginning of a program listing.

12

Universal Export Facility

The Universal Export Facility allows users to export one or more entities (e.g., screens, files, programs, views etc.) from one MANTIS file to another.

IMPORT and EXPORT, within the Universal Export Facility, are accomplished by the transfer of entities between the MANTIS File and an external text file. EXPORT transfers the entities from the MANTIS file to the external file, while IMPORT transfers the entities from the external file to the MANTIS file.

Universal Export Facility menu

When you select the Universal Export Facility option from the MANTIS Facility Selection menu (see the illustration in “Signing on to MANTIS” on page 41), the following screen displays:

```
                              M  A  N  T  I  S

                         UNIVERSAL EXPORT FACILITY

ENTITY NAME .........:*                                        :
EXPORT FILE NAME ....:                                                :
DIRECTION (I/E)......:    :

:   : SCREEN..................  1           SELECT TYPE OF ENTITY ......  9
:   : PROCESS.................  2           CLEAR ALL ENTITY TYPES ....  10
:   : INTERNAL FILE ..........  3           CHANGE OPTIONS ............  11
:   : PROMPTER ...............  4
:   : EXTERNAL FILE ..........  5
:   : INTERFACE ..............  6
:   : SCENARIO ...............  7
:   : ULTRA VIEW .............  8


                                      :   :

                       ENTER Proceed; CANCEL Exit; PF1 Help
```

ENTITY NAME

Description *Optional*. Specify the design(s) you want to import or export, for the entities you select.

Format A design name or a wildcard expression.

Considerations

- All designs of the selected entities will be exported if nothing is entered into this field.
- For EXPORT, when the directory is turned off, all the designs specified here will be Exported. When the directory is turned on, you can select from the displayed portion of the directory which designs to export.

EXPORT FILE NAME

Description *Required*. Specify the external text file from which (IMPORT) or to which (EXPORT) you want the entity designs transferred.

Format A valid file specification.

DIRECTION (I/E)

Description *Required*. Specifies the direction of transfer.

Options

I Import entities into the MANTIS file from an external file.

E Export entities from the MANTIS file to an external file.

Universal Export Facility options

When you select Change Options on the Universal Export Facility Menu (see "Universal Export Facility" on page 421), the following screen displays:

```
                          M A N T I S

                    UNIVERSAL EXPORT FACILITY
                            OPTIONS

        Add or Replace the Entity on Import ...  (A/R) :  A :
        Export using Directory Selection ......  (Y/N) :  N :
        Language ..................................  :  ENGLISH          :
        Screen Device .............................  :  24 x 80  :
        Create new or Append to Export File ...  (C/A) :  A :
        Ignore USER Descriptor on Import ......  (Y/N) :  Y :
        Include USER Descriptor on Export .....  (Y/N) :  N :
        Import/Export DATE and TIME ...........  (Y/N) :  N :
        Include Process Line Numbers ..........  (Y/N) :  N :
        Resequence Line Numbers on Import......  (Y/N) :  N :
        Include Prompter Line Numbers .........  (Y/N) :  N :
        Export File Line Width ..............  (80-254) :  80  :
        Export File Indentation ..............  (1-30) :  4  :
        Import/Export internal files with data   (Y/N) :  N :
        Use UEF 1.1 Language Format ...........  (Y/N) :  N :
        Export Passwords ......................  (Y/N) :  Y :

                 ENTER Update; CANCEL Exit; PF1 Help
```

Enter the following data:

Add or Replace the Entity on Import . . . (A/R)

Description Specifies whether you want to replace or add the designs in the MANTIS file.

Default A

Options A Add the designs to the MANTIS file if they do not already exist. If they do exist in the MANTIS file, an error will be displayed.

R Replace the designs in the MANTIS file if they already exist. Add the designs to the MANTIS file if they do not exist.

Considerations

- This field is used only for Import.
- When replacing a file, the data for the file being replaced will be overwritten.

Export using Directory Selection . . . . . (Y/N)

Description Specifies whether you want the selected entities' directories to be displayed. You can select the designs to be EXPORTED from these directories.

Default N

Options N Do not display Directory.

Y Display Directory.

Considerations

- This field is used only for EXPORT.
- If you enter Y and if you entered a design name into the SELECTION field, the part of the directory beginning with the design name will be displayed. However, if you entered a wildcard expression into the SELECTION field, only the relevant designs will be displayed in the directory.

Language

Description Specifies the language of the screens or prompters you want IMPORTED/EXPORTED.

Default Your default language

Format A valid language name. The valid languages are stored in the Language file controlled by the Master User.

Considerations

- This field is used only for screens and prompters. It is ignored for all other entities.
- An empty field indicates all languages.

Screen Device

Description Specifies the size of the device used to create the screens that are to be IMPORTED/EXPORTED. Specify 00 x 00 if all screens regardless of device are to be processed.

Default 24 x 80

Options 43 x 80, 32 x 80, 27 x 132, 24 x 132, 24 x 80, 00 x 00

Consideration This field is used only for screens. It is ignored for all other entities.

Create new or Append to Export File . . . (C/A)

Description Specifies whether you want to create a new EXPORT file or append to an existing EXPORT file.

Default A

Options C Create a new EXPORT file.

A Append to an existing EXPORT file.

Consideration If Append is selected and the EXPORT file specified does not exist, it will be created.

Ignore USER Descriptor on Import . . . . . (Y/N)

Description During IMPORT, ignore the USER= descriptor found in the EXPORT file.

Default Y

Options N Do not ignore the USER descriptor.

Y Ignore the USER descriptor.

Considerations

- This field is used only for IMPORT.
- If the user descriptor is ignored, all entities in the Export File that match the selection criteria will be imported into the current user.
- If the option to ignore the USER descriptor is NOT selected, one of the following actions is performed:
  - Master User has the ability to select the user to IMPORT. The entities matching the selection criteria will be IMPORTED into the library of the selected user.
  - Any user other than Master can only import their own entities.

Include USER Descriptor on Export . . . . . (Y/N)

Description *Optional*. Specifies whether the USER descriptor is to output to the export file.

Default N

Options N Do not output the USER descriptor to the EXPORT file.

Y Output the USER descriptor to the EXPORT file.

Consideration This field is used only for EXPORT.

Import/Export Date/Time . . . . . (Y/N)

Description *Optional.* On EXPORT, this option specifies whether these descriptors are to be output to the export file. On Import, this option specifies whether the DATE and TIME descriptors are to be used when storing the entity description.

Default N

Options N EXPORT. Do not output the DATE and TIME descriptors to the EXPORT file.
IMPORT. Do not use the DATE and TIME descriptors.

Y EXPORT. Output the DATE and TIME descriptors to the EXPORT file.
IMPORT. Use the DATE and TIME descriptors when storing the entity description.

Consideration Importing using the DATE and TIME descriptors is currently unavailable for Process descriptors. Therefore, the current date and time will always be used when storing Process descriptions.

Include Process Line Numbers . . . . . (Y/N)

Description Specify whether you want process line numbers to be output to the EXPORT file on EXPORT file.

Default N

Options N Do not include process line numbers in the EXPORT file.

Y Include process line numbers in the EXPORT file.

Considerations

- This field is ignored for all entities except processes.
- This field is used only for EXPORT.

Resequence Line Numbers on Import . . . . . (Y/N)

Description Specifies whether the process lines are to be resequenced on Import. Resequencing indicates that once a process has been imported, process lines will start at one and increment by one, regardless of any line numbers found in the EXPORT file.

Default N

Options

N Do not resequence line numbers.

Y Resequence line numbers.

Considerations

- This field is ignored for all entities except processes.
- This field is used only for IMPORT.
- If a process description contains no process line numbers in the EXPORT file, import line numbers will start at one and increment by one.

Include Prompter Line Numbers . . . . . (Y/N)

Description Specifies whether you want Prompter line numbers to be output to the export file on EXPORT file.

Default N

Options

N Do not include Prompter line numbers in the EXPORT file.

Y Include Prompter line numbers in the EXPORT file.

Considerations

- This field is ignored for all entities except Prompters.
- This field is used only for EXPORT.

Export File Line Width . . . . . (80–254)

Description Specifies the width of the line output to the EXPORT file.

Default 80

Options 80–254

Consideration This field is used only for EXPORT.

Export File Indentation . . . . . (1–30)

Description Specifies the indentation of indented lines output to the EXPORT file.

Default 4

Options 1–30

Consideration This field is used only for EXPORT.

Import/Export internal files with data (Y/N)

Description Specifies whether you want the data of the internal file designs IMPORTED/EXPORTED.

Default N

Options N IMPORT/EXPORT file without data.

Y IMPORT/EXPORT file with data.

Consideration This field is ignored for all entities except MANTIS files.

Use UEF 1.1 Language Format . . . . . (Y/N)

Description Specifies if you want the export file to be produced in the format of the previous version of UEF, to allow the entities in the export file to be imported using the previous version of UEF.

Default N

Options

N Export file will be in UEF 1.2 format

Y Export file will be in UEF 1.1 format

Consideration If Y is specified for this option, the export file IS also valid for importing using UEF 1.2. The UEF formats are upwardly compatible.

Export Passwords . . . . . (Y/N)

Description Specify if you want the export file to reveal passwords included in various entities. For example, an external file view design may specify up to four access passwords. For security reasons, you may not want these passwords to appear in the export file.

Default Y

Options

N Do not export any passwords in any entities

Y Export all entity passwords

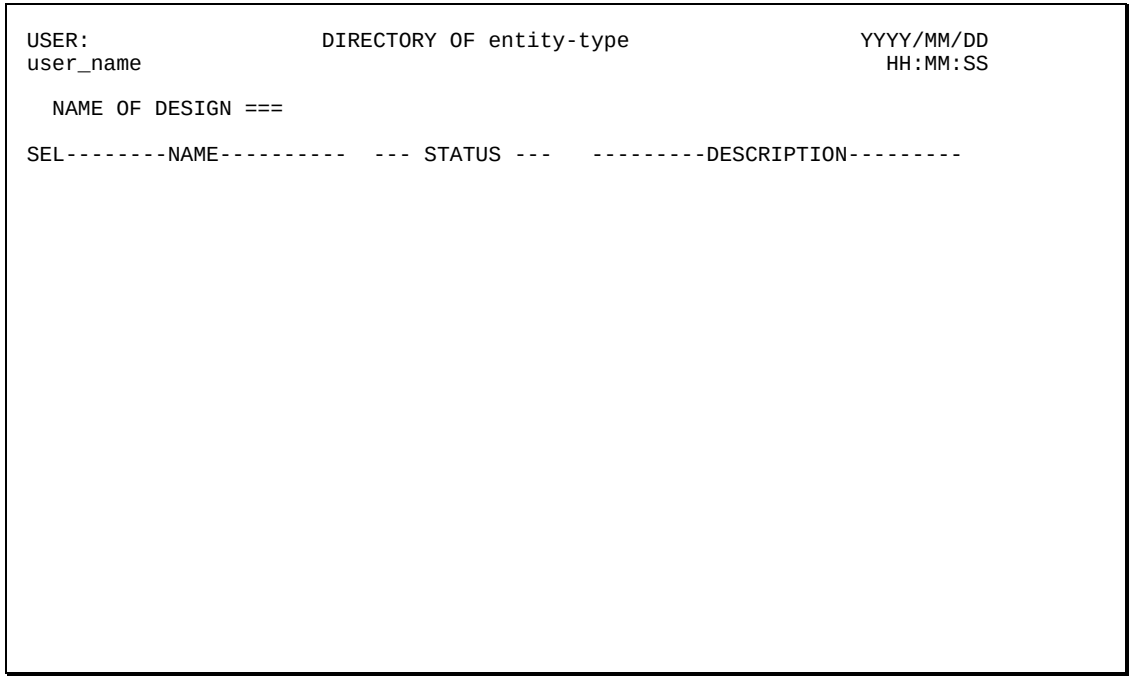
Consideration Failure to include passwords in an export file may render an application invalid if it is exported and then imported elsewhere, because the programs that use the entities in question will specify certain passwords that no longer exist in the entities unless you manually restore passwords after import.

HELP

Description Press PF1 to obtain help on the Universal Export Facility Menu (see “Universal Export Facility menu” on page 422).

Export directory

When the DIRECTORY option is turned on, in the Main Universal Export screen (see “Universal Export Facility menu” on page 422), the following screen displays:



Enter the following data:

NAME OF DESIGN

Description *Optional*. Specifies the new starting position of the directory.

Format A design name or wildcard expression.

SEL

Description *Optional*. Selects the designs you wish to EXPORT.

Format S

Consideration When the directory is for a wildcard expression, the default action is to S (select) 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

Description The name of the design.

STATUS

Description The status message given on completion of the export process.

Possible values ERROR An error occurred while exporting the design.

EXPORTED Exported Successfully.

DESCRIPTION

Description The description of the design specified in NAME.

Consideration Press the window right key to see the full description.

When designs are selected, press RETURN, for EXPORT to begin.

To page through the directory, press RETURN or use the repoint option by entering a design name or wildcard expression in the NAME OF DESIGN field. This repoint value represents the new starting position of the directory.

Press CANCEL to return to the Main Universal Export screen (see "Universal Export Facility menu" on page 422).

A

Dissimilarity debugging

Dissimilarity errors occur in MANTIS when processing a complex statement (SCREEN, FILE, or ACCESS). This appendix defines the types of dissimilarity and suggests how you may locate and correct these errors.

Dissimilarity errors can occur for the following general reasons:

- **Type**. Occurs when a field defined in the specified design or view is already defined in the program, but with an incompatible type (TEXT, BIG, or SMALL).

- **Dimension**. Occurs when a field defined in the specified design or view is already defined in the program, but with different dimensions (or no dimensions), or implied by the number of levels specified on the complex statement (in the case of FILE and ACCESS).

MANTIS displays the name of the file in question in the error message. Use the DISPLAY command (see "Program design" on page 249) to determine its type and dimensions, and the USAGAE command to find the previous definition. Note that the previous definition may be another complex statement, in which case the USAGE command will not display it. Also, if the variable was passed to the routine through an ENTRY statement, you may need to work backwards into the calling routine to resolve the problem. Finally, you should verify that the field definition in the design or view and, if applicable, the number of levels specified, are correct.

B

Messages

This appendix provides the error messages you may receive when executing the MANTIS facilities. Messages are presented alphabetically within the facility where they will occur. In addition to the actual message text, an explanation and action are provided.

Program Design Facility messages are documented in *MANTIS for Windows Language Reference Manual*, P19-2302.

Sign On

`Facility program not found`

Explanation The facility program in the user profile does not exist.

Action Contact your Master User.

`MASTER:SIGN_ON program not found or contains an error`

Explanation Either MANTIS could not find the MASTER:SIGN_ON program or that program contains an error.

Action Contact your Master User.

`MASTER:SIGN_ON screen not found`

Explanation MANTIS could not find the MASTER:SIGN_ON screen.

Action Contact your Master User.

`Status of User is xxxxxx`

Explanation The status must be ACTIVE to sign on to MANTIS.

Action Reenter your name and password, checking the spelling. If the STATUS field is blank, you get a # in the *xxxxxx* field. If the message appears again, contact your Master User.

`The User or Password is invalid`

Explanation The user or password that was entered is not valid.

Action Reenter your name and password. Check the spelling for any trailing blanks. If the message appears again, contact your Master User.

Screen design

`All fields have been defined`

Explanation The Next Undefined Field option of Update Field Specifications was selected, but all fields have been defined.

Action Informational message only.

`Conflicting repeat specifications`

Explanation The repeat specifications in the Update Repeat Specifications option are conflicting.

Action Make sure that you do not specify a displacement without also specifying additional repeats.

`Different repeat specifications within range`

Explanation The original repeat specifications of the fields nominated by range in the Update Repeat Specifications option are not the same.

Action Informational message only.

`Error in REPLACE - screen is inconsistent`

Explanation An error has occurred that prevents the screen from being replaced.

Action Another message which indicates the specific cause will appear on the screen.

`Error in SAVE - screen is inconsistent`

Explanation An error has occurred that prevents the screen from being saved.

Action Another message which indicates the specific cause will appear on the screen. Follow those instructions.

`Field(s) defined beyond last line in screen`

Explanation One or more fields are defined beyond the last row of the screen or are defined on the last row, but extend beyond the last column of the screen.

Action Correct the field specifications so they fit within the screen design size.

`Map domain must be at least 1 x 2`

Explanation An invalid domain was specified in the Create or Update a Screen option.

Action Press PF12 (in the Create or Update a Screen option) to enter a valid domain.

`No fields defined for screen`

Explanation The List Field Specifications or List Repeat Specifications option was selected, but no fields have been defined for the screen.

Action Define fields for the screen before selecting these options.

`No repeat fields`

Explanation You selected the List Repeat Specifications option, but no repeat fields have been defined for the screen.

Action Informational message only.

`No such field defined`

Explanation The field name specified on the Update Field Specifications screen does not exist.

Action Check the spelling or use the Nominate by Positioning Cursor on Field option.

`Repeat field(s) overlap with other fields`

Explanation With the current repeat specifications, two or more fields overlap each other.

Action Check and correct the repeat specifications.

`Replacing another design, use <XXX> to confirm`

Explanation You have specified that you want to replace another design.

Action Confirm that you want to replace the design, or press CANCEL to stop the replacement.

`Screen does not contain any data fields`

Explanation You selected the Set Common Attributes for All Data Fields option of Update Field Specifications, but no data fields exist.

Action Create data fields in your screen design before selecting this option.

`Screen does not contain any heading fields`

Explanation You selected the Set Common Attributes for All Heading Fields option of Update Field Specifications, but no heading fields exist.

Action Create heading fields in your screen design before selecting this option.

`Screen does not contain any line-drawing fields`

Explanation You selected the Set Common Attributes for All Box Fields option of Update Field Specifications, but no line-drawing fields exist.

Action Create line-drawing fields in your screen design before selecting this option.

`Screen is too large`

Explanation You have tried to create a screen that requires memory in excess of 64K.

Action Simplify the screen (e.g., reduce its dimensions, or remove fields or attributes). If necessary, break the screen into multiple maps.

`Screen name must have 1 to 30 characters`

Explanation No name was supplied or the name exceeds 30 characters.

Action Enter a screen name of 1–30 alphanumeric characters.

`Screen too large - reduce number of fields`

Explanation Too many fields have been defined for the screen.

Action Delete some of the fields.

`Some KANJI fields cannot be made even length`

Explanation The ALIGN KANJI option was not specified. Some unaligned Kanji fields exist in the screen design.

Action Informational message only.

`Some KANJI fields have been aligned`

Explanation The ALIGN KANJI option was specified. Some Kanji fields have been aligned.

Action Informational message only.

`**Unrecognized language '#'`

Explanation An unknown LANGUAGE was specified.

Action Specify a valid language.

`Unsaved changes exist, use <XXX> to confirm`

Explanation You are exiting the facility without saving your changes.

Action Save your changes before exiting the facility, or confirm you want to exit the facility without saving your changes.

`Use <CANCEL> to terminate`

Explanation The last screen of fields is displayed in the List Field Specifications option or the List Repeat Specifications option.

Action You have viewed all of the fields defined for this screen; press CANCEL.

`Use <ENTER> to page, <CANCEL> to terminate`

Explanation The List Field Specifications or List Repeat Specifications option was selected. More fields are defined for the screen than the ones that are displayed.

Action To view the rest of the fields that are defined for the screen, press ENTER. To exit this option, press CANCEL.

`**Use <PF1> to confirm, <CANCEL> to terminate`

Explanation This message is displayed after another warning message.

Action Press PF2 to REPLACE the screen, regardless of the warning.

`**Use <PF2> to confirm, <CANCEL> to terminate`

Explanation This message is associated with a warning message.

Action Press PF2 to REPLACE the screen, regardless of the warning.

`Warning - IBM screens need field separators, screen will not migrate`

Explanation The screen does not specify FIELD SEPARATORS, which are required in screens used by MANTIS for the IBM mainframe.

Action Informational message.

`Warning - line-drawing fields are not included in repeat range`

Explanation The range of fields selected in the Update Repeat Specifications option includes fields composed of line-drawing characters. Line-drawing fields are ignored for the purpose of setting the repeat specifications.

Action Informational message.

`Warning - not all KANJI fields have been aligned`

Explanation The ALIGN KANJI option was specified. Some Kanji fields could not be aligned.

Action Change the screen design so the fields can be aligned.

'XXX' already exists

Explanation The screen specified already exists.

Action Specify a unique name.

'XXX' deleted

Explanation The screen was successfully deleted.

Action Informational message only.

'XXX' does not exist

Explanation The screen specified does not exist.

Action Specify an existing entity.

'XXX' fetched

Explanation The screen was successfully fetched.

Action Information message only.

'XXX' replaced

Explanation The screen was successfully replaced.

Action Informational message only.

'XXX' replaced and 'XXX' KANJI fields cannot be made even

Explanation The ALIGN KANJI option of Library Functions was not specified. The indicated number of unaligned Kanji fields were replaced with the design.

Action Informational message only.

'XXX' replaced and 'XXX' KANJI fields have been aligned

Explanation The ALIGN KANJI option of Library Functions was specified. The indicated number of Kanji fields were aligned prior to replacing the design.

Action Informational message only.

`'XXX' replaced and 'XXX' KANJI fields were not aligned`

Explanation The ALIGN KANJI option of Library Functions was specified. The indicated number of Kanji fields were not aligned prior to replacing the design.

Action Informational message only.

`'XXX' saved`

Explanation The screen was successfully saved.

Action Informational message only.

`'XXX' saved and 'XXX' KANJI fields cannot be made even`

Explanation The ALIGN KANJI option of Library Functions was not specified. The indicated number of unaligned Kanji fields were saved with the design.

Action Informational message only.

`'XXX' saved and 'XXX' KANJI fields have been aligned`

Explanation The ALIGN KANJI option of Library Functions was specified. The indicated number of Kanji fields were aligned prior to saving the design.

Action Informational message only.

`'XXX' saved and 'XXX' KANJI fields were not aligned`

Explanation The ALIGN KANJI option of Library Functions was specified. The indicated number of Kanji fields were not aligned prior to saving the design.

Action Informational message only.

`<XXX> to confirm DELETE; otherwise <CANCEL>`

Explanation You have specified that you want to delete the screen.

Action Confirm that you want to delete the screen, or press CANCEL to stop the deletion.

MANTIS file design

`Cannot find your user profile`

Explanation MANTIS cannot locate your user profile.

Action Contact your Master User.

`Error deleting 'XXX'`

Explanation An error occurred while attempting to delete the file profile.

Action Use HELP LAST to examine the last error message or check the MANTIS error log.

`Error inserting 'XXX'`

Explanation An error occurred while attempting to save or replace the file profile.

Action Use HELP LAST to examine the last error message or check the MANTIS error log.

`File is not empty - <XXX> to confirm DELETE`

Explanation The file you tried to delete still contains one or more records.

Action Remove all records from field before attempting deletion.

`File is not empty - <XXX> to confirm REPLACE`

Explanation If the file layout has been changed, you may not be able to access all the data after the new layout is replaced.

Action Ensure that the new and old profiles are compatible.

`KEY elements must be contiguous`

Explanation Key elements must be listed first in the record.

Action Check all key fields to verify they immediately follow the first key field.

`Libraries' record definitions are protected`

Explanation You have tried to access a file whose layout is proprietary to Cincom Systems, Inc.

Action Do not try to access this file.

`Name supplied is invalid`

Explanation The name you entered is not a valid name.

Action Reenter the file name.

`No record elements have been defined`

Explanation The file contains no records.

Action Either specify an associated record layout or define elements for this file.

`Profile was not previously FETCHed`

Explanation You tried to replace a profile without first fetching it.

Action Fetch the profile first.

`The first element must be a key`

Explanation You did not specify the first element as the key field.

Action Specify the first element in your record area layout as the key field.

`Too many files allocated`

Explanation You have exceeded the limit of files set by MANTIS.

Action Do not exceed the maximum number of files, which is 999.

`Unsaved changes exist, use <XXX> to confirm`

Explanation You are exiting the facility without saving your changes.

Action Save your changes before exiting the facility, or confirm you want to exit the facility without saving your changes.

`Warning - the total key length exceeds 32 bytes`

Explanation You have exceeded the limit set by MANTIS for the key field(s) length.

Action Redefine your key fields to within the 32 byte limit.

`'XXX' already exists`

Explanation You tried to save a file profile under an existing name.

Action When you save a file profile, you must specify a name not previously defined.

`'XXX' deleted`

Explanation The file was successfully deleted.

Action Informational message only.

`'XXX' does not exist`

Explanation MANTIS cannot locate the file you specified.

Action Reenter the file name, checking the spelling. If this message appears again, contact your Master User to verify the file has not been deleted.

`'XXX' fetched`

Explanation The file was successfully fetched.

Action Informational message only.

`'XXX' replaced`

Explanation The file was successfully replaced.

Action Informational message only.

`'XXX' saved`

Explanation The file was successfully saved.

Action Informational message only.

`<XXX> to confirm DELETE; otherwise <CANCEL>`

Explanation You have specified that you want to delete the file.

Action Confirm that you want to delete the file, or press CANCEL to stop the deletion.

`You may not specify another user's library`

Explanation No other user’s library may be accessed.

Action Do not specify another user’s library.

External file view design

`ACCESS Description must be entered`

Explanation You did not specify a description for this external file view.

Action Specify a description.

`Access Method must be DOS, VSAM, or PC`

Explanation An invalid access method was specified.

Action Valid access methods are DOS, VSAM, or PC.

`ACCESS Name must be given and must not start with a blank`

Explanation The name you specified is invalid.

Action Reenter your external file name.

`Action must be: 'A'-Alter, 'I'-Insert, 'D'-Delete`

Explanation You entered a character other than A, I, or D.

Action Perform the desired action.

`ASCII is only valid for DOS files`

Explanation ASCII was specified for a file type other than DOS.

Action Specify ASCII for DOS files only.

`Cannot Alter/Delete an empty line`

Explanation You tried to alter or delete an empty line.

Action You can alter and delete existing lines only.

`Controlling and Occurring elements must both be present or absent`

Explanation You specified either controlling elements or occurring elements, but not both.

Action Verify that both elements are either present or absent.

`Controlling Element 'X' must be numeric and unsubscripted`

Explanation This controlling element is specified as nonnumeric and/or subscripted.

Action Alter the field separations.

`Data length must be in the range of 1 to 18000`

Explanation The data element is not in the allowed range.

Action Correct the length of the data element.

`Decimal PACKED field contains more than 17 digits`

Explanation The packed decimal element exceeds the maximum allowable number of digits.

Action Change the number of digits to 17 or less.

`Deletion of ACCESS Profile FAILED`

Explanation An error occurred attempting to DELETE the profile record.

Action Use HELP LAST to examine the last error message, or check the MANTIS error log.

`Dimension/Offset differ for 'x' and 'xxx'`

Explanation For variable-length records, repeated groups of fields (controlled by the Controlling Element) must have identical DIM and OFFSET.

Action Change the field specifications accordingly.

`Element length is not in 1 to 254 range`

Explanation The length of the element is not in the valid range.

Action Correct the length of this text variable.

`Element length is not in 2 to 254 range`

Explanation The element length of the Kanji field is not in the range of 1–254.

Action Specify the element length in the range of 1–254.

`Element length must be even for KANJI`

Explanation The element length is not even.

Action Make the element length even.

`Element length must be greater than zero`

Explanation The element length is not greater than zero.

Action Specify an element length greater than zero.

`Element's last position n exceeds record length`

Explanation Either the record length or the definition of the indicated element is incorrect.

Action Correct the record length or the definition of the indicated element.

`External file name must be supplied`

Explanation You did not supply an external file name.

Action Enter the external file name.

`File type must be INDEXED, SEQUENTIAL, NUMBERED, or ASCII`

Explanation You specified an invalid file type.

Action Specify the desired file type.

`First Occurring must be positioned after controlling element`

Explanation The controlling element is positioned after the first occurring element.

Action Position controlling element before the first occurring element.

`'FIXED' conflicts with occurrence controlling element`

Explanation An occurrence-controlling element can only be used with variable-length records.

Action Use occurrence-controlling elements with variable-length records only.

`FLOATing point field length must be 4 or 8`

Explanation The floating-point element has a length other than 4 (single precision) or 8 (double precision) bytes.

Action Change the length accordingly.

`For BINARY fields length must be 1, 2, or 4`

Explanation The binary element has a length other than 1 (single byte), 2 (word) or 4 (double word) bytes in the DOS file.

Action Change the length accordingly.

`Format must be TEXT or ZONED for ASCII files`

Explanation An invalid format was specified for an ASCII file.

Action Valid formats for ASCII files are text and zoned.

`Format must be TEXT, PACKED, ZONED, BINARY, FLOAT or KANJI`

Explanation An invalid format was specified for VSAM files.

Action Specify the ACCESS element(s) as only text, packed decimal, zoned decimal, binary, floating-point, or Kanji.

`Format must be TEXT, ZONED, BINARY, FLOAT, or KANJI`

Explanation An invalid format was specified for DOS files.

Action Specify the access element as text, zoned decimal, binary, floating-point, or Kanji.

`Format must be TEXT, ZONED, BINARY, FLOAT, or KANJI for CONTACT NUMBERED`

Explanation An invalid format was specified for PC CONTACT NUMBERED files.

Action Specify the format as text, zoned decimal, binary, floating-point, or Kanji.

`Format must be TEXT, ZONED, or KANJI for PC CONTACT SEQUENTIAL files`

Explanation An invalid format was specified for PC CONTACT SEQUENTIAL files.

Action Specify the format as text, zoned decimal, or Kanji.

`INDEXED files are not allowed for PC CONTACT`

Explanation You specified INDEXED as the file type.

Action Informational message only.

`Insertion of ACCESS Profile FAILED`

Explanation An error occurred when attempting to save the profile record.

Action Use HELP LAST to examine the last error message, or check the MANTIS error log.

`KEY elements must be contiguous`

Explanation Key elements must be listed first in the record.

Action Check all key fields to verify that they immediately follow the first key field.

`KEY must be supplied for INDEXED files`

Explanation A key was not specified.

Action Specify the key for the indexed file.

`KEY must not be specified for XXX files`

Explanation A key was specified for a non-INDEXED file.

Action Remove KEY attribute or use INDEXED file.

`KEY must not be supplied for XXX files`

Explanation A KEY was specified when updating field elements.

Action Do not specify a KEY.

`KEY XXX cannot be a recurring structure`

Explanation The OFFSET field must be equal to the length field.

Action Check both fields and correct accordingly.

`MBF is only valid for FLOAT fields`

Explanation The MBF (Microsoft Binary Format) element attribute can only be specified for FLOAT in DOS NUMBERED or SEQUENTIAL files.

Action Specify the MBF attribute only as noted above.

`MBF is only valid with DOS SEQUENTIAL or NUMBERED files`

Explanation The MBF (Microsoft Binary Format) element attribute was specified for a file type other than DOS SEQUENTIAL or NUMBERED.

Action Specify the MBF attribute only as noted above.

`More than 160 data elements`

Explanation Too many elements are in this record.

Action Try to split the file definition into separate definitions.

`More than 255 elements`

Explanation The dimension is not in the valid range.

Action Correct the specified field.

`No more elements supplied for this file`

Explanation Neither an associated area layout nor elements were defined for the file.

Action Either specify an associated area layout or the definite elements for this file.

`Occurrence Controlling element 'X' is not defined`

Explanation Probable spelling error in definition of occurrence-controlling element.

Action Check the spelling and correct.

`PC CONTACT file BINARY field length must be 1 or 2`

Explanation The binary element has a length other than 1 (single byte) or 2 (word) bytes.

Action Change the length accordingly.

`PC CONTACT file can't have occurrence controlling element`

Explanation You specified an occurrence-controlling element.

Action Do not specify an occurrence-controlling element.

`Record type must be FIXED or VARIABLE`

Explanation The record type specified is invalid.

Action Specify the correct record type.

`Reference Variable must be supplied for X files`

Explanation A reference variable is required for sequential and numbered files.

Action Supply a reference variable.

`Reference Variable must be supplied for INDEXED files`

Explanation A reference variable is not allowed for indexed files.

Action Specify a key for indexed files.

`Replacement of ACCESS profile FAILED`

Explanation An error occurred when attempting to replace the profile record.

Action Use HELP LAST to examine the last error message, or check the MANTIS error log.

`Unsaved changes exist, use <XXX> to confirm`

Explanation You are exiting the facility without saving your changes.

Action Save your changes before exiting the facility, or confirm you want to exit the facility without saving your changes.

`Variable length records are not allowed for NUMBERED files`

Explanation NUMBERED files cannot have variable-length records.

Action Specify a valid record type for the NUMBERED file (see “External file view design facility” on page 124).

`VSAM file BINARY field length must be 2 or 4`

Explanation The binary element has a length other than 2 (halfword) or 4 (fullword) bytes.

Action Change the length accordingly.

`**Warning, the maximum record size has been increased to # bytes`

Explanation One or more of the fields just added (or altered) exceed the size of the record specified in the file profile.

Action The record size is increased automatically. Informational message.

`'X' Overflows the End of Record by X bytes`

Explanation The last element of the record is too big.

Action Check the last element of the record.

`'XXX' already exists`

Explanation The external file view you specified already exists.

Action Specify a nonexistent external file view when you attempt to save.

`'XXX' deleted`

Explanation The file view was successfully deleted.

Action Informational message only.

`'XXX' does not exist`

Explanation The external file view you specified does not exist.

Action Specify an existing external file view.

'XXX' does not have starting position within record

Explanation The starting position is not in the valid range.

Action Adjust the starting position (1 to maximum record length).

'XXX' fetched

Explanation The file view was successfully fetched.

Action Informational message only.

'XXX' printed

Explanation The file view was successfully printed.

Action Informational message only.

'XXX' replaced

Explanation The file view was successfully replaced.

Action Informational message only.

`'XXX' saved`

Explanation The file view was successfully saved.

Action Informational message only.

`<XXX> to confirm DELETE; otherwise <CANCEL>`

Explanation You have specified that you want to delete the file view.

Action Confirm that you want to delete the file view, or press CANCEL to stop the deletion.

`You may not specify another user's library`

Explanation No other user's library may be accessed.

Action Confirm that you want to delete the file view, or press CANCEL to stop the deletion.

`ZONED Decimal field contains more than 16 digits`

Explanation The zoned decimal element exceeds the maximum allowable number of digits.

Action Change the number of digits, not exceeding 16.

TOTAL File View Design

`Binary field length must be 2 or 4`

Explanation The indicated binary element has a length other than 2 (halfword) or 4 (fullword) bytes.

Action Correct the length.

`Decimal packed field contains more than 17 digits`

Explanation The indicated packed decimal element exceeds the maximum allowable number of digits.

Action Change the element so the number of digits does not exceed 17.

`Element dimension is invalid`

Explanation The dimension specified for this element is not between 1 and 255, or the total element size (dimension times length) is not between 1 and 254.

Action Correct the dimension.

`Element length is not in 1 to 254 range`

Explanation The length of this element must be greater than zero and less than 255.

Action Correct the length to be in the valid range.

`Element length must be even for KANJI`

Explanation The length specified for this Kanji field is not even.

Action Make the length even.

`Error deleting 'XXX'`

Explanation An error occurred while attempting to delete the file view.

Action Use HELP LAST to examine the last error message or check the MANTIS error log.

`Error inserting 'XXX'`

Explanation An error occurred while attempting to save the file view.

Action Use HELP LAST to examine the last error message or check the MANTIS error log.

`Error replacing 'XXX'`

Explanation An error occurred while attempting to replace the file view.

Action Use HELP LAST to examine the last error message, or check the MANTIS error log.

`Floating point field length must be 4 or 8`

Explanation The indicated floating-point element has a length other than 4 (single precision) or 8 (double precision) bytes.

Action Correct the length.

`Format must be TEXT, PACKED, ZONED, BINARY, FLOAT, or KANJI`

Explanation An invalid format was specified for the element(s).

Action Specify the TOTAL element(s) as only text, packed decimal, zoned decimal, binary, floating-point, or Kanji.

`MANTIS user word contains invalid character`

Explanation The MANTIS name specified for this element contains a character that is not valid in a MANTIS symbolic name.

Action Enter a valid name.

`No data elements supplied for this file`

Explanation This file is missing data elements.

Action When you define the view, you must specify the contents.

`Reference field must be entered`

Explanation A reference field name is required for variable-entry files (a linkage path is specified).

Action Specify a reference field.

`Too many elements in TOTAL file view`

Explanation You may have no more than 192 elements in a TOTAL file view.

Action Adjust the number of elements not to exceed 192.

`TOTAL element name must be 8 characters long`

Explanation An element name was not specified, or one was specified with an invalid length.

Action Specify an element name that is 8 characters long.

`TOTAL element 'XXXXXXXX' specified more than once`

Explanation A TOTAL element can be specified only once in a TOTAL view.

Action Do not specify a TOTAL element more than once in a TOTAL view.

`TOTAL file 'XXXXX' is not allowed`

Explanation This file is protected.

Action Contact your Master User.

`Unsaved changes exist, use <XXX> to confirm`

Explanation You are exiting the facility without saving your changes.

Action Save your changes before exiting the facility, or confirm you want to exit the facility without saving your changes.

`View name must be given and must not start with a blank`

Explanation An invalid name for the view was specified.

Action Specify a TOTAL view name that does not begin with a blank.

`'XXX' already exists`

Explanation You tried to save a file view that already exists.

Action Specify a nonexistent TOTAL file view when you try to save.

`'XXX' deleted`

Explanation The file view was successfully deleted.

Action Informational message only.

`'XXX' does not exist`

Explanation You tried to fetch, replace, or delete a file view that does not exist.

Action Specify an existing TOTAL file view when you try to delete.

`'XXX' fetched`

Explanation The file view was successfully fetched.

Action Informational message only.

`'XXX' replaced`

Explanation The file view was successfully replaced.

Action Informational message only.

`'XXX' saved`

Explanation The file view was successfully saved.

Action Informational message only.

`<XXX> to confirm DELETE; otherwise <CANCEL>`

Explanation You have specified that you want to delete the file view.

Action Confirm that you want to delete the file view, or press CANCEL to stop the deletion.

`You may not specify another user's library`

Explanation No other user's library may be accessed.

Action Access your own library only.

`Zoned decimal field contains more than 16 digits`

Explanation The indicated zoned decimal element exceeds the maximum allowable number of digits.

Action Change the element not to exceed 16 digits.

Prompter design

`Invalid password supplied`

Explanation The password supplied is not valid.

Action Specify the correct password to update or delete a program.

`Name, password, and description required`

Explanation To save a new prompter design, you must enter a name, password, and description.

Action Verify that you supplied all three.

`Next prompter not found`

Explanation The prompter specified in the CHAIN TO NEXT PROMPTER field does not exist.

Action Check the spelling.

`Unsaved changes exist, use <XXX> to confirm`

Explanation You are exiting the facility without saving your changes.

Action Save your changes before exiting the facility, or confirm you want to exit the facility without saving your changes.

`'XXX' already exists`

Explanation The name you specified is not unique.

Action When you save a prompter, specify a name not previously defined.

`'XXX' deleted`

Explanation The prompter was successfully deleted.

Action Informational message only.

`'XXX' does not exist`

Explanation The prompter specified cannot be located.

Action To update or delete a prompter, enter an existing prompter name.

`'XXX' fetched`

Explanation The prompter was successfully fetched.

Action Informational message only.

`'XXX' printed`

Explanation The prompter was successfully printed.

Action Informational message only.

`'XXX' replaced`

Explanation The prompter was successfully replaced.

Action Informational message only.

`'XXX' saved`

Explanation The prompter was successfully saved.

Action Informational message only.

`<XXX> to confirm DELETE; otherwise <CANCEL>`

Explanation You have specified that you want to delete the prompter.

Action Confirm that you want to delete the prompter, or press CANCEL to stop the deletion.

`You may not specify another user's library`

Explanation No other user’s library may be accessed.

Action Do not specify another user’s library.

Interface design

`Action must be 'A'-Alter, 'I'-Insert, or 'D'-Delete`

Explanation You entered an invalid action character.

Action Use the A, I, and D characters only.

`Cannot alter/delete empty line`

Explanation You tried to alter or delete an empty line.

Action You can alter and delete existing lines only.

`CREATE PIPE must be blank for type and data flow specified`

Explanation CREATE PIPE is not used and must be blank for type and data flow specified.

Action Erase contents of the CREATE PIPE field.

`CREATE PIPE must be Y or N`

Explanation You entered an invalid value for the CREATE PIPE field.

Action Use Y (yes) or N (no) only.

`DATA FLOW must be blank for this type of interface`

Explanation DATA FLOW is not used and must be blank for this type of interface.

Action Erase the contents of the DATA FLOW field.

`DATA FLOW must be INPUT, OUTPUT, or FULL`

Explanation You entered an invalid value for the DATA FLOW field.

Action Enter a valid value for the DATA FLOW field.

`Decimal packed field contains more than 17 digits`

Explanation A decimal packed field cannot have more than 17 digits.

Action Limit the number of digits to 17.

```
Dimension should be in 1 to 255 range
```

Explanation The dimension is not in the range of 1–255.

Action Specify the dimension in the range of 1–255.

```
Element length is not in 1 to 254 range
```

Explanation The element length is not in the range of 1–254.

Action Specify the element length in the range of 1–254.

```
Element length must be even for KANJI
```

Explanation The length specified for this Kanji field is not even.

Action Make the length even.

```
Element length must be greater than zero
```

Explanation The element length cannot have a value of zero.

Action Give the element length a value of 1 or greater.

```
Error deleting 'XXX'
```

Explanation An error occurred while attempting to delete the interface.

Action Use HELP LAST to examine the last error message, or check the MANTIS error log.

```
Error inserting 'XXX'
```

Explanation An error occurred while attempting to save the interface.

Action Use HELP LAST to examine the last error message, or check the MANTIS error log.

```
For binary fields length must be 1, 2 or 4
```

Explanation The length of a binary field must be 1, 2, or 4.

Action Make the length 1, 2, or 4.

`For binary fields length must be 2 or 4`

Explanation The length of a binary field must be 2 or 4.

Action Make the length 2 or 4.

`For floating-point fields length must be 4 or 8`

Explanation The length of a floating-point field must be 4 or 8.

Action Make the length 4 or 8.

`Format must be TEXT, PACKED, ZONED, BINARY, FLOAT, or KANJI`

Explanation You entered an invalid value for format.

Action Enter a valid value.

`Format must be TEXT, ZONED, BINARY, FLOAT, or KANJI`

Explanation You entered an invalid value for format.

Action Enter a valid value.

`Line number must be present for action 'A'`

Explanation You can alter an existing line only.

Action Do not try to alter a line that does not exist.

`MBF is only valid for FLOAT fields`

Explanation The MBF (Microsoft Binary Format) element attribute can only be specified for FLOAT fields in nonmainframe interfaces.

Action Specify the MBF attribute only when as noted above.

`MBF is only valid with nonmainframe interfaces`

Explanation The MBF (Microsoft Binary Format) element attribute can only be specified for FLOAT fields in nonmainframe interfaces.

Action Specify the MBF attribute only when as noted above.

`More than 160 data elements`

Explanation Too many data elements exist.

Action Limit data elements to 1–160.

`NAME OF INTERFACE must be given`

Explanation NAME OF INTERFACE must be specified.

Action Enter a valid name for NAME OF INTERFACE field.

`Name must be supplied`

Explanation The name you specified is not a valid name.

Action Specify an interface name which begins with an alphabetic character.

`NAME OF MODULE (dynamic link library) must be given`

Explanation NAME OF MODULE must be specifies for this type of interface.

Action Enter a valid value for the NAME OF MODULE field.

`NAME OF MODULE must be blank for this type of interface`

Explanation NAME OF MODULE is not used and must be blank for this type of interface.

Action Erase the contents of the NAME OF MODULE field.

`NAME OF MODULE must have a .DLL extension`

Explanation NAME OF MODULE must have a .DLL extension.

Action Enter a valid value for NAME OF MODULE including a .DLL extension.

`NAME OF MODULE must have an EXE, COM, BAT, or CMD extension`

Explanation NAME OF MODULE must include an .EXE, .COM, .BAT, or .CMD extension.

Action Enter a valid value for NAME OF MODULE including a correct extension.

`NAME OF MODULE (program) must be given`

Explanation NAME OF MODULE must be specified for this type of interface.

Action Enter a valid value for NAME OF MODULE field.

`NAME OF PIPE must be blank for this type of interface`

Explanation NAME OF PIPE is not used and must be blank for this type of interface.

Action Erase the contents of the NAME OF PIPE field.

`NAME OF PIPE must be given`

Explanation NAME OF PIPE must be specified for this type of interface.

Action Enter a valid value for the NAME OF PIPE field.

`NAME OF PIPE not in format: '\\server\PIPE\name' or '\PIPE\name'`

Explanation NAME OF PIPE must follow ¦server PIPE name or PIPE name formats.

Action Enter a value for NAME OF PIPE in the correct format.

`NAME OF ROUTINE must be blank for this type of interface`

Explanation NAME OF ROUTINE is not used and must be blank for this type of interface.

Action Erase the contents of NAME OF ROUTINE field.

`NAME OF ROUTINE must be given`

Explanation NAME OF ROUTINE must be specified for this type of interface.

Action Enter a valid value for NAME OF ROUTINE field.

`SIZE OF PIPE must be blank unless creating a pipe`

Explanation SIZE OF PIPE is not used and must be blank if CREATE PIPE is not Y (yes).

Action Erase the contents of the SIZE OF PIPE field.

`SIZE OF PIPE must be in the range of 8 to 64,000`

Explanation The SIZE OF PIPE field is not in the range of 8–64,000 bytes.

Action Specify SIZE OF PIPE in the range of 8–64,000 bytes.

`TYPE OF INTERFACE must be PROGRAM, DLL, REMOTE, or MAINFRAME`

Explanation You entered an invalid value for TYPE OF INTERFACE field.

Action Enter a valid value for TYPE OF INTERFACE field.

`TIMEOUT VALUE must be blank for this type of interface`

Explanation TIMEOUT VALUE is not used and must be blank for this type of interface.

Action Erase the content of the TIMEOUT VALUE field.

`TIMEOUT VALUE must be in the range 0 to 64,000`

Explanation A TIMEOUT VALUE is not in the range of 0–64,000.

Action Specify TIMEOUT VALUE in the range of 0–64,000 seconds.

`Unsaved changes exist, use <XXX> to confirm`

Explanation You are exiting the facility without saving your changes.

Action Save your changes before exiting the facility, or confirm you want to exit the facility without saving your changes.

`'XXX' already exists`

Explanation You tried to save an interface under an existing name.

Action Specify a name not previously defined.

`'XXX' deleted`

Explanation The interface was successfully deleted.

Action Informational message only.

`'XXX' does not exist`

Explanation The interface specified cannot be located.

Action Specify an existing interface when you try to fetch, replace, or delete.

`'XXX' fetched`

Explanation The interface was successfully fetched.

Action Informational message only.

`'XXX' replaced`

Explanation The interface was successfully replaced.

Action Informational message only.

`'XXX' saved`

Explanation The interface was successfully saved.

Action Informational message only.

`<XXX> to confirm DELETE; otherwise <CANCEL>`

Explanation You have specified that you want to delete the interface.

Action Confirm that you want to delete the interface, or press CANCEL to stop the deletion.

`You may not specify another user's library`

Explanation No other user's library may be accessed.

Action Do not specify another user's library.

`Zoned decimal field contains more than 16 digits`

Explanation A zoned decimal field cannot have more than 16 digits.

Action Limit the number of digits to 16.

Scenario design

```
Associated record layout 'XXX' does not exist on your library
```

Explanation The MANTIS file associated with this scenario screen specifies an associated record layout which does not exist.

Action Specify a valid associated record layout.

```
Delete not performed
```

Explanation MANTIS will not delete the scenario until you confirm the deletion.

Action Press PF3 to confirm the deletion.

```
Deletion complete
```

Explanation Confirmation for scenario DELETE option.

Action Informational message only.

```
DOS File view 'XXXX' does not exist in your library
```

Explanation The file view you specified is in another user's library or does not exist.

Action Specify a DOS file view that exists in your library.

```
DOS File view 'XXXXX' is not available for browse
```

Explanation The file view you specified does not have browse access.

Action Specify another DOS file view.

```
DOS File view 'XXXXX' is not available for entry
```

Explanation The file view you specified does not have entry access.

Action Specify another DOS file view.

`Every data field must be entered - please recheck`

Explanation One or more data fields were not entered.

Action Complete every entry on the Data Definition for scenario screen.

`Function key is already in use`

Explanation You specified an existing function key for the scenario.

Action Specify a function key that has not been previously defined to the scenario.

`Function key is not addressable`

Explanation You have placed a screen or program name in a position associated with an undefined function key.

Action Remove the screen or program name.

`Function key 'XXX' is invalid`

Explanation When running a scenario, you pressed a key that is not one of the valid scenario keys, as listed on the Scenario Definition menu.

Action Press a valid key.

`Function 'XXXXX' has not been defined to program`

Explanation You tried to execute an invalid function for the scenario.

Action Specify a function key that has been previously defined to the scenario.

`Invalid function key`

Explanation You have pressed a function key that has not been or cannot be defined to the scenario.

Action Use valid scenario function keys only.

```
Invalid password
```

Explanation The password you supplied is incorrect.

Action Specify the correct password to insert, alter, or delete a password protected scenario.

```
MANTIS File view 'XXXX' does not exist in your library
```

Explanation MANTIS cannot locate the file view that you specified.

Action Specify a MANTIS file view that exists in your library.

```
MANTIS File view 'XXXXX' is not available for browse
```

Explanation The file view you specified does not have browse access.

Action Specify another file view.

```
MANTIS File view 'XXXXX' is not available for entry
```

Explanation The file view you specified does not have entry access.

Action Specify another file view.

```
Please enter the appropriate file type
```

Explanation The file type needs to be specified.

Action Specify the type of file you are defining (MANTIS, DOS).

```
Please enter the appropriate key type
```

Explanation The key type needs to be specified.

Action Specify the data type of your key: N (numeric) for BIG and SMALL data types; T for TEXT.

```
Program 'XXXXX' does not exist in your library
```

Explanation The program you specified is in another user's library or does not exist.

Action Specify a program that exists in your library.

`Program 'XXXXX' does not exist in your library`

Explanation The prompter you specified is in another user's library or does not exist.

Action Specify a prompter that exists in your library.

`Scenario alterations discontinued`

Explanation You pressed CANCEL to discontinue alterations and return to the Scenario Design Facility menu.

Action Select an option from this menu or press CANCEL again to exit the Scenario Design Facility menu.

`Scenario and/or screen does not exist`

Explanation MANTIS cannot locate the specified scenario and/or screen.

Action Specify an existing scenario and/or screen when you try to delete.

`Scenario definition complete`

Explanation The specified scenario definition has been copied.

Action No action required, confirmation only.

`Scenario definition discontinued`

Explanation You pressed the CANCEL key to discontinue the scenario definition and return to the Scenario Design Facility menu.

Action Select an option from this menu or press CANCEL again to exit the Scenario Design Facility menu.

`Scenario has been altered`

Explanation The alterations specified are complete and have been filed.

Action No action required; confirmation only.

`Screen already used in current scenario`

Explanation You have specified the same screen name more than once on the Scenario Definition menu.

Action If you want to use a screen more than once, you must save the screen with different names so you can provide a new name for each occurrence.

`Screen name is not a main menu for this scenario`

Explanation You did not specify the parent screen in the scenario when you selected the Display Tree Structure option.

Action Specify a parent screen.

`Screen 'XXXXX' does not exist in your library`

Explanation The screen you specified is in another user's library or does not exist.

Action Specify a screen that exists in your library.

`Screen 'XXXXX' has not been defined to this scenario`

Explanation You specified a screen that does not exist in this scenario.

Action Specify a screen that has been defined for this scenario.

`This scenario already exists`

Explanation The scenario name you specified is not unique.

Action Specify a unique name for this scenario.

`This screen does not exist for this scenario`

Explanation The screen you specified on an Alter or Run request has not been defined for this scenario.

Action Correct the screen name or select Insert to define the screen for this scenario.

`<XXX> to confirm DELETE; otherwise <CANCEL>`

Explanation You need to confirm or cancel the deletion.

Action Press PF3 to perform the deletion; press any other key to cancel the deletion.

`You must enter a name`

Explanation A name was not supplied.

Action Specify a name for the scenario you want to insert.

Transfer

`Added`

Explanation The transfer to bin/library was successful.

Action Informational message only.

`All records must be selected for KANJI or mixed keys`

Explanation When copying user file records with Kanji/mixed keys, all records must be copied by specifying the generic key ∗ in the starting key field.

Action Use the generic key ∗.

`Bin already exists`

Explanation A bin already exists with the specified name.

Action Examine the directory, and choose a different name for the bin you are creating.

`Bin created`

Explanation Confirmation for CREATE A NEW BIN option.

Action Informational message only.

`Bin deleted`

Explanation The Delete Entire Bin operation was successful.

Action Informational message only.

`Cannot add`

Explanation The entity to be copied already exists.

Action Use R to replace the previous copy, or use the NEW NAME field to copy the entity under a different name.

`Delete canceled`

Explanation Cancellation of the Delete Entire Bin operation was successful.

Action Informational message only.

`Deleted`

Explanation The entity was successfully deleted.

Action Informational message only.

`Ending name not allowed with generic name`

Explanation Both an ending name and a generic name were specified.

Action Either use the Range option by specifying STARTING NAME and ENDING NAME or supply a Generic Name (Pattern) in STARTING NAME and leave ENDING NAME blank.

`Enter new password and press enter`

Explanation This is a prompt in the Change password for Bin operation.

Action Type in the new password and press enter.

`Error accessing transfer file`

Explanation The transfer file is not available.

Action Use HELP LAST to examine the last error message, or check the MANTIS error log.

`File not found - XXX`

Explanation The file containing the records to be copied could not be found in the library or bin.

Action Check the spelling of the specified file.

`File profile is not in bin`

Explanation The file profile must be transferred to the bin before records can be copied into it.

Action Use the File Profile option from the Copy From Library to Bin menu to copy the profile; then try again.

`File profile is not in library - XXXX`

Explanation The file profile must be transferred to the library before records can be copied to it.

Action Use the File Profile option from the Copy From Bin to Library menu to copy the profile; then try again.

`**I/O error`

Explanation An I/O error occurred while accessing the Transfer File.

Action Check the MANTIS.LOG file for the specified screen code returned by the operating system.

`Incorrect password`

Explanation The password entered does not match the password for the specified bin.

Action Check the bin name for accuracy and retype the password.

`Invalid bin name`

Explanation The specified name is not valid.

Action Specify a different bin name.

`Key lengths are different between files`

Explanation When copying user file records, the lengths of the keys (as defined in the source and destination profiles) are different.

Action Check the file names and possibly transfer a newer version of the profile before reattempting the copy.

`Key types are different between files`

Explanation When copying user file records, the types of the keys (as defined in the source and destination profiles) are different.

Action Check the file types and possibly transfer a newer version of the profile before reattempting the copy.

`Maximum number of bins exceeded`

Explanation The request to Create a Bin failed because more than 360 bins exist in the same transfer file.

Action Be sure no active bins have been left in the transfer file.

`Maximum number of sets exceeded`

Explanation The total number of bins and user files in the transfer file exceeds 999, or you tried to copy a file profile to a user's library when the maximum number of sets in that library has been reached.

Action Delete inactive bins or file profiles, or delete inactive file profiles.

`Must specify low key in range`

Explanation When a key is supplied, a starting key must also be supplied.

Action Supply a starting key.

`No names may be specified with 'ALL' option`

Explanation The ALL USER ENTITIES option was selected, but a starting name and/or ending name was supplied also.

Action Supply the missing starting name or ending name.

`Password changed`

Explanation Confirmation on CHANGE PASSWORD FOR BIN option.

Action Informational message only.

`Password not changed`

Explanation Confirmation that the CHANGE PASSWORD FOR BIN option was canceled.

Action Informational message only.

`Permission denied`

Explanation You tried to transfer restricted entities (e.g., programs under the control User ID).

Action Do not attempt this action.

`Press enter to confirm DELETE`

Explanation Prompt for confirmation on DELETE ENTIRE BIN option.

Action To confirm the procedure, press ENTER. To cancel the procedure, press CANCEL.

`Record not found`

Explanation The specified record could not be located in the file.

Action Be sure the name or key has been entered correctly and that the proper entity type has been selected.

`Replaced`

Explanation Confirmation on transfer to bin/library operation.

Action Informational message only.

`Specify record key(s)`

Explanation When copying user file records, a specific key, a generic key, or a range of keys must be specified.

Action Specify the missing specific key, generic key, or range of keys.

`Specify starting name in range`

Explanation When an ending name or key is supplied, a starting name or key must also be supplied.

Action Supply a starting name or key.

`Transfer area is full`

Explanation The maximum number of files (999) has been reached in the transfer file. no new files can be transferred out, and no new bins can be created.

Action Delete some obsolete files.

`Transfer is not yet available to you - see Master User`

Explanation The Master User has not made this facility available.

Action Do not try to use this facility, or contact your Master User.

`Unable to create bin directory`

Explanation An error occurred while attempting to create a new bin. Probable MANTIS library corruption.

Action Use HELP LAST to examine the last error message, or check the MANTIS error log.

`Unknown bin`

Explanation A bin does not exist with the specified name.

Action Use the bin directory to determine the correct name.

`User not found`

Explanation The user specified in the User ID field is not defined in the MANTIS library.

Action Check the spelling.

`XXX data records copied`

Explanation Confirmation for copy of multiple records from user file to library/bin, indicating the number of records copied.

Action Informational message only.

`XXX entities copied to bin`

Explanation Confirmation for copy of multiple entities to bin, indicating the number of records copied.

Action Informational message only.

`XXX entities copied to library`

Explanation Confirmation for copy of multiple entities to library, indicating the number of records copied.

Action Informational message only.

`XXX records deleted`

Explanation Confirmation for deletion of multiple entities from bin, indicating the number of records deleted.

Action Informational message only.

`**'#' is not a recognized language`

Explanation An unknown LANGUAGE name was specified.

Action Specify a valid LANGUAGE name.

DL/I Call Profile Design

`A maximum number of 12 search fields is allowed`

Explanation You are attempting to define more than 12 search fields.

Action Alter the number of search fields so that when all insert and delete options are complete, the number of search fields will be less than or equal to 12.

`A maximum number of 15 segments in hierarchy is allowed`

Explanation You are attempting to define more than 15 segments for one hierarchy.

Action Alter your definition so that when all insert and delete operations are complete, no more than 15 segments will be defined for one hierarchy.

`Action must be: 'A'-Alter, 'I'-Insert or 'D'-Delete`

Explanation You have entered an invalid action character. Valid action characters are: A (alter), I (insert), and D (delete).

Action Supply a valid action character.

`Action must be: 'A'-Alter, 'I'-Insert, 'D'-Delete or 'S'-Select`

Explanation You have entered an invalid action character. Valid action characters are: A (for alter), I (insert), D (delete), and S (select).

Action Supply a valid action character.

`Already exists - use REPLACE`

Explanation The Call Profile specified already exists.

Action Use the REPLACE function to save changes to an existing Call Profile or save the Call Profile under another name.

`Binary field length must be 2 or 4`

Explanation The length supplied for a binary field is not valid.

Action Enter a valid length for the field.

`Boolean connector must be AND or OR`

Explanation An invalid value was used for a Boolean character.

Action Use AND or OR for a Boolean connector. The default value is AND.

`Call Profile printed`

Explanation This message confirms that MANTIS has completes your request to print a Call Profile.

Action No action is required.

`Cannot amend/delete line 0`

Explanation You cannot change or delete line zero (0).

Action Enter a valid line number (1–15).

`Fetched`

Explanation The Call Profile was successfully fetched.

Action Informational message only.

`For floating point fields, length must be 4, 8, or 16`

Explanation The length supplied for a floating-point field is not valid.

Action Enter a length for the field.

`Length missing or greater than 16 for NUMERIC field`

Explanation Either the length of a field was not supplied, or the length supplied for a numeric field is greater than 16.

Action Modify the length of the numeric field accordingly.

`Length must be even for KANJI`

Explanation The length supplied for a Kanji field must be an even number of bytes.

Action Enter a valid length for the field.

`Line does not exist`

Explanation The line you specified does not exist.

Action Enter a valid line number.

`Line number cannot exceed 15`

Explanation The line number (or relative SSA number) you have entered is greater than 15, which is the maximum.

Action Reenter the line number.

`One or more duplicate Command Codes`

Explanation At least two of the Command Codes you supplied are duplicates.

Action Do not specify any Command Code twice in the same call. Check the Command Codes and modify accordingly.

`One or more incorrect Command Codes`

Explanation At least one of the Command Codes you supplied is invalid. Valid Command Codes are: C, D, F, L, N, P, Q, U, and V. Refer to your DL/I or IMS manual for an explanation of each code. Do not specify any Command Code twice in the same call. If you specify an SSA with a Command Code of C, it must be the first and only SSA in the Call Profile.

Action Check the Command Codes and modify accordingly.

`Only one S is permitted and it must be the only action`

Explanation You have entered more than one S (select), or you have entered an S with another action character.

Action Enter one S and remove the other action characters, or remove the S.

`Operator invalid`

Explanation The operator you supplied is invalid. Valid operators are:

- EQ or = (equal to)
- NE or <> (not equal to)
- LT or < (less than)
- GT or > (greater than)
- LE or <= (less than or equal to)
- GE or >= (greater than or equal to)

Action Enter a valid operator.

`Please supply Call Profile name`

Explanation You did not provide a name for the Call Profile.

Action Provide a 1- to 16-character symbolic name for the Call Profile.

`PBS not supplied`

Explanation You did not provide the name of the PSB (Program Specification Block).

Action Provide the name of the PSB to be used for accessing the DL/I database when using this Call Profile.

`Relative PCB not supplied`

Explanation You did not provide a Relative DB PCB (Program Communication Block) number.

Action Provide a valid relative DB PCB number (relative to 1) in the PSB to be used for accessing the DL/I database when using this Call Profile.

`Replaced`

Explanation The Call Profile was successfully saved.

Action Informational message only.

`Saved`

Explanation The Call Profile was successfully saved.

Action Informational message only.

`Search field name not supplied`

Explanation A search field name was not supplied.

Action Provide the 1- to 16-character MANTIS variable name to be associated with the search field.

`Segment name not supplied`

Explanation You did not provide a segment name.

Action Provide a valid segment name.

`SIGN must be Y or N`

Explanation An invalid value was entered for SIGN. Valid values are: Y (yes) or N (no).

Action Enter a valid value for SIGN. The default value is N.

`The profile definition is incomplete`

Explanation The profile definition is not complete as defined.

Action Check the profile definition and modify accordingly.

`There are no fetched Call Profiles`

Explanation You requested the Print Completed Design option before a Call Profile was fetched into your work area.

Action Use the Library Functions option to fetch the Call Profile before you attempt to print the completed design.

`Type must be TEXT, KANJI, PACKED, BINARY, ZONED, or FLOAT`

Explanation The type you specified is not a valid type.

Action Enter a valid type.

`Unsaved changes exist, use <XXX> to confirm`

Explanation You have not saved updates to the entity currently in your work area.

Action Use Library Functions to save or replace the entity, or press CANCEL to terminate the facility.

`Use XXXXX to confirm DELETE; otherwise CANCEL`

Explanation This message asks for you to confirm your selection to delete a Call Profile.

Action Press the specified key to delete the Call Profile, or press CANCEL to return to the DL/I Call Profile Design Facility menu.

`'XXX' deleted`

Explanation The Call Profile was successfully deleted.

Action Informational message only.

`'XXX' does not exist`

Explanation The Call Profile specified does not exist.

Action Correct the Call Profile name.

`You cannot delete a nonexistent line`

Explanation The number you specified to be deleted does not exist.

Action Enter a valid line number.

Universal Export Facility

`At least one entity or "ALL" must be selected`

Explanation You did not select an entity type on the main UEF screen.

Action Select “ALL” or at least one entity.

`Invalid design name or wild card expression - enter again`

Explanation The name entered in the SELECTION field of the main UEF screen is invalid.

Action Enter a valid entity name.

`Cannot select other entities if "ALL" is selected`

Explanation You have selected “ALL” and other entities which is an illegal combination.

Action Either select “ALL” only or select one or more other entities.

`The 'SELECTION' field should contain nothing`

Explanation The SELECTION field of the main UEF screen is not blank when it should be.

Action Blank out the SELECTION field.

`Directory should be turned off`

Explanation Export with directory has been selected when it should not have been.

Action Enter N (no) in the EXPORT USING DIRECTORY SELECTION field of the UEF options screen.

`Fields must be specified in ROW/COLUMN order`

Explanation On import, screen fields are to be in row/column order. This message is displayed when they are not.

Action Edit the export file to arrange the screen fields in row/col order.

`## ENTITIES ###, ### DATA RECORDS, #### ERRORS, #### WARNINGS`

Explanation This message is displayed at the end of UEF processing, it shows the number of entities processed (for either export or import), the number of data records processed, the number of errors that occurred and the number of warnings that were reported.

Action Informational only. No action required.

`Default description for UEF Import`

Explanation IBM requires that entities are stored with a description, PC and CCB do not. This message is used as the default description for IBM when the export file has been generated from CCB or PC and no description exists.

Action Informational only. No action required.

`Default ######### assigned`

Explanation This message warns the user that a default has been used.

Action Informational only. No action required.

`This function is not available`

Explanation This message is displayed when the executing MANTIS is an execute only version. UEF is not available in an execute only MANTIS.

Action UEF can only be accessed using a nonexecute-only version of MANTIS. Contact Cincom Support.

`Error in creating file, please reenter FILE NAME`

Explanation The EXPORT FILE NAME supplied on the main UEF screen is invalid, or system permissions prevent the creation of a file.

Action Enter a valid file name or change directory or change the permission on the current directory.

`Data not imported for privileged file #########`

Explanation This message indicates that an attempt was made by a nonprivileged user to import privileged file data.

Action Informational only. No action required.

`File not found, reenter name or <CANCEL> to exit`

Explanation The file specified by EXPORT FILE NAME on the main UEF screen does not exist.

Action Enter the name of an existing file in the EXPORT FILE NAME field of the main UEF screen.

`Specified DEVICE not valid`

Explanation Invalid screen device dimensions (ROWS x COLS) were specified in the SCREEN DEVICE field of the UEF options screen.

Action Enter valid screen device dimensions in the SCREEN DEVICE field.

`Privileged file ########### not imported`

Explanation This message indicates that an attempt was made by a nonprivileged user to import a privileged file.

Action Informational only. No action required.

`Specified LANGUAGE not valid`

Explanation A language unknown to MANTIS was specified in the LANGUAGE field of the UEF options screen.

Action Enter a language known to MANTIS in the LANGUAGE field.

`User ############# is not recognized`

Explanation This message is only displayed for the CONTROL user, when the CONTROL user attempts to export all entities for a particular user and that user does not exist.

Action Make the user known to MANTIS, by asking you administrator to create the USER specified.

`EXPORTED`

Explanation This message is never displayed standalone rather it forms part of "## ENTITIES ###, ### DATA RECORDS, #### ERRORS, #### WARNINGS".

Action Informational only. No action required.

`IMPORTED`

Explanation This message is never displayed standalone rather it forms part of "## ENTITIES ###, ### DATA RECORDS, #### ERRORS, #### WARNINGS".

Action Informational only. No action required.

`' #########' already`

Explanation This message is displayed when an attempt is made to import an entity that already exists, and ADD has been specified on the UEF options screen.

Action If you really want to import this particular entity then put an R in the ADD OR REPLACE field of the UEF options screen. Note doing so will override the existing design with the one being imported.

`Invalid attribute '##############'`

Explanation The attribute given is not known to UEF.

Action Check the attribute against the list of known attributes and update the export file accordingly.

`Too many files allocated`

Explanation This message is displayed when the MANTIS limit for the number of open files is reached.

Action Contact Cincom Support.

`Quoted text literal expected`

Explanation On import a string was expected but was not found.

Action Update the export file to add the expected quotes.

`######### field limit exceeded`

Explanation This message is displayed when the MANTIS limit for the number fields for SCREENS, SETS, ACCESSES or INTERFACES is reached.

Action Update the export file removing the number of fields in excess of the number allowed.

`######### field count exceeded the number of fields specified`

Explanation This message indicates that during import of a FILE, SCREEN, ACCESS or INTERFACE, the number of fields specified did not equal a count of the specified fields.

Action Decrease the number of fields specified, by editing the export file.

`Invalid data type '###############'`

Explanation Displayed data type is not known to UEF.

Action Assign a valid data type.

`PROMPTER line limit exceeded`

Explanation This message indicates that during the import of a prompter description the prompter line limit was exceeded.

Action Update the export file removing the number of prompter lines in excess of those allowed.

`PROMPTER line count exceeded the number of lines specified`

Explanation This message indicates that during import of a PROMPTER, the number of lines specified did not equal a count of the specified lines.

Action Correct the prompter line count descriptor in the export file.

`Number of valid list items exceeded the number specified`

Explanation This message indicates that during import of a SCREEN field, the number of valid list items specified did not equal a count of the specified valid list items.

Action Update the export file to either increase the specified valid list item count or to decrease the number of valid list items specified.

`File type should be 'PRIMARY' or 'RELATED'`

Explanation Indicates that an ULTRA/TOTAL file type was not one of RELATIVE or PRIMARY.

Action Correct the FILE_TYPE descriptor in the export file.

`Expected '#' but received '#'`

Explanation During import an expected character was not detected.

Action Update the export file, in accordance with the Universal Export Facility syntax.

`Invalid token '############'`

Explanation A token unknown to UEF was detected.

Action Update the export file, in accordance with the Universal Export Facility syntax.

`on input line ##########`

Explanation This message is used in association with “Invalid token ‘##########’” to indicate the line of the export file where the Invalid token was detected.

Action Informational only. No action required.

`Added data for ##########`

Explanation Processing message indicating into which file data has been added.

Action Informational only. No action required.

`Replaced data for ####################`

Explanation Processing message indicating into which file data has been replaced.

Action Informational only. No action required.

`Skipping remainder of definition`

Explanation This message is displayed when import detects an error in the current description and is unable to recover.

Action Informational only. No action required.

`Restart at line ##########`

Explanation This message is used in conjunction with “Skipping remainder of definition” to indicate at which line import processing will restart from.

Action Informational only. No action required.

`Processing ##############`

Explanation During export this message indicates the name and type of entity being processed.

Action Informational only. No action required.

`The closing quote is missing from a text literal`

Explanation On import a string was detected but it does not have matching opening and closing quotes.

Action Update the export file to add the expected quotes.

`Invalid Entity Type`

Explanation This message is displayed when the *entity_type* passed from the library functions is not one of SCREEN, PROCESS, PROMPTER, SET, ACCESS, INTERFACE or SUPRA.

Action Contact Cincom Support.

`Ignoring #############`

Explanation The entity specified did not match the selection criteria specified, thus it is being ignored.

Action Informational only. No action required.

`Line number ###### commented out`

Explanation This message is displayed when a program line being imported is illegal.

Action Informational only. No action required.

`INTERNAL INTERFACE set to ##`

Explanation (CCB Only) On import of an Interface the internal interface was set to the specified value.

Action This may not require any action, but it is displayed to inform the user that this is a possible problem area.

`INTERNAL INTERFACE BUFFER set to ###`

Explanation (CCB Only) On import of an Interface the internal interface buffer was set to the specified value.

Action This may not require any action, but it is displayed to inform the user that this is a possible problem area.

`.MSD.MPR.MIF.MPT.MEF.MID.MPD`

Explanation File name extensions for Library Functions, IMPORT/EXPORT.

Action Informational only. No action required.

`An indexed file must specify a key field`

Explanation On import an indexed file without a key was detected.

Action Update the Export file, adding the attribute of KEY to the key fields.

`#### #### mapped to ####`

Explanation This message informs the user of any mapping that has taken place when importing an export file that was generated on another platform.

Action This may not require any action, but it is displayed to inform the user that this is a possible problem area.

`Invalid ###############`

Explanation Indicates that the given descriptor and value is not known to UEF.

Action Update the export file, changing the invalid descriptor to a valid one.

`ACCESS_METHOD must be BINARY/TEXT for RELATIVE/SEQUENTIAL file`

Explanation (CCB Only) During import of an ACCESS description with RELATIVE file type an ACCESS_METHOD other than BINARY was detected or for an ACCESS description with SEQUENTIAL file type an ACCESS_METHOD other than TEXT was detected.

Action Correct the ACCESS_METHOD descriptor in the export file.

`INTERNAL INTERFACE COBOL set to ###`

Explanation Informs the user that the INTERNAL INTERFACE COBOL has been set to the given value.

Action Informational only. No action required.

`INTERNAL INTERFACE RESIDENT set to ###`

Explanation Informs the user that the INTERNAL INTERFACE RESIDENT has been set to the given value.

Action Informational only. No action required.

`######## not supported on this platform`

Explanation The specified descriptor is not supported on the current platform.

Action This may not require any action, but it is displayed to inform the user that this is a possible problem area.

`############## required but not found`

Explanation During import an entity profile is built. Some platforms require that certain descriptors be supplied prior to the entity being added/replaced in the MANTIS Cluster. This message indicates which descriptors are required but have not been found.

Action Update the export file adding the required descriptor for the specified entity.

`First field of file must have attribute of KEY`

Explanation During import of a FILE description it was detected that the first field specified did not have an attribute of KEY.

Action Update the export file adding the attribute of KEY the first field of the specified entity description.

`FIELD_TYPE must exist for each field`

Explanation During import a field was read that did not have a FIELD_TYPE.

Action Update the export file adding the FIELD_TYPE descriptor to each field of the specified entity.

`KEY_OF_REFERENCE cannot exist for an INDEXED file type`

Explanation During import of an INDEXED file the KEY_OF_REFERENCE descriptor was detected.

Action Update the export file removing the KEY_OF_REFERENCE reference descriptor or changing the FILE_TYPE descriptor to one that does support a KEY_OF_REFERENCE.

`REFERENCE_VARIABLE must exist for a NUMBERED file type`

Explanation During import of a NUMBERED file the REFERENCED_VARIABLE descriptor was not detected.

Action Update the export file to add a REFERENCE_VARIABLE descriptor, or change the FILE_TYPE to one that does not require a REFERENCE_VARIABLE.

`########## cannot exist for REMOTE Interface`

Explanation During import of a REMOTE interface the given descriptor was detected when it shouldn't have been.

Action Update the export file, removing the specified descriptor for the specified entity description.

`in #########`

Explanation The message is used in conjunction with a number of other messages to indicate the entity type and name in which an error occurred.

Action Informational only. No action required.

`######## set to 'NO'`

Explanation (CCB ONLY) Indicates that the given descriptor was set to NO, during import.

Action This may not require any action, but it is displayed to inform the user that this is a possible problem area.

`skipping to matching closing bracket`

Explanation During import if an error was detected that was associated with a left bracket, then this message is displayed indicating that processing has skipped to the matching right bracket.

Action Informational only. No action required.

`Status not 'ACTIVE' for file ###############`

Explanation This message is warning the user that the FILE they are attempting to process has a non-ACTIVE status and thus cannot be processed.

Action Update the export file, changing the status of the specified entity description to ACTIVE.

`No data imported for file ###########`

Explanation This message is used in conjunction with “Status not ‘ACTIVE’ for file ###############” to indicate the non-ACTIVE file for which the data was not imported.

Action Information only. No action required.

`No data exported for file ############`

Explanation This message is used in conjunction with “Status not ‘ACTIVE’ for file ###############” to indicate the non-ACTIVE file for which the data was not exported.

Action Information only. No action required.

`Deleting File #################`

Explanation Indicates that an error was encountered when attempting to delete the FILE given prior to another version of the FILE being imported.

Action Contact Cincom Support.

`REFERENCE_VARIABLE must not exist for an INDEXED file`

Explanation During import of an INDEXED file the REFERENCE_VARIABLE descriptor was detected.

Action Update the export file to remove a REFERENCE_VARIABLE descriptor or to change the FILE_TYPE to one that does require a REFERENCE_VARIABLE.

`REFERENCE_VARIABLE must exist for NUMBERED file`

Explanation During import of a NUMBERED file the REFERENCE_VARIABLE descriptor was NOT detected.

Action Update the export file to add a REFERENCE_VARIABLE descriptor or to change the FILE_TYPE to one that does not require a REFERENCE_VARIABLE.

`Variable length records not allowed for NUMBERED files`

Explanation During import an ACCESS description with NUMBERED FILE_TYPE and variable length records was detected.

Action Update the export file, changing the variable length records to fixed length records.

`KEY fields not allowed for SEQUENTIAL/NUMBERED files`

Explanation During import a FILE with ASCII FILE_TYPE and ACCESS_METHOD other than DOS was detected.

Action Update the export file, removing the attribute of KEY from all the fields of the specified descriptor.

`RECORD_TYPE must be ##############`

Explanation During import a RECORD_TYPE other than the one given was detected.

Action Update the export file changing the RECORD_TYPE to that specified.

`Both NUM_REPEATS and FIRST_REPEATING_ELEMENT must be specified`

Explanation During import a descriptor was found where either NUM_REPEATS or FIRST_REPEATING_ELEMENT was specified with out the other.

Action Update the export file, specifying both NUM_REPEATS and FIRST_REPEATING_ELEMENT descriptors for the description specified.

`Scanned beyond end of line`

Explanation This error should never occur. It indicates some form of corruption during the reading of the export file.

Action Contact Cincom Support.

`KEY fields not allowed for FILE_TYPE specified`

Explanation Indicates that during import a field with the KEY attribute was detected for a FIL_TYPE on which this is not allowed.

Action Update the export file, removing the attribute of KEY from all the fields of the specified descriptor.

`RELATIVE files must specify a REFERENCE_VARIABLE`

Explanation Indicates that during import a RELATIVE file without a specified REFERENCE_VARIABLE was detected.

Action Update the export file, adding a REFERENCE_VARIABLE descriptor for the entity description specified.

`Variable length records not allowed for ######## file`

Explanation Variable length records are not permitted for the given file type.

Action Update the export file, changing the variable length records to fixed length records.

`Illogical program ########## not imported`

Explanation Indicates that an attempt was made to import an illogical program.

Action Update the export file, altering the program lines so that the program is no longer illogical.

`INTERFACE TYPE set to ############`

Explanation Informs the user that the INTERFACE TYPE has be set to the given value.

Action Informational only. No action required.

`Adding ######################`

Explanation Indicates that an error occurred while adding the given entity.

Action Contact Cincom Support.

`Replacing ##################`

Explanation Indicates that an error occurred while replacing the given entity.

Action Contact Cincom Support.

`Error ### opening log file`

Explanation The system permissions prevent the opening of the log file.

Action Change directories or change the permissions on the current directory.

`Importing data for ##########`

Explanation This message indicates that an error occurred during import of the data for the given file.

Action Contact Cincom Support.

`Invalid data entered in ###### field, please reenter`

Explanation This message indicates that an invalid value has been entered in the given field of the main UEF screen.

Action Enter valid data in the field specified.

`Error opening external file '########'`

Explanation The system permissions prevent the opening of an external file.

Action Change the permissions on the file specified.

`Cannot specify same value for #### ### ###`

Explanation The given descriptors do not have unique values.

Action Update the export file, giving unique values to the descriptors specified.

`Associated record chain not complete for #######`

Explanation Indicates that the ASSOCIATED_RECORD_LAYOUT does not exist.

Action Ensure that all associated records can be found in the MANTIS file prior to importing.

`Fields specified do not match those of associated layout`

Explanation Indicates that the fields of the FILE being imported do not match those of the ASSOCIATED_RECORD_LAYOUT specified.

Action Contact Cincom Support.

`Added ################`

Explanation Indicates that the given entity was added to the MANTIS Cluster.

Action Informational only. No action required.

`Replaced #############`

Explanation Indicates that the given entity was replaced in the MANTIS Cluster.

Action Informational only. No action required.

`###################### not Imported`

Explanation Indicates that the given entity description was not imported.

Action Informational only. No action required.

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Reader Comment Sheet

Name: _____

Job title/function: _____

Company name: _____

Address: _____

Telephone number: _____ Date: _____

How often do you use this manual? ☐ Daily ☐ Weekly ☐ Monthly ☐ Less

How long have you been using this product? ☐ Months ☐ Years

Can you find the information you need? ☐ Yes ☐ No Please comment.

_____

_____

Is the information easy to understand? ☐ Yes ☐ No Please comment.

_____

_____

Is the information adequate to perform your task? ☐ Yes ☐ No Please comment.

_____

_____

General comment: _____

_____

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To respond, please fax to Larry Fasse at (513) 612-2000.

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