

PowerNet Screen Formatter

Reference Manual

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Production This manual was written, edited, and
produced by
Connect, Inc.
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Printed in the U.S.A.

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1 Screen Formatter Overview

Introduction

The *Screen Formatter* object editor package allows adaptation of full-size host application screens to smaller RF terminal displays. No programming knowledge is required, and the package is fully integrated with the Gateway software.

Host application screens are gathered with the full-screen *Terminal Emulator* function, which is provided with each connectivity option package. A database of screen information, known as an *object*, is created through this utility. This object can then be accessed and processed with the *Screen Formatter Tool* resulting in a set of RF terminal screens. Finally, the formatted object is linked to the real-time terminal emulation *Handler* as a *formatter object*. When the formatter object is activated, incoming host screens are examined for matches against the format database. If an incoming host screen matches a captured screen identified in the format database, the reformatted information is displayed to the user of the remote device.

While using the *formatter*, all operations are performed from within the menu-driven Gateway system software. An exit to the UNIX shell is not necessary, nor is command line operation.

The process of using the *Screen Formatter* is simple. The process starts with a blank terminal screen page, captured host screens, and an empty buffer. A field on a host screen is marked, copied to the buffer, and then placed on the terminal screen page and the buffer cleared. This action is repeated until all the necessary host fields appear on the terminal screen, which is a collection of pages. Each incoming host screen, which has fields that are necessary for the user to complete a given task, can then have a corresponding terminal screen.

There are a few other minor operations that are important, such as identifying which host and terminal screens match. This document explains these operations.

Features

The *Screen Formatter* Package offers the following:

- **Remote Use**—As with all other Gateway options, the *Screen Formatter* can be used from any location by dialing in to the system modem. No special input devices (such as a mouse) or specific keyboards are required.
- **No Modification of Host Applications**—Only the remote RF terminal screens are customized, the host application remains the same.
- **All RF Terminals Can Be Accommodated**—The *Screen Formatter* allows you to specify the size of the remote RF terminal display.
- **Large Input Field Capacity**—Each host application can have up to 64 terminal screens, with each screen having 16 pages. Up to 32 fields (host text, new text, or input—with a length up to the terminal's display width) from a host screen may be contained on a page. This totals to 512 fields from one host screen, and with 64 host screens, there are 32,768 fields per application.
- **New Display-only text Fields**—New text-only fields not appearing on the host screens can be created and placed on terminal pages. These are useful for instructions or titles.
- **Function Keys**—The operation of terminal function keys can be enabled, disabled, and assigned local functions that allow the operator even greater control of the terminal when under management of the screen formatter.
- **Flexible Software**—The *Formatter* does not require you to format all host fields or all host screens. Fields from one host screen must be placed on one terminal screen (which has 16 pages), but the entry order of these fields is up to the designer and can be changed at any time.

Usage Notes

The screen formatter functions only with screens or hosts used in the terminal emulation environment such as VT100, VT220, HP700, 3270, and 5250. Any other application such as SAB emulation, client streaming, etc., not using the terminal emulations described previously, cannot be used in conjunction with the Screen Formatter.

Keep in mind that use of the formatter requires the use of two discreet tools, the *Emulator* and the *Screen Formatter*. The *Emulator* is used to capture screens that are to be used with the *Screen formatter* to modify and show to the user of the remote RF terminal. Please see the corresponding *Reference Manuals* for using the *Emulator* tool under terminal emulation.

Functionality of the screen capture function under the VTerm (VT100, VT220, HP700) emulator is slightly different than the screen capture function of the 3270 or 5250 emulator and is described later. However, once screens are captured from the host, operation of the formatter tool is essentially identical for all terminal emulation environments.

Gateway Menus Accessing the Emulator

To access the emulator that captures screens from the host application, select the *Emulator* function from the corresponding host connectivity menu. The emulator function is available under the following main menu entries: *VTerm*, *3270 SDLC*, *3270 Token Ring*, *TN3270*, *5250 SDLC*, *5250 Token Ring*, and *TN5250*. Please note that all systems may or may not have these menu entries on them. These menus depend on the host connectivity options installed in the system. Figure 1-1 shows an example of the *Emulator* menu found under *3270 SDLC*.

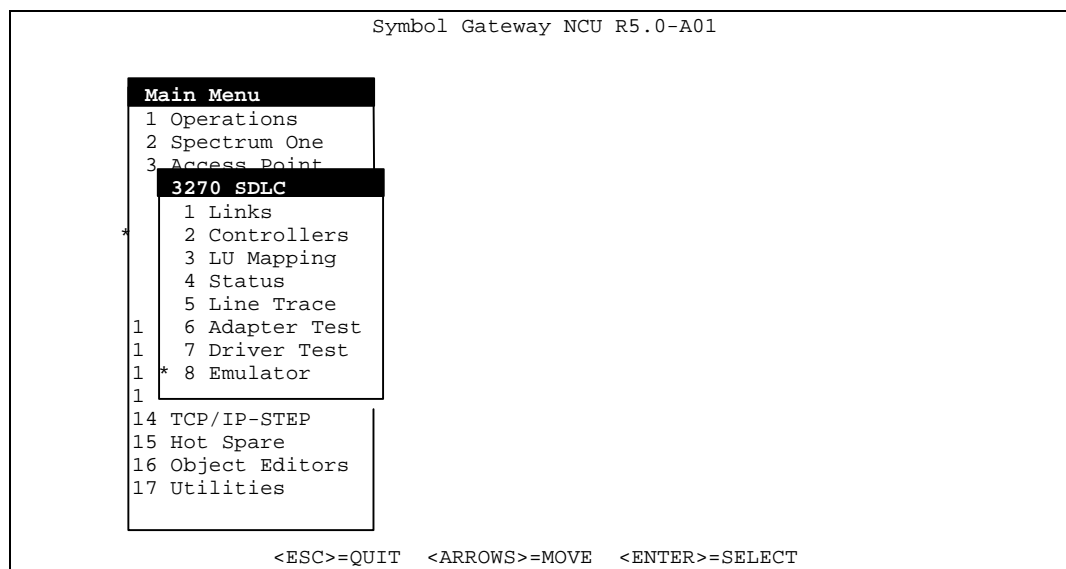


Figure 1-1. Sample Where to find the *Emulator* function

Gateway Menus Accessing the Formatter

To access the formatter tool that modifies the captured screens from the host application via the emulator tool, select the *Display/Formatting* function from the *Object Editors* menu. The formatter function is available under the main menu

entries of *Object Editors*. Figure 1-2 shows an example of the Display/Formatting menu entry found under the Object Editor function from the main menu.

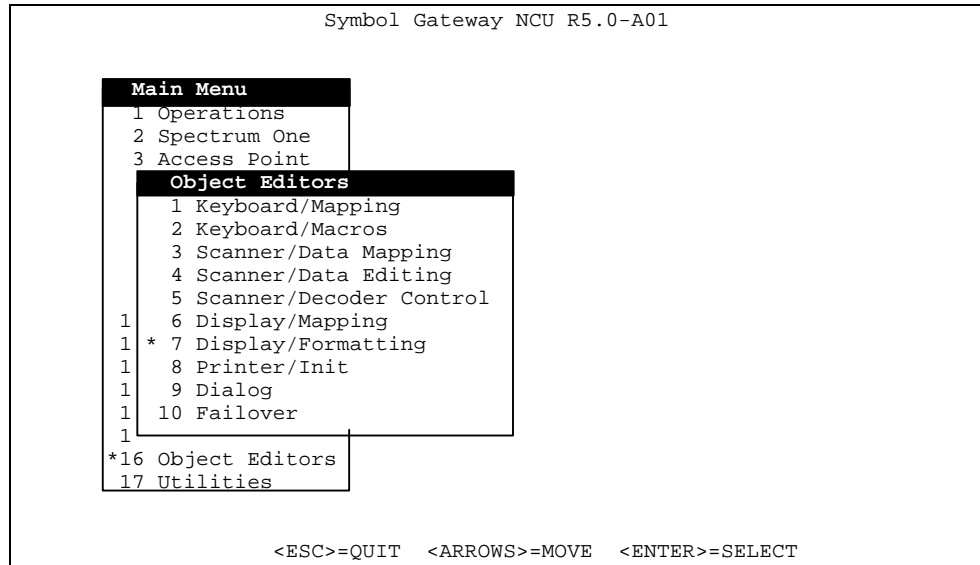


Figure 1-2. Sample Where to find the *Formatter* function

Interface

The *Screen Formatter* has a menu-driven interface which differs from the standard Gateway menus, but is just as easy to use. When the *Formatter* option is selected, an opening screen similar to that shown in Figure 1-3 appears. The formatter menu bar is displayed across the top.

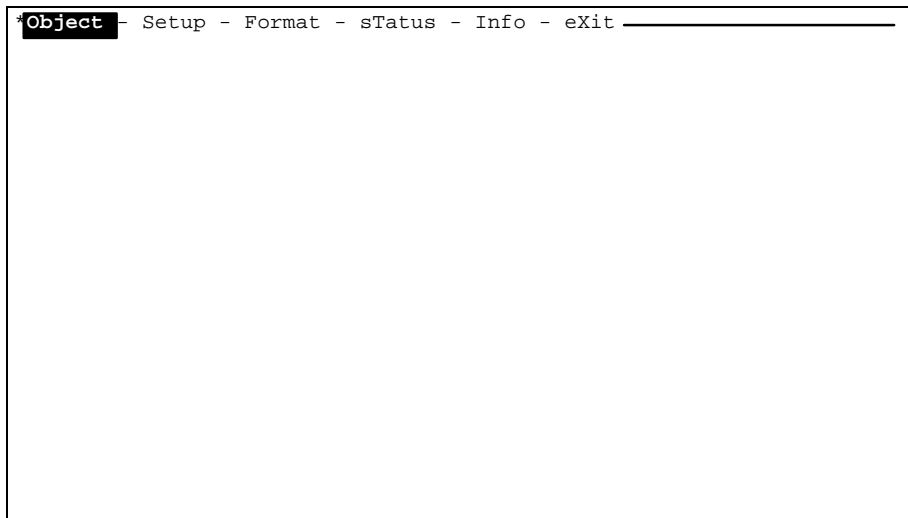


Figure 1-3 Formatter Opening Screen

Opening Screen

The *Screen Formatter Menu* bar appears across the top of the screen. The rest of the screen is empty. The following sections describe the interface types, menus, forms, information, and screen displays, that are in use with the *Screen Formatter*.

Menus

Menu selections are listed on the *Main Menu* bar. To select an option, use the left/right *<Arrow>* keys or the upper-case letter in each option to select it, then press *<Enter>*.

When selected, the *Object* option displays a drop-down menu. Use the up/down *<Arrow>* keys or upper-case letters to select an option from this menu.

The use of the menus and options on the *Main Menu* is summarized in *Chapter 2* and explained in subsequent sections of this document.

Forms

Forms collect information from the user. Fields in which you must select from various fixed choices, toggle between two or more selections, or enter other information such as the size of the screen, appear on *forms*. The keys for toggling,

or selecting, and moving to a new field are explained in the section, *Keys* later in this chapter.

Host and Terminal Screen Displays

Each host screen is displayed on your monitor as one item, whereas an RF terminal screen is presented page by page. Areas for both the host and RF terminal screen are defined by the number of rows and columns. This area is referred to as the presentation space (PS). An example of both the host PS and terminal PS is shown in Figure 1-4.

```

Welcome To The

      MM      MM      AAAAA      YY      YY
Term PS Os Op Of AA AA YY YY A
AAAAAAAAA YY N
AA AA YY D
AA AA YY

PPPPPPPP EEEEEEEEE HH HH
PP PP EE HH HH
PPPPPPPP EEEEEEE HHHHHHHHH
PP EE HH HH
PP EEEEEEEEE HH HH

Data Center
M&S Help Desk Numbers
Date: 02/24/94 (888)-555-1212 or (888)-555-1234 Device: T8CON11
Time: 09:14:17 System: CUS1

User Information
Userid..... _____
Password..... _____ Change Password ? -
Acct Num If Required Acct..... _____
ENTER USERID
BUFFER> <empty>

```

Figure 1-4 Host PS and Terminal PS

In this figure, the host PS is in the background, as it was displayed first. The terminal PS is layered on top, in the upper-left foreground, as the toggle key was pressed after the host PS was displayed. Note the empty buffer in the lower left corner.

Keys

Two sets of keys are available, *Program Keys* for moving within the menus, selecting options, entering information and returning to the Gateway software. The second set of keys format the terminal screens. These are the *Formatter Editor Keys* and only available after the *Format* option has been selected.

Key Function

- <↑> The Up Arrow moves the cursor up one line on a menu or to the previous field on a form.
- <↓> The Down Arrow moves the cursor down one line on a menu or to the next field on a form.
- <!> Return to the UNIX shell. UNIX commands for other tasks can then be executed. To return to the program, type the following at the \$ prompt:
exit<Enter>
- <Bksp> Use the Backspace key to place the cursor on the previous field on a form.
- Press the Delete key to exit from the program.
- <Enter> Selects the menu option on which the cursor is positioned. On forms, Enter accepts the value displayed in the active field.
- <Esc> Use the Escape key to quit the program from the *Main Menu*, proceed to a previous menu, or to leave a form. If changes were made to a form, a prompt to save them appears.
- <Tab> Use the Tab key to change an entry for a form field with a fixed set of choices by toggling through the selections.
- <LETTER> Use this key sequence to select an item from a menu by using the
<Enter> UPPERCASE LETTER followed by pressing the Enter key.

The following are the *Formatter Editor Keys*. Two keys are listed for each operation to take into account keyboards that may not have the necessary function keys (F1–F12). Using the correct case is very important. Pressing <h> or <Ctl><Y> while in a formatting session displays a help screen listing these keys as shown in figure 1-5. As a matter of preference, most users prefer the character equivalents of function keys to take into account the fact that all function keys may not be supported under all terminal types. For example, vt100 terminals only support F1 through F4.

Note: The key function commands are *case sensitive*. For example, the upper case <I> key displays information regarding the presentation space in the view. A lower case <i> moves the cursor up within the presentation space view.


```

Editor Help
COMMAND KEYS
F1/t .... toggle PS
F2/y .... yank
F3/p .... put
F4/f .... create IDENT field
F5/s .... set key definitions
F6/d .... delete field
F7/D .... delete page/screen
F8/x .... exit formatter
F9/o .... order pages/fields
F10/h ... help
R ..... replicate pages
I ..... information about PS
S ..... set SCAN key
M ..... modify IDENT string
G ..... modify IDENT globally
c ..... create host input field
u ..... untag host input field

CURSOR MOVEMENT KEYS
Arrows .... up/down/left/right
i/j/k/m ... up/down/left/right
TAB ..... next field

MARKING
space/backsp .. mark/unmark

PAGE & SCREEN CONTROL
Pgup/CTRL-U ... previous page
Pgdn/CTRL_D ... next page
CTRL-F ..... next screen
CTRL-B ..... previous screen
J ..... jump to screen
F ..... find match

BUFFER EDITOR
ENTER ..... begin/end

BUFFER> <empty>

```

Figure 1-5 Editor Help Display

Editor Key Function

- <F1> or <t>** The F1 or lower-case *t* toggles the PS from host to terminal and *vice versa*.
- <F2> or <y>** The F2 or *y* key yanks (copies) a marked field on the host screen and place its contents in the buffer.
- <F3> or <p>** F3 or *p* puts the buffer contents on the terminal page. Placement is determined by the position of the cursor on the page.
- <F4> or <F>** F4 or uppercase *F* sets the *ident* on the host screen. This *ident* is used to match the terminal screen with a host screen and therefore, *identify* the fields as belonging to that particular host screen. A specific group of characters (string) or input field is first highlighted on the host screen, then F4 or F is pressed.
- <F5> or <s>** Pressing F5 or *s* displays a form defining 3270 or 5250 terminal key functions. Key definition remapping is not supported for vt100, vt220, or hp700 terminal types
- <F6> or <d>** To delete a field or *ident* placed on a terminal page, press F6 or *d*. You are prompted through the deletion process which requires the field number.

- <F7> or <D>** These keys delete a page or all pages from the current RF terminal screen or the entire screen.
- <F8> or <x>** Select F8 or *x* to leave the current formatting session and return to the *Main Menu* bar.
- <F9> or <o>** Use F9 or *o* to change the order of fields on a page or pages of a screen.
- <F10> or <h>** The *h* or F10 keys displays editing help, which lists keys and functions.
 - <R>** Press the *R* key to replicate formatted terminal pages.
 - <I>** Pressing uppercase *I* displays information about the current terminal or host PS that is shown.
 - <S>** Use *S* to set the *SCAN* key.
 - <M>** Modify a single specific *ident* by pressing *M*.
 - <G>** Use the global *ident* modification key, *G*, to change identical *idents*.
- <↑> or <i>** The Up Arrow or *i* key moves the cursor up one row in the PS.
- <↓> or <j>** The Down Arrow or *j* key moves the cursor down one row in the PS.
- <> or <k>** Use the Left Arrow or *k* key to move the cursor left one column.
- <> or <m>** Use the Right Arrow or *m* key to move the cursor right one column.
 - <Tab>** Pressing Tab takes the cursor to the next field on the current PS.
- <Spacebar>** Use the Spacebar to mark (highlight) fields.
- <Backspace>** Use the Backspace key to unmark (remove the highlight) fields.
- <Ctrl>** Hold down the Control key, and then press the *b* key to display the previous screen.
- <Ctrl><f>** Hold down the Control key, and then press the *f* key to display the next screen.

<Ctrl><u> or PageUp or Control and *u* keys show the previous page.
<PgUp>

<Ctrl><d> or PageDown or Control and *d* keys show the next page.
<PgDn>

<Enter> Pressing Enter places the cursor in the editing buffer and activates buffer editing. To exit from the buffer, press Enter again.

Documentation

The *Screen Formatter* menus and options are summarized first. Instructions for creating a formatter object with the full screen *Emulator* and loading it in the *Screen Formatter* follows in chapter 3.

Defining and setting up the presentation spaces, and using the *Formatter* to create custom terminal screens, is the main focus of this manual. Examples from a *demo* object are given in *Chapters 4* and *5* as well as ways to use the package to eliminate repetitive work. Finally, linking the formatted object to the *Host List Handler* is last.

Conventions

This document uses the same typographical conventions as the *PowerNet IX Reference Manual*.

Product Information

The *Screen Formatter* package for PowerNet is designed to operate with RF terminals that include a 3270 keypad overlay. Please see the appropriate *Reference Manual* for more information.

2 Program Operation

Introduction

This chapter describes all menus and options available for the *Screen Formatter*. Details regarding the actual use and application of these options are in the following chapters. A system menu map, displaying the relationship of sub-menus and options to the *Main Menu*, is shown in Figure 2-1.

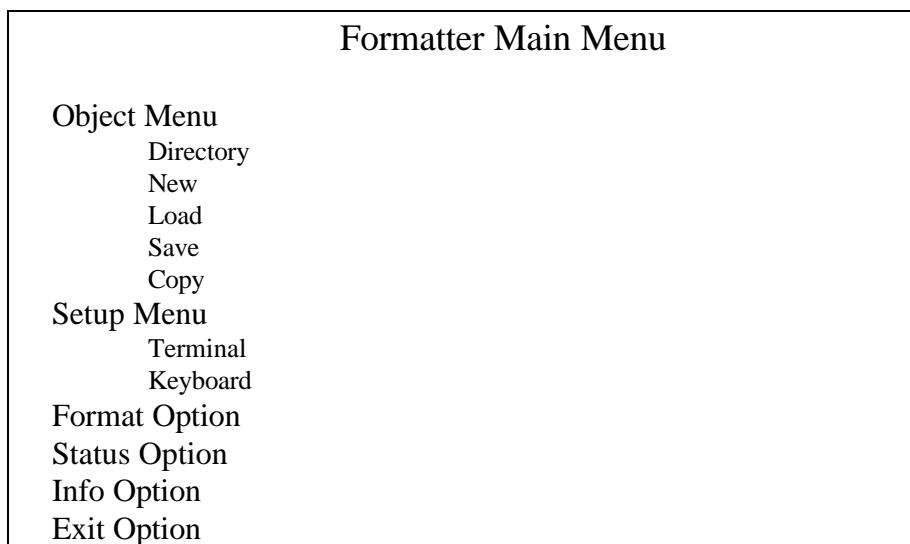


Figure 2-1 Formatter Menu Map

Menu and Option Summary - Formatter Main Screen

The opening main screen menu bar is displayed when starting the *formatter* utility as shown in Figure 1-3 of Chapter 1. The selections and options for each item in this menu are listed below.

Object Menu

This drop-down menu has selections that load objects for formatting, saves formatting work, and copies objects.

Directory This menu option displays all formatter objects present on the Gateway. It can be used to select and load the object to be formatted.

New The *New* option clears memory after working on a formatter object. Use this selection before starting another formatting session.

Load A formatter object can be loaded into memory with this option. It can be used as an alternate to the *Directory* option but selection is not from a list. The name of the formatter object must be supplied by the user.

Save Use *Save* to save completed formatting work.

Copy *Copy* makes a copy of the original screen formatter object. *Copy* is useful if you have more than one type of terminal with different size PSs. You can copy the object and customize screens for each type.

Setup Menu

The *Setup Menu* has options for entering the PS sizes, and defines terminal keys. Currently, the formatter supports formatting of 3270, 5250, VT100, VT220, and HP700 terminal emulation presentation space from the host.

Terminal Defines the terminal emulation presentation space management that the formatter tool examines. The host and terminal presentation space sizes are defined by the number of rows and columns.

Keyboard A *Keyboard* form allows the user to define functions for the various 3270 or 5250 keys. The keyboard function does not allow key re-definition for VT100, VT220, or HP700 terminals.

Format Option

Format is selected after the formatter object is loaded and the host and terminal Presentation Spaces (PS) have been defined. The workspace for formatting appears and all editing functions are then available.

Status Option

When *Status* is selected, it presents a *Status Display* about the formatting performed on the current object.

Info Option

Info displays information about the *Screen Formatter*, including the version number.

Exit Option

Select *Exit* to return to the Gateway software menus. *Exit* prompts the user to save work not previously saved during the formatting session.

3 Object Creation

Introduction

The full-screen *Emulator* is part of the connectivity package selected for your Gateway . It is usually found on the *Host Network Menu*. The *Emulator* option creates the formatter object, which contains the host application screens. This chapter uses the 3270 host as an example. For more details on the *3270 Emulator*, please see the *3270 Reference Manual*. For other emulators, please see the respective *Connectivity Reference Manual*.

Starting The Emulator

Select the desired emulator option from the associated wired connectivity menu. Full-screen 24 by 80 terminal emulation is provided for 3270 SDLC, TN3270, 5250 SDLC, TN5250, and VTerm (VT100, VT220, and HP700) connectivity. A sample emulator selection option from a wired connectivity menu is shown in Figure 3-1.

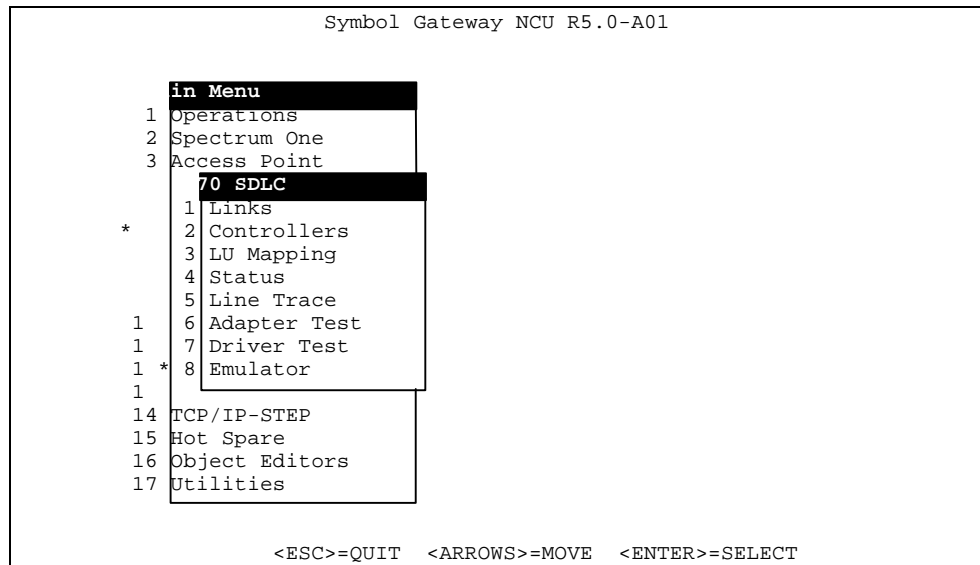


Figure 3-1. Sample Where to find the *Emulator* function

Note: The help screen for the *Emulator* can be displayed by pressing <Ctrl><Y> and can be invoked at any time. Help displays program keyboard commands.

Formatter Objects

Before starting a formatting session, the emulator tool is used to capture the incoming host presentation space (screens). The formatter object is created with the *Emulator*. This object is a database of files that contain information relating to the incoming host application screens and fields.

Creating Formatter Objects

The emulator tool is used to create a database of screens with which to use the formatter tool. To do this, create an object file for the incoming host presentation space capture. Follow the instructions below for the emulator are using.

Usage Object Name Field

A formatter object must be given a name when it is created. The name can consist of from one to eight alphanumeric characters.

VTerm VT100, VT220, HP700

To create a formatter object file for the VTerm emulator, start the desired emulator. Once the emulator is started, press <Ctl><Y> to display the VTerm emulator help window as shown in Figure 3-2. Press the <2> key followed by <Enter> and <Enter> again to select the *Object* option from the help menu to

specify a filename in which to store the captured screens. A pop-up window, as shown in Figure 3-3, allows entry of the object filename. Once the object is created, any screen that is captured using the *Snapshot* function is saved to the specified object.

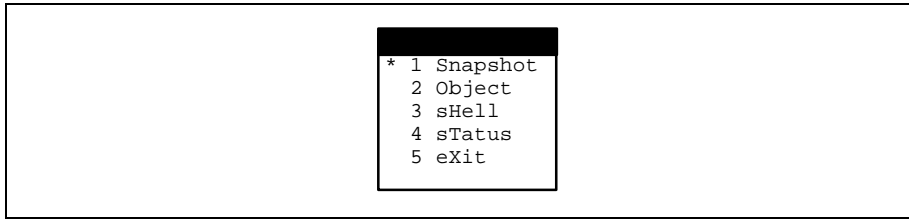


Figure 3-2 VTerm Emulator Help Window

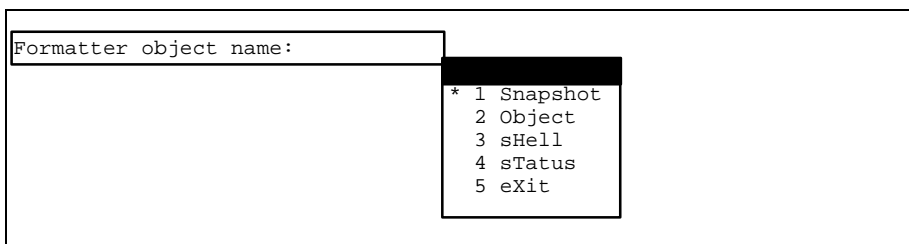


Figure 3-3 Object name prompt

3270 or 5250

To create a formatter object file for the 3270 or 5250 emulator, start the desired emulator in *diagnostic* mode. Next, select a controller and LU session to bind the emulator with by following the screen prompts. Once the emulator is started, press <Ctl><T> to display the pop-up window, as shown in Figure 3-4, as a window that allows entry of the object filename. Once the object is created, any screen that comes into the emulator is automatically captured and saved to the specified object.

```

Welcome To The

      MM      MM      AAAAA      YY      YY
      MMM     MMM     AA      AA      YY  YY      A
      MM  MM  MM     AAAAAAAAA      YY      N
      Formatter object name:      YY      D
      YY
      YY

      SSSSSSSS      PPPPPPPP      EEEEEEEEE      HH      HH
      SS           PP      PP      EE           HH      HH
      SSSSSSSS      PPPPPPPP      EEEEEEE      HHHHHHHHHH
      SS           PP           EE           HH      HH
      SSSSSSSS      PP           EEEEEEEEE      HH      HH

                                          Data Center
                                M&S Help Desk Numbers
Date: 10/14/96      (555)-234-1234 or (555)-555-2234      Device: T8CON11
Time: 14:06:17                                          System: CUS1

                                User Information
                                Userid..... _____
                                Password..... _____      Change Password ?  N
Acct Num If Required      Acct..... _____
ENTER USERID
Enter  F1=Help  F3=Exit

```

Figure 3-4 3270/5250 Object Name Window

Append to Formatter Objects

To add more screens to a formatter object created in a previous session, follow the above instructions, and enter the name of the existing object. The system prompts the following:

Append to existing object (y/n)?

Press <y> to append. If <n> is entered, the system prompts the following:

Overwrite the existing object (y/n)?

Press <y> to erase the existing object and <n> to stop the process.

Capturing Screens

To capture host screens once the object has been created, continue the session with the host application. You must navigate through the application displaying all the

screens that are to be formatted for the RF terminals. Appropriate responses are entered in the input fields. While exercising the host application, introduce errors of your own (e.g., alpha characters in numeric only fields, skipping required fields, etc.) to capture any special instances of message or error screens that may occur with the host application. Any screen that has not been identified and formatted is passed through to the terminal as a 'full screen' presentation space.

3270 or 5250

When using a 3270 or 5250 Emulator, each screen displayed from the host is collected automatically to the object file. Once all screens to be formatted are viewed (and captured to the object), press <Ctl><x> to exit the emulator. The object file is automatically saved when the emulator is terminated.

VTerm VT100, VT220, HP700

With VTerm Emulators, each host screen is collected by pressing <Ctl><y> to display the emulator help screen (see Figure 3-2). When this screen is shown, press <1> followed by <Enter> and <Enter> again, and the screen is saved to the formatter object previously created. This action of saving the VTerm presentation space is known as a *snapshot*. An example of a snapshot using the VTerm emulator is shown in Figure 3-5. Once the snapshot message is displayed, press <Enter> to remove the message and continue with the application. Once all screens to be formatted are captured, press <Ctl><y> and select the *exit* option by pressing <5><Enter> <Enter>.

Note Unlike the 3270 or 5250 emulator, each screen to be formatted using VTerm requires the operator to manually capture the presentation space using the *snapshot* function.

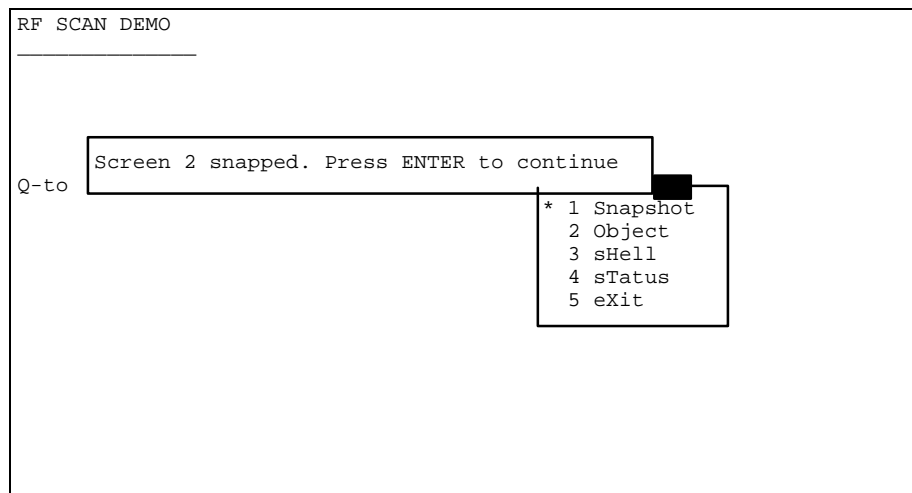


Figure 3-5 Sample Screen Snapshot message using the VTerm emulator

Session Termination

When all the screens to be formatted are captured or when you want to quit, select the appropriate *exit* function from the emulator. The formatter object is now available for processing by the *Formatter*. When the *Directory Menu* option is selected from the *Object Menu*, the newly created object appears on the list automatically.

4 Formatter Setup

Introduction

The *Screen Formatter* requires a formatter object that was created with the *Emulator* (see *Chapter 3*). Once the object is present on the Gateway NCU, it can be loaded into memory. Parameters for the host and RF terminal presentation spaces are set up next for the selected object. These operations are discussed in this chapter along with saving work, getting information, understanding the screen, page, and field numbering, and identifying terminal and host pages. The use of the *Formatter Editor* is detailed in the next chapter.

This chapter and the next use a 3270 host *demo* object, which is included with the software, for illustration of functions. You can use the *demo* object to become familiar with the various operations before formatting your own formatter object.

Formatter Startup

The *Display/Formatting* option is found in the *Object Editors* selection from the *Main Menu*. The opening screen that was shown in Figure 1-3 appears when the display formatter is selected.

The Object Menu

To work on a particular formatter object, select the *Object Menu* from the *Main Menu* bar and press <Enter>. The *Object Menu* shown in Figure 4-1 is displayed.

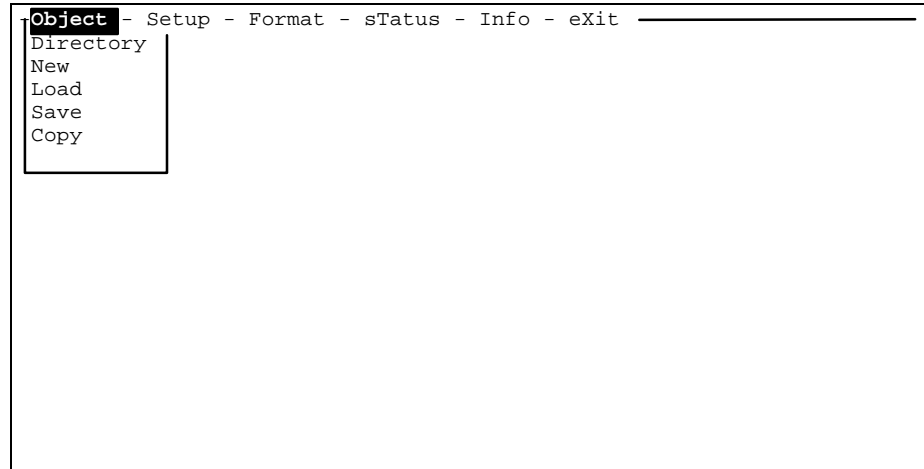


Figure 4-1 Object Menu

The object can be loaded into memory with two selections, which are the *Directory* and *Load* options. The *New* option clears memory for creation/loading of new objects, *Save* allows the user to save formatted sessions and *Copy* allows copying of previously captured host screens or formatted sessions.

Object Menu Directory

Select *Directory* to view a list of all the formatter objects available to the system (see Figure 4-2).

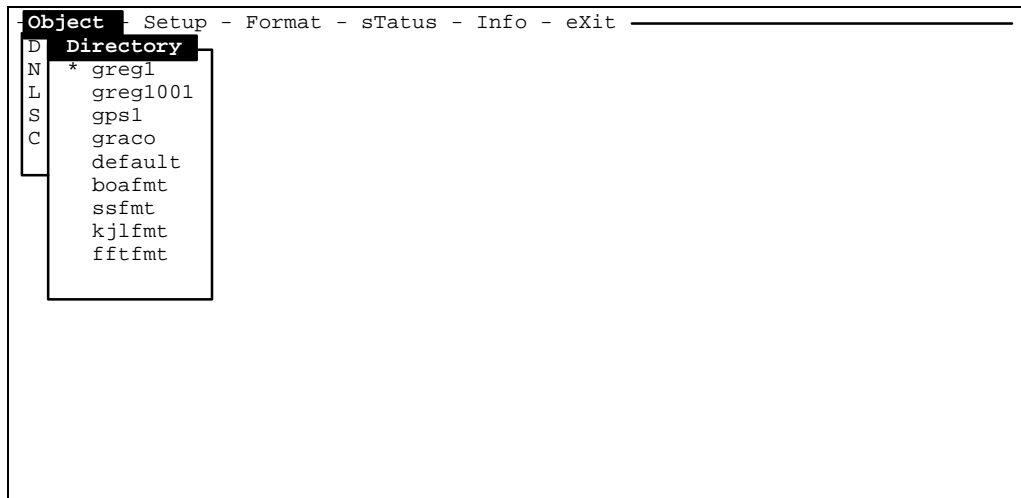


Figure 4-2 Object List

Use the up/down <Arrow> keys to select an object from the list and press <Enter>. An *Object Selection Form* (see Figure 4-3) appears with the object that was selected for loading in parentheses.

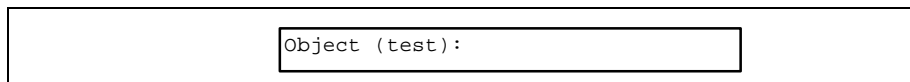


Figure 4-3 Object Selection Prompt

If this is the correct object to load, press <Enter>. If not, type in the name of the object to load at the colon, then press <Enter>. The object is then loaded into system memory.

Object Menu New

The *New* option clears system memory during a formatter session and create a fresh formatter object into which host screens can be captured.

Object Menu Load

The *Load* option can be used if the name of the object is known and if you do not need to view a list. Select *Load* and the *Object Selection Form*, shown in Figure 4-3, is displayed. Type in the name of the object to load, which overrides the default that appears in parentheses. Press <Enter> to load the object.

Object Menu Save

The *Save* option saves all formatter session work. Use *Save* frequently during a format session. If the formatter is exited improperly, all work may be lost. Get in the habit of using the *Save* option prior to exiting the formatter even though it prompts you to save before exiting. Remember, one wrong keystroke during exit can lose all of your work.

To save an object in its current state, select *Save* from the *Object Menu* (see Figure 4-1) and the confirmation display shown in Figure 4-4 appears.

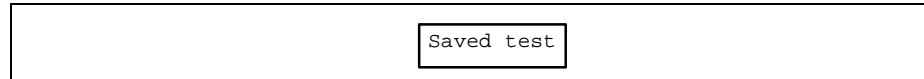


Figure 4-4 Save Object Confirmation

Object Menu Copy

The *Copy* function creates copies of previously formatted sessions or new captured host screens. If you want to save an unedited copy of the formatter object, make the copy before any editing takes place. Select *Copy* from the *Object Menu*. The *Copy Form* shown in Figure 4-5 is displayed. Enter the name of the object to copy, and press <Enter>.

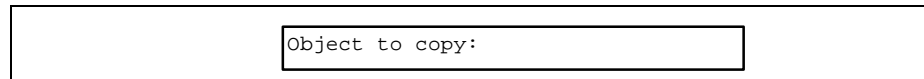


Figure 4-5 Copy Object Selection Form

The program prompts for a new name of the copied object (see Figure 4-6). Type in a new name, and press <Enter>.

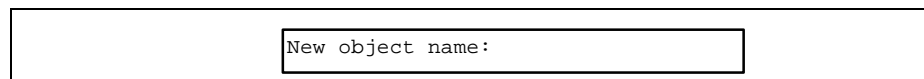


Figure 4-6 Copied Object Name form

A confirmation message appears to confirm the operation has completed. Press <Enter> to remove the message from the screen.

The Setup Menu

The *Formatter Setup* follows object loading. It is important that this step be done immediately after loading a new formatter object as all emulation and terminal specific characteristics are set here for the remainder of the formatting session.

First, the screen presentation space parameters for the both the host and terminal are entered. Keys are then defined for RF terminals.

When *Setup* is selected from the *Main Menu* bar, the *Setup Menu* shown in Figure 4-7 is displayed.

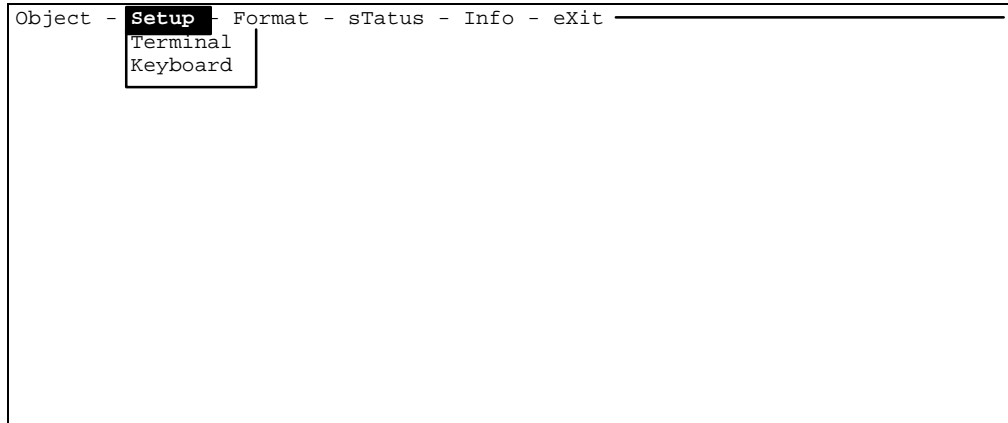


Figure 4-7 Setup Menu

Setup Menu Terminal

Set up the emulation, host, and terminal PSs by selecting *Terminal* from the *Setup Menu*. The *Terminal Setup Form*, shown in Figure 4-8, is displayed.

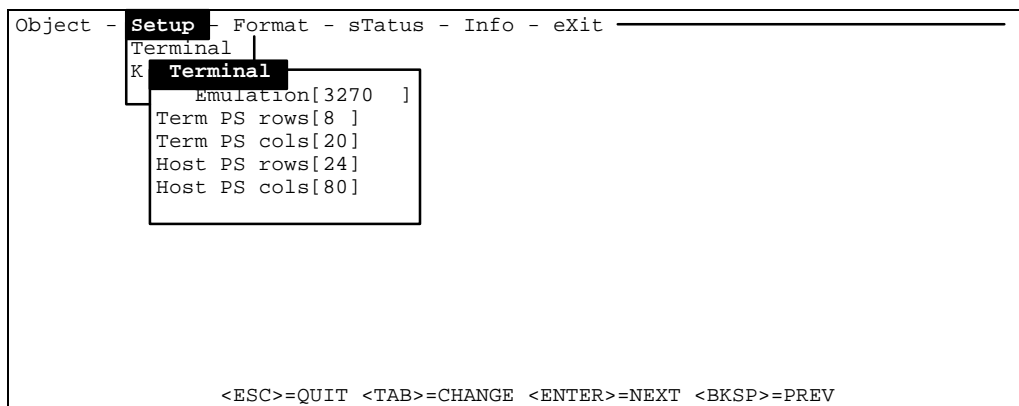


Figure 4-8 Terminal Setup Form

At the *Emulation* field, select the emulator that captured the incoming host presentation space. This *Emulation* field is a toggle field. Allowable values for this field are *VT100*, *VT220*, *HP700*, *3270*, or *5250*. Press <Enter> or use the down arrow key to go to the next field.

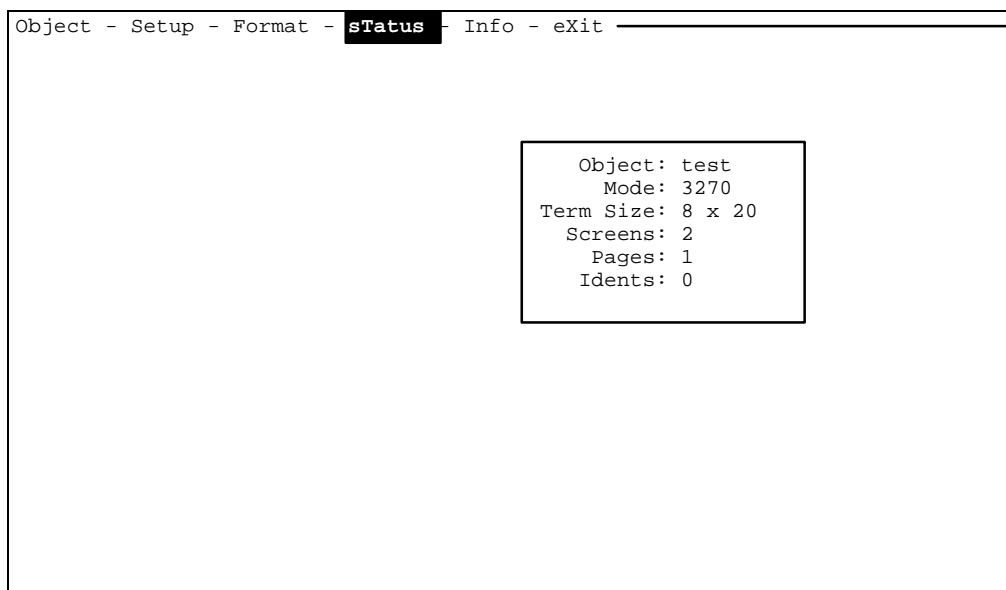
This concludes the setup portion of this chapter. Following are other menu options that are necessary for using and understanding *Formatter* conventions.

The Format Menu Option

The formatter menu option allows re-mapping of the incoming host presentation space to new screen layouts for the terminals. After objects are loaded and setup using the appropriate menu selections, the *format* option is used for screen modification. Details of the format menu option and its use are presented in the next chapter.

The Status Menu Option

The *Status Option* checks the progress of setting up and formatting an object. The display shown in Figure 4-10 for the object, *test*, indicates that the terminal rows and columns were set to 8 by 20. The *Mode*, 3270, shows that the object was created for a 3270 host.



```
Object - Setup - Format - sStatus - Info - eXit
Object: test
Mode: 3270
Term Size: 8 x 20
Screens: 2
Pages: 1
Idents: 0
```

Figure 4-10 Object Status Display

Program Information

The *Main Menu* bar selection, *Info*, displays program information which includes the release version (see Figure 4-15). This is important for technical support questions and is easily obtained.

```
Object - Setup - Format - sTatus - Info - eXit _____  
  
                               Screen Formatter  
                               Release 5.1.0  
                               Copyright (C) 1993-98 Connect Inc.  
                               All Rights Reserved
```

Figure 4-15 Program Information

The Exit Option

The exit option terminates the formatter session. If work has been done but not saved, the formatter prompts the following:

```
Exit without saving changes [y/n]?
```

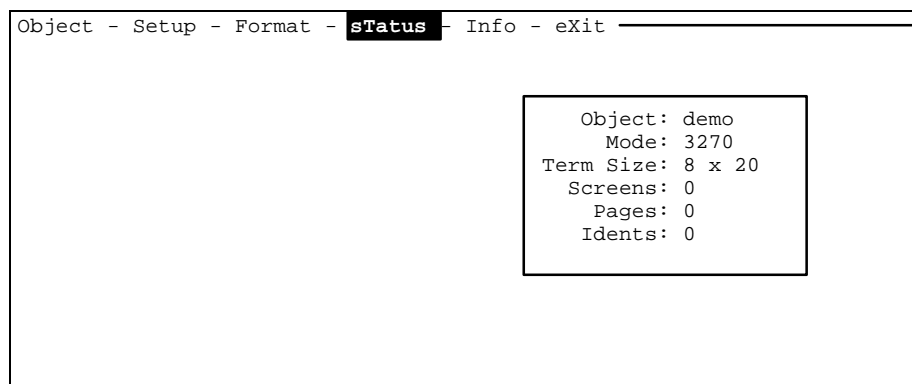
5 Formatter Use

Introduction

This section contains information on selecting fields from host screens and placing them on the terminal screen pages as well as adding new text fields to terminal screens. In addition, it gives tips, tricks, and hints. The object, *demo*, is used for illustration purposes.

Preparation

Prior to selecting *Format*, the object should be copied if necessary, loaded, set up, and saved as explained in *Chapter 4*. Once saved, the *Status Form* should be displayed. There should be 0 screens, 0 pages, and 0 idents. The mode should be correct and the terminal presentation space (PS) should be as set (see Figure 5-1).



```
Object - Setup - Format - sTatus - Info - eXit
Object: demo
Mode: 3270
Term Size: 8 x 20
Screens: 0
Pages: 0
Idents: 0
```

Figure 5-1 Status When Starting

Format

Select *Format* from the *Main Menu*. The blank terminal screen 0, page 0 appears with an empty buffer as shown in Figure 5-2. This is the terminal PS.

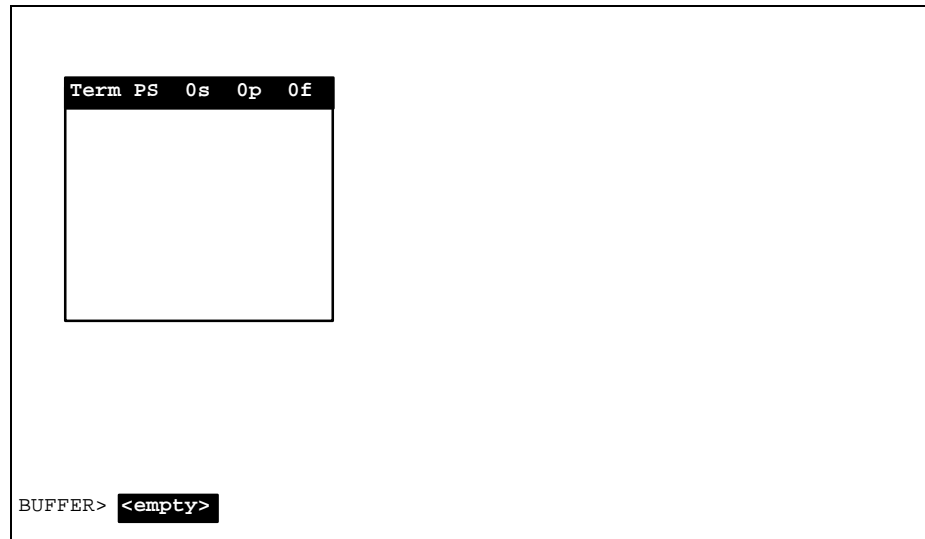


Figure 5-2 Format Opening Display - Term PS View

The terminal presentation space shown is based on the size of the terminal as set at the setup option of the formatter. The examples shown in this chapter are based on a 20 character by 8 line terminal display. The status bar at the top of the terminal PS view shows the terminal screen group number (0s), the page number of the associated terminal screen group (0p), and the current field (0f). Further details of the terminal presentation space and fields can be viewed by pressing <I> (upper case I). This function is discussed in the Terminal Fields section.

Now, examine the host screens to gauge the amount of work and the number of screens and fields that should be formatted. Press the <t> key to toggle back to the host presentation space and use the <CTL><F> or <CTL> keys to page forward and backward through the captured host screens.

Host Screens

To display the host PS, use the toggle key <F1> or <t>. Toggling between presentation spaces is an important function and is in constant use when formatting. The first host screen appears, as is shown in Figure 5-3.

```

Welcome To The

      MM      MM      AAAAA      YY      YY
      MMM     MMM     AA      AA      YY  YY      A
      MM  MM  MM     AAAAAAAAA      YY      N
      MM      MM     AA      AA      YY      D
      MM      MM     AA      AA      YY

      SSSSSSSS      PPPPPPPP      EEEEEEEEEEE      HH      HH
      SS           PP      PP      EE           HH      HH
      SSSSSSSS      PPPPPPPP      EEEEEEE      HHHHHHHHHH
      SS           PP           EE           HH      HH
      SSSSSSSS      PP           EEEEEEEEEEE      HH      HH

Data Center
                        M&S Help Desk Numbers
Date: 10/16/96          (555)-555-1212 or (333)-555-1212      Device:
T8CON11
Time: 13:50:44                                     System:
CUS1

                        User Information
                        Userid..... _____
                        Password..... _____ Change Password ? ___
Acct Num If Required  Acct..... _____
ENTER USERID
Enter F1=Help F3=Exit

```

Figure 5-3 Demo Host PS

To examine the next host screen use <Ctrl><f>. Press <Ctrl> to return to the previous screen. Note that when paging between host screens, a status window pops up showing whether a matching terminal screen is found (identified). When viewing *demo*, the captured screens appear to be identical, differing only in the lower left corner. This captures the fact that since most screens appear identical, minor differences can be detected and mapped to different terminal screens. The figure shown in figure 5-4 shows the status message seen when paging between host screens.

```

Welcome To The

      MM      MM      AAAAA      YY      YY
      MMM     MMM     AA      AA      YY      YY      A
      MM  MM  MM     AAAAAAAAA      YY      N
      MM      MM     AA      AA      YY      D
      MM      MM     AA      AA      YY

      SSSSSSSS      HH
      SS           No previous screen (this is screen 0)      HH
      SSSSSSSS      HHHHHHHH
      SS           PP           EE           HH      HH
      SSSSSSSS      PP           EEEEEEEEEEE      HH      HH

Data Center
Date: 10/24/96      M&S Help Desk Numbers
T8CON11            (630)-719-0457 or (630)-719-0379      Device:
Time: 10:00:46      System:
CUS1

      User Information
      Userid..... _____
      Password..... _____      Change Password ?
      Acct..... _____

Acct Num If Required      ENTER USERID
Enter F1=Help F3=Exit

```

Figure 5-4 Host PS view showing status message

Host Fields

To obtain information about the host PS that is displayed, press <I> (*upper case I*). The information pertaining to the PS shown in Figure 5-4, is shown in Figure 5-5.

NOTE: In order for host screens to be mapped to terminal screens, there must be at least one input field on the host screen mapped to the terminal screen. No host screen can be identified unless input fields have been mapped from the host screen to the terminal screen. For those screens coming from the host (such as information only screens), the formatter has a provision to create a “fake” input field on the host presentation space that allows these types of screens to be formatted. The lower case <c> key allows you to create these fields in the host presentation view.

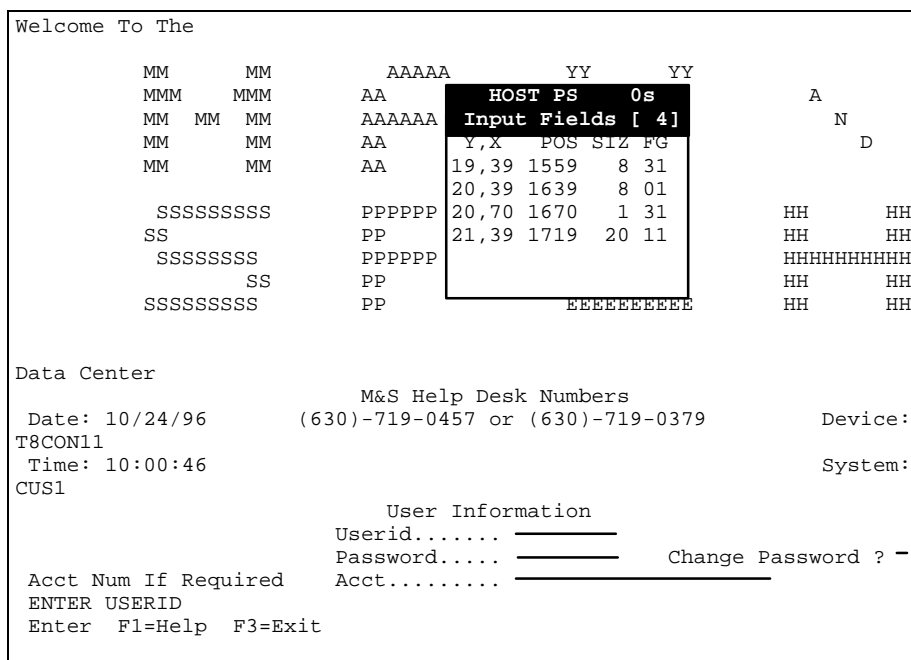


Figure 5-5 Host PS Input Fields Information Display

Each host input field on the current screen appears on the *Input and Data Fields Form*. The form defines host fields with the following parameters.

- Y,X** The row (Y) and column (X) position of the first character in the field.
- POS** The screen position of the first character in the host field is listed using screen numbering that starts with 0 in the upper left-hand corner and ends with 1920 in the lower right-hand corner.
- SIZ** The size of the field is shown as the number of characters.
- FG** The *Flag* field contains the field attribute byte in hexadecimal. All attributes of the field on the host screen are preserved when they are copied to the terminal screen. An example is the password field, which in *demo* is a no echo input field. The no echo attribute is preserved, as discussed in following section.

Terminal Fields

When a field is marked (using the space bar), put into the buffer (yanked using the <y> key), and placed on the terminal page (by toggling the terminal presentation space <t> and using the put <p> key), it is now mapped to the terminal. These

fields from the host are defined as an input field, a no echo field, or a host (display) field.

An *input* field is a standard entry field. A *no echo* field (shown as -echo) defines the host flag (FG) for no echo that was an attribute of the input field. A *host* field is a host screen text field that was placed on the terminal page.

In addition, a terminal page can have a *text* field which is user-created. You press <Enter> to open the buffer, then type text into it. Press <Enter> to close the buffer. The field can then be placed on the page in the same manner in which host fields are (see *Adding Text Fields* on later in this chapter). Information about terminal fields (pressing the <I> key when at the terminal presentation space view) is similar to that for the host. An of the presentation space information for a formatted screen as an example is shown in Figure 5-6.

```

Welcome To The

```

TERM PS Os Op															
Terminal Fields [6]						Screen Maps [3]					Idents [1]				
#	Y,X	POS	SIZ	FG	TYPE	#	Y,X	POS	SIZ	FG	#	Y,X	POS	SIZ	TYPE
0	3,5	65	8	31	input	0	19,39	1559	8	31	0	22,1	1761	12	strng
1	6,5	125	8	01	-echo	1	20,39	1639	8	0					
2	0,3	3	14	12	text										
3	5,0	100	20	12	tex										
4	2,0	40	20	12	text										
5	7,2	142	16	14	host	2	23,8	1848	16	1					

```

Data Center
M&S Help Desk Numbers
Date: 10/24/96 (630)-719-0457 or (630)-719-0379 Device: T8CON11
Time: 10:00:46 System: CUS1

User Information
Userid..... _____
Password..... _____ Change Password ? -
Acct Num If Required Acct..... _____
ENTER USERID
BUFFER> <empty>

```

Figure 5-6 Terminal PS Field Information

- #** All fields are assigned a number (zero-relative) on each screen.
- Y,X** This is the row (Y) and column (X) position of the first character in the field.
- POS** The screen position of the first character in the host field is listed using screen numbering that starts with 0 in the upper left-hand corner and ends with 1920 in the lower right-hand corner.
- SIZ** The size of the field is shown as the number of characters.

FG The *flag* field contains the field attribute byte in hexadecimal. All attributes of the field on the host screen are preserved when they are copied to the terminal screen. An example is the password field, which in *demo* is a no echo input field. The no echo attribute is preserved, as discussed in following section.

TYPE The *type* of field is limited to input fields for automatic inclusion in this form. If a host text field is then added to a terminal page, it is entered on this form as a data field. These data fields, in 3270 systems, are protected fields.

Idents - The Key!

Idents uniquely identify a host screen and matches the a formatted terminal screen (and all its pages) to it. These ident fields are the key to match an incoming host screen to a terminal screen. As host PS info is coming into the Gateway, the formatter examines this data. When the formatter sees data that matches an *ident* field within the formatter database, the formatter displays the associated terminal screen at the terminal.

When selecting the area of the host screen to use as an *ident* field, be sure that the field is not repeated on another host screen. The *ident* can be either an input field or display text. The whole display or field may be used or only part of it. A portion of the host screen is marked (highlighted) with the <Spacebar> and then stored as an *ident* with the <f> key.

The right side of Figure 5-6 includes a list of Host Ident Fields, with similar parameters to those defined for the *Host Input and Data Fields Form*. The *Type* parameter refers to the contents of the field, such as *string* or *input*.

Since every host screen that is to be formatted has a matching terminal screen, and each of these host screens must have an ident. In certain sets of host screens, multiple idents may be necessary to distinguish similar host screens.

The following figures and text show an ident being defined for a host screen. The string, ENTER USERID was selected for an ident. The cursor was placed on the first character in the string using the <Arrow> keys and it was highlighted with the <Spacebar> as shown in Figure 5-7

```

Welcome To The

      MM      MM      AAAAA      YY      YY
      MMM     MMM     AA      AA      YY      YY      A
      MM  MM  MM     AAAAAAAAA      YY      N
      MM      MM     AA      AA      YY      D
      MM      MM     AA      AA      YY

      SSSSSSSS      PPPPPPPP      EEEEEEEEE      HH      HH
      SS           PP      PP      EE           HH      HH
      SSSSSSSS      PPPPPPPP      EEEEEEE      HHHHHHHHHH
              SS      PP           EE           HH      HH
      SSSSSSSS      PP           EEEEEEEEE      HH      HH

                                          Data Center
                                          M&S Help Desk Numbers
Date: 10/16/96      (555)-555-1212 or (333)-555-1212      Device: T8CON11
Time: 13:50:44                                          System: CUS1

      User Information
      Userid..... _____
      Password..... _____      Change Password ?
Acct Num If Required      Acct..... _____

ENTER USERID
Enter F1=Help F3=Exit

```

Figure 5-7 Highlight String For Ident

Next, the <F4> (or <f>) key was pressed, and the following confirmation <R> appeared on the screen (see Figure 5-8).

```

Welcome To The

      MM      MM      AAAAA      YY      YY
      MMM     MMM     AA      AA      YY      YY      A
      MM  MM  MM     AAAAAAAAA      YY      N
      MM      MM     AA      AA      YY      D
      MM      MM     AA      AA      YY

      SSSSSSSS      PPPPPPPP      EEEEEEEEE      HH      HH
      SS      String match field defined for identification      HH
      SSSSSSSS      PPPPPPPP      EEEEEEE      HHHHHHHHHH
      SS      PP      EE      HH      HH
      SSSSSSSS      PP      EEEEEEEEE      HH      HH

                                  Data Center
                                  M&S Help Desk Numbers
Date: 10/16/96      (555)-555-1212 or (333)-555-1212      Device: T8CON11
Time: 13:50:44                                  System: CUS1

                                  User Information
                                  Userid..... _____
                                  Password..... _____      Change Password ?
Acct Num If Required      Acct..... _____
ENTER USERID
Enter F1=Help F3=Exit

```

Figure 5-8 Ident Confirmation

Once a host screen and terminal screen are tied together with a unique ident field, placing fields from the host screen onto the terminal page begins. Keep in mind, key functions can be recalled at any time by pressing <CTL><Y> to access the key help screen.

Yanking And Putting Fields

When the host screen is displayed, select a field to place on the terminal page by positioning the cursor to the first character of the field to be selected, highlighting it using the <space> key, as shown in Figure 5-9.

```
Welcome To The

      MM      MM      AAAAA      YY      YY
      MMM     MMM     AA      AA      YY  YY      A
      MM  MM  MM     AAAAAAAAA      YY      N
      MM      MM     AA      AA      YY      D
      MM      MM     AA      AA      YY

      SSSSSSSS      PPPPPPPP      EEEEEEEEE      HH      HH
      SS           PP      PP      EE           HH      HH
      SSSSSSSS      PPPPPPPP      EEEEEEE      HHHHHHHHHH
      SS           PP           EE           HH      HH
      SSSSSSSS      PP           EEEEEEEEE      HH      HH

                                           Data Center
                                           M&S Help Desk Numbers
Date: 10/16/96      (555)-555-1212 or (333)-555-1212      Device: T8CON11
Time: 13:50:44                                           System: CUS1

                                           User Information
Userid..... ██████████
Password..... ██████████
Acct..... ██████████      Change Password ?
Acct Num If Required
ENTER USERID
Enter F1=Help F3=Exit
```

Figure 5-9 Highlighted Field To Yank

Next press <y>. A copy of the highlighted area appears in the buffer as is shown in 5-10.

```

Welcome To The

      MM      MM      AAAAA      YY      YY
      MMM     MMM     AA      AA      YY      YY      A
      MM  MM  MM     AAAAAAAAA      YY      N
      MM      MM     AA      AA      YY      D
      MM      MM     AA      AA      YY

      SSSSSSSS      PPPPPPPP      EEEEEEEEE      HH      HH
      SS           PP      PP      EE           HH      HH
      SSSSSSSS      PPPPPPPP      EEEEEEE      HHHHHHHHHH
              SS      PP           EE           HH      HH
      SSSSSSSS      PP           EEEEEEEEE      HH      HH

                                          Data Center
                                M&S Help Desk Numbers
Date: 10/16/96      (555)-555-1212 or (333)-555-1212 Device: T8CON11
Time: 13:50:44                                          System: CUS1

                                User Information
                                Userid.....:_____
                                Password....:_____ Change Password ?—
Acct Num If Required Acct.....:_____
ENTER USERID
BUFFER> ██████████

```

Figure 5-10 Field In Buffer

Press <t> to toggle to the terminal screen 0, page 0 which is blank. Be sure that you start with the first terminal screen and page (in the terminal PS status bar - s0, p0). If a mistake is made, pages and screens can be re-ordered and/or deleted. Once the terminal PS is displayed, place the cursor, using the <Arrow> keys, on the area of the terminal screen page where the field is to be placed (see Figure 5-11).

```
Welcome To The
      MM      MM      AAAAA      YY      YY
Term PS 0s 0p 0f AA AA      YY YY      A
AAAAAAAAA      YY      N
AA AA      YY      D
AA AA      YY
PPPPPPPP      EEEEEEEEE      HH HH
PP PP      EE      HH HH
PPPPPPPP      EEEEEEE      HHHHHHHHH
PP      EE      HH HH
PP      EEEEEEEEE      HH HH
Data Center
M&S Help Desk Numbers
Date: 10/16/96      (555)-555-1212 or (333)-555-1212      Device: T8CON11
Time: 13:50:44      System: CUS1
User Information
Userid..... _____
Password..... _____      Change Password ? -
Acct Num If Required      Acct..... _____
ENTER USERID
BUFFER> _____
```

Figure 5-11 Field Placement

Next, use the put key, <p>, to place the contents of the buffer onto the page. The result of this operation is shown in Figure 5-12.

```

Welcome To The
      MM      MM      AAAAA      YY      YY
Term PS 0s 0p 0f AA  AA      YY  YY      A
AAAAAAAAA      YY      N
AA  AA      YY      D
AA  AA      YY

PPPPPPPP      EEEEEEEEE      HH  HH
PP  PP      EE      HH  HH
PPPPPPPP      EEEEEEE      HHHHHHHHH
PP  PP      EE      HH  HH
PP  PP      EEEEEEEEE      HH  HH
Data Center

M&S Help Desk Numbers
Date: 10/16/96 (555)-555-1212 or (333)-555-121 Device: T8CON11
Time: 13:50:44 System: CUS1

User Information
Userid..... _____
Password..... _____ Change Password ? _____
Acct..... _____

Acct Num If Required
ENTER USERID
BUFFER> <empty>
    
```

Figure 5-12 Terminal Screen With Field

Notice that the buffer is now empty. The input field, _____, next to the Userid field on the host screen was placed on the terminal page to the right of the Userid field by highlighting <space>, yanking <y>, toggling <t>, and putting <p>.

Keep in mind, that display (text) information can be placed on terminal screens from the host screens using the same process. We could yank the 'Userid' prompt from the host PS and place it on the terminal screen. Instead, say for example we wanted to make a prompt for the terminal's user that is a bit more "user-friendly", but there were no appropriate host fields. Therefore, a user-defined text field can be added.

Adding Text Fields

To add a text field, press <Enter> to activate buffer editing. The cursor appears after the 'buffer' prompt at the lower left corner of the screen. Type in the text for the field to be added, and when finished, press <Enter>. An example is shown in Figure 5-14.

```

Welcome To The

      MM      MM      AAAAA      YY      YY
Term PS 0s 0p 0f AA AA      YY YY      A
AAAAAAAAA      YY      N
AA AA      YY      D
AA AA      YY

PPPPPPPP      EEEEEEEEE      HH      HH
PP PP      EE      HH      HH
PPPPPPPP      EEEEEEE      HHHHHHHHH
PP      EE      HH      HH
PP      EEEEEEEEE      HH      HH
                                           Data Center

M&S Help Desk Numbers
Date: 10/16/96      (555)-555-1212 or (333)-555-1212      Device: T8CON11
Time: 13:50:44                                           System: CUS1

User Information
Userid..... _____
Password..... _____      Change Password ?
Acct Num If Required      Acct..... _____

ENTER USERID
BUFFER> Please enter user ID
  
```

Figure 5-14 Buffer With Entered Text

Then the cursor is moved on the terminal screen to the position where the field is to be placed. Then <p> is pressed to put the field on the screen as is shown in Figure 5-15.

```

Welcome To The
      MM      MM      AAAAA      YY      YY
Term PS 0s 0p 0f AA AA      YY YY      A
AAAAAAAAA      YY      N
AA AA      YY      D
AA AA      YY
      P P P P P P P P      E E E E E E E E      H H      H H
PP PP      EE      H H      H H
P P P P P P P P      E E E E E E      H H H H H H H H
PP PP      EE      H H      H H
PP PP      E E E E E E E E      H H      H H
Data Center
      M&S Help Desk Numbers
Date: 10/16/96      (555)-555-1212 or (333)-555-1212      Device: T8CON11
Time: 13:50:44      System: CUS1
      User Information
      Userid..... _____
      Password..... _____      Change Password ? _____
Acct Num If Required      Acct..... _____
ENTER USERID
BUFFER> <empty>
    
```

Figure 5-15 Terminal Screen With Text Field

Note that the buffer is empty once the field is put on the page.

In the figure 5-16, 2 input fields were taken from the host screen and placed on the terminal screen. Other text fields were manually created using the buffer editor and placed on the screen as prompts for the input fields. Finally, the function key prompt was taken from the host screen and placed at the lower portion of the terminal screen.

```

Welcome To The

      MM      MM      AAAAA      YY      YY
Term PS 0s 0p 0f AA AA      YY YY      A
Opening Screen AAAAAAAAAA      YY      N
Please enter user ID AA AA      YY      D
      _____
Enter your password.
      _____
      F1=Help F3=Exit

      P P P P P P P P      E E E E E E E E      H H      H H
      P P      P P      E E      H H      H H
      P P P P P P P P      E E E E E E      H H H H H H H H
      P P      P P      E E      H H      H H
      P P      P P      E E E E E E E E      H H      H H
Data Center

      M&S Help Desk Numbers
Date: 10/16/96      (555)-555-1212 or (333)-555-1212 Device: T8CON11
Time: 13:50:44      System:
CUS1

      User Information
      Userid..... _____
      Password..... _____ Change Password ?
      Acct..... _____
Acct Num If Required
ENTER USERID
BUFFER> <empty>

```

Figure 5-16 A formatted terminal screen.

Creating New Pages

Terminal screen 'pages' are created in those cases where needed fields from a host screen cannot be effectively mapped to a single terminal screen. For example, if a host application screen has sixteen - ten character input fields, these fields can be placed on 2 or 3 pages within the terminal screen definition. The formatter allows you to create multiple 'pages' of a single terminal/host screen relationship to account for these cases. To add pages to the terminal screen, press <Ctrl><d>. A new, blank terminal page for the same screen appears. It has the same ident as the fields that are placed on this page from the same host screen. Figure 5-17 illustrates the relationship between host screens and terminal screen pages. When using paged terminal screens, the <pgup> and <pgdn> keys as defined in the terminal formatter setup are used at the terminal level to switch between these pages.

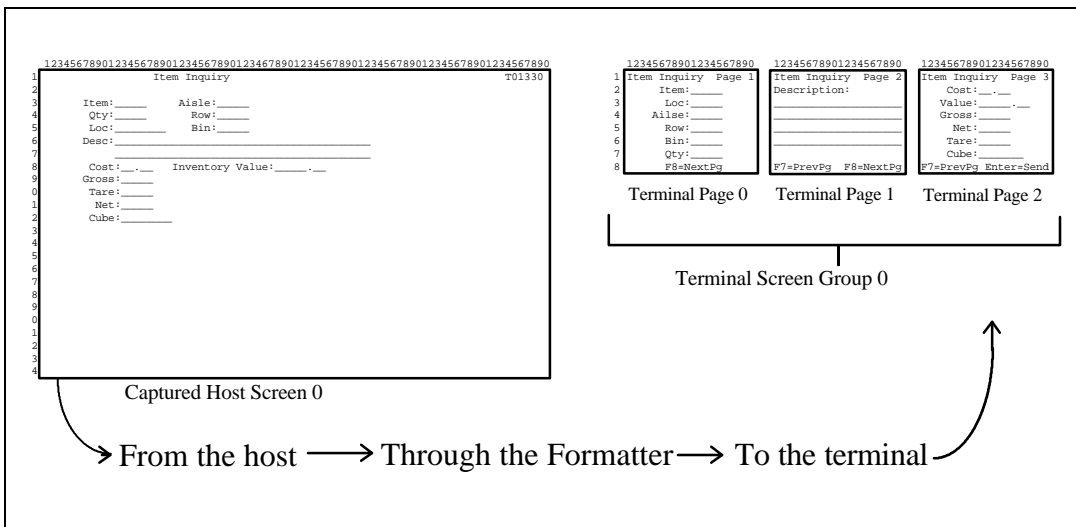


Figure 5-17 Host Screen to Terminal Screen Paging relationship

When creating pages, previous pages can be examined within a screen group by pressing <Ctrl><u>.

Formatting More Host Screens

Once one host screen is finished, a subsequent host screen can be selected and an ident created for that screen. To advance to the next screen, toggle to the host PS and press <Ctrl><F>. It is also important to toggle back to the terminal presentation space and also press <CTL><F> to advance to a fresh terminal screen. You should also notice that the status bar at the top of the terminal presentation space indicates a new screen.

When host screens are paged through using the <CTL><F> and <CTL> keys, the formatter checks the screen about to be shown to see if it has already been set to match (through the use of the ident field) a terminal screen. The message shown in Figure 5-16 indicates that the host screen to about to be displayed has not been formatted. Therefore, there is no matching terminal screen/page.

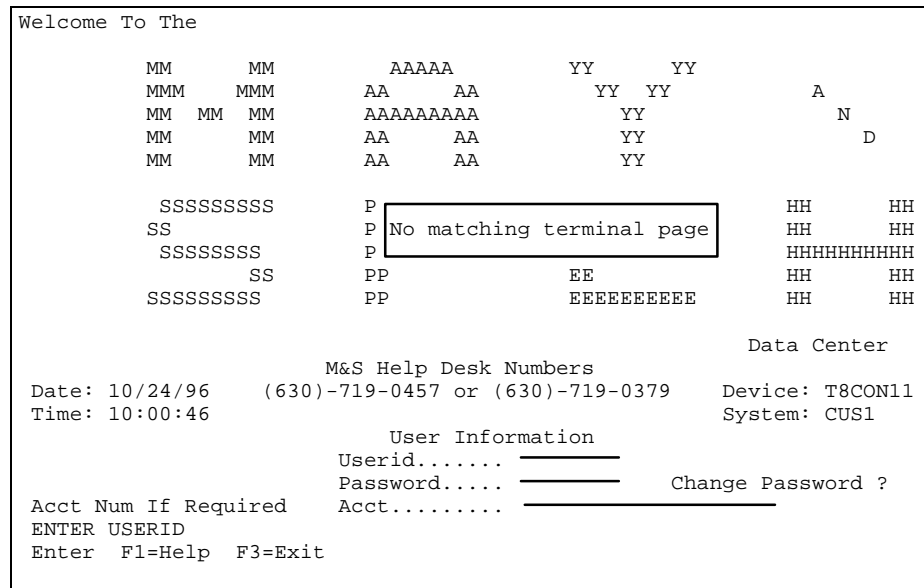


Figure 5-16 Message Indicating Unformatted Host Screen

Once a matching terminal screen/page is created, the message similar to the one shown in Figure 5-17 is displayed before the host screen appears.

```

Welcome To The

      MM      MM      AAAAA      YY      YY
      MMM     MMM     AA      AA      YY  YY      A
      MM  MM  MM     AAAAAAAAA      YY      N
      MM      MM     AA      AA      YY      D
      MM      MM     AA      AA      YY

      SSSSSSSS      HH      HH
      SS           Matches terminal screen 0, page 0  HH      HH
      SSSSSSSS      HHHHHHHHHH
      SS           PP           EE           HH      HH
      SSSSSSSS      PP           EEEEEEEEEEE      HH      HH

                                           Data Center
                M&S Help Desk Numbers
Date: 10/24/96      (630)-719-0457 or (630)-719-0379  Device: T8CON11
Time: 10:00:46                                           System: CUS1

                User Information
                Userid..... _____
                Password..... _____ Change Password ?
Acct Num If Required  Acct..... _____
ENTER USERID
Enter F1=Help F3=Exit

```

Figure 5-17 Message Indicating Formatted Host Screen

Deletions

The *Formatter Editor* includes functions necessary for corrections and changes to the formatted object, which are explained in the following sections.

Deleting Fields and Idents

If a field has been placed on the formatted terminal page and is not necessary, is in the wrong location, or has a typo, the field in question must be deleted and reconstructed if necessary. The formatter tool does not allow for modification of fields (with the exception of the *ident string*) once they are placed on the terminal presentation space.

Deleting a Field

When the terminal presentation space is in view, use the <Tab> key to go from field to field on the page, and note the number of the field in question. The field number of the selected field is displayed in the upper right corner of the terminal PS status bar. Fields are numbered as they are added and the order can change as more fields are added to a terminal PS screen. When a field is deleted, remaining fields may be renumbered.

Figure 5-18 contains a field to be changed - in this case we want to change “Opening Screen” to read “Host Logon”. When this page was formatted, all messages, input fields, and new text fields were added in separate operations and

have different field numbers. The cursor was positioned on the "Opening Screen" field when this screen was captured and its field number is 5.

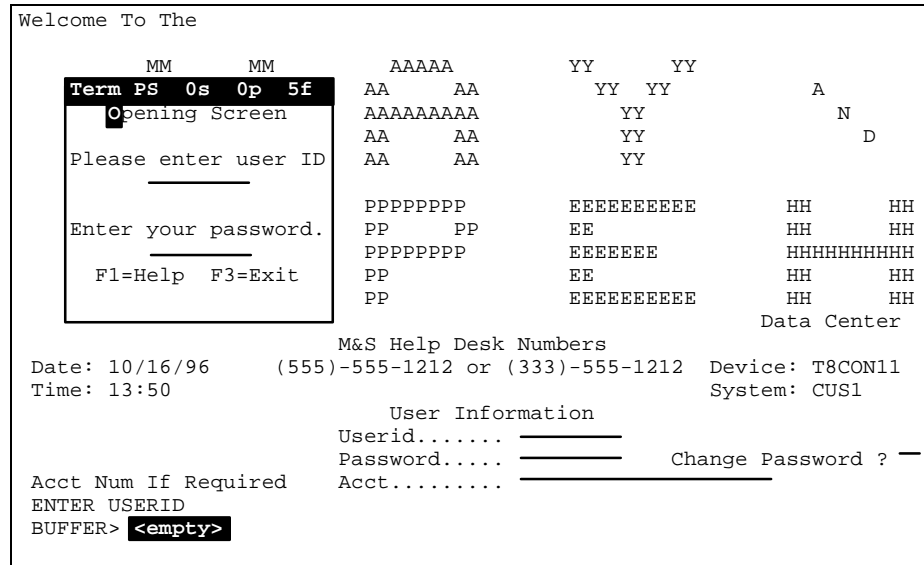


Figure 5-18 Page With Field To Be Deleted

Press <d> (lower case) to start the deletion process. The prompt shown in Figure 5-19 appears on the screen

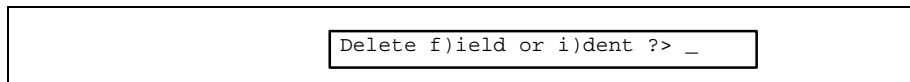


Figure 5-19 Field Or Ident Deletion Prompt

Type an <f> and press <Enter>. The prompt shown in Figure 5-20 appears.

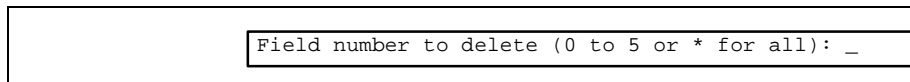


Figure 5-20 Field # Deletion Prompt

Type the field number (in this example, field 5) and press <Enter>. The field is then deleted from the page as is shown in Figure 5-21.

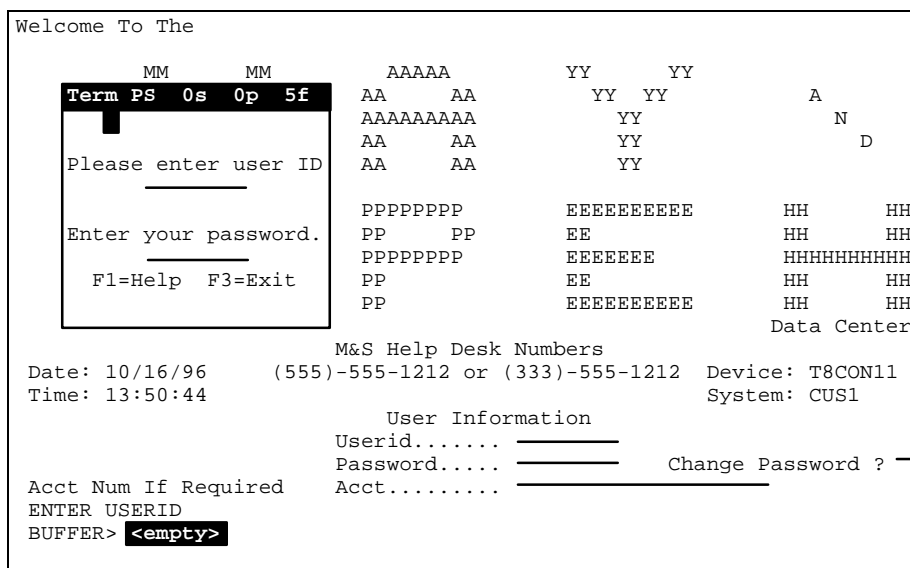


Figure 5-21 Terminal Page With Field Removed

Deleting an Ident

When removing an ident, the field number of the ident must be known. This information appears on the *Terminal Field Information Display* as shown in Figure 5-6. If there is only one ident for that host screen, the ident field number is 0.

Press lower case <d> to remove an ident for all pages of a terminal screen, and also from the matching host screen. Enter an <i> at the prompt shown in Figure 5-19 and press <Enter>. The prompt shown in Figure 5-22 appears. Type the ident number and press <Enter>.


```

ID Field number to delete (0 to 0 or * for all): _

```

Figure 5-22 Ident Field # Deletion Prompt

Deleting Pages and Screens

Figure 5-24 shows page 1 of terminal screen 0 which is matched to the under-lying host screen. It was decided that this page was not necessary since RACF (the host's security system) automatically established the account based on the login and this page should be deleted.

```

Welcome To The

      MM      MM      AAAAA      YY      YY
Term PS 0s 1p 0f AA AA YY YY A
AAAAA AAAA YY N
Account: AA AA YY D
      AA AA YY

PPPPPPP EEEEEEEEE HH HH
PP PP EE HH HH
PPPPPPP EEEEEEE HHHHHHHHH
PP EE HH HH
PP EEEEEEEEE HH HH
Data Center

M&S Help Desk Numbers
Date: 10/16/96 (555)-555-1212 or (333)-555-1212 Device: T8CON11
Time: 13:50:44 System: CUS1

User Information
Userid..... _____
Password.... _____ Change Password ?
Acct..... _____

Acct Num If Required
ENTER USERID
BUFFER> <empty>

```

Figure 5-24 Page To Be Deleted

To remove this page, upper case <D> was pressed. The prompt shown in Figure 5-25 appeared.

```

Delete page 1 of screen 0 (y/n)? _

```

Figure 5-25 Page Deletion Prompt

<Y> was pressed followed by <Enter> and the page was removed. The same process is available for screens, the on-line prompts are similar.

Miscellaneous Formatting Features

The *Formatter* includes several features to help modify, rearrange, and copy similar pages (replicate) so that the formatting process can be less tedious. These are explained in the following sections.

Modify Ident String

If a string was used for an ident and a different string is to be substituted, it does not have to be deleted and a new string highlighted and set as an ident. Instead, pressing upper case <M> while the Formatter is toggled to the terminal page displays the form shown in Figure 5-26

Figure 5-26 Ident Modification Prompt

Enter the field number of the ident (see Figure 5-6) and press <Enter>. The current ident text is displayed on the form as shown in Figure 5-27.

Figure 5-27 Ident Modification Prompt

Enter the new text string that is to be an ident and press <Enter>. Text and spacing must be entered exactly as it appears on the host screen. This feature is useful in cases that ident strings may change as applications are modified. Typical instances of this can occur if indents are based on screen ID numbers that can change as developers require.

Replicate Pages

When host applications have similar screens, the *Replicate Pages* feature can be used to avoid repetitive work. First, format the host screen that is repeated and then use the <Ctrl><f> key combination to display a new, blank terminal screen/page.

In our example, a different host screen with the unique ident field “VTPNA102 USER NOT DEFINED” appears if the user fails to log on correctly. Although the input prompts appear on the screen the exact same way as the original login screen, the formatter does not catch this screen because the ident field differs. What we can do is go to the captured screen that displays this message, replicate the original signon screen, and modify the ident field. Press upper case <R> and the prompt shown in Figure 5-30 appears.

```
Welcome To The
MM      MM      AAAAA      YY      YY
Term PS 1s 0p 0f AA      AA      YY      YY      A
AAAAAAAAA      YY      N
AA      AA      YY      D
AA      AA      YY

PPPPPPPP      EEEEEEEEE      HH      HH
PP      PP      EE      HH      HH
PPPPPPPP      EEEEEEE      HHHHHHHHH
PP      EE      HH      HH
PP      EEEEEEEEE      HH      HH
Data Center

M&S Help Desk Numbers
Date: 10/16/96      (555)-555-1212 or (333)-555-1212      Device: T8CON11
Time: 13:50:44      System: CUS1

User Information
Replicate from (screen,page): _      Change Password ?
Acct
VTPNA102 USER NOT DEFINED
BUFFER> <empty>
```

Figure 5-30 Page Replication

Enter the terminal screen and page information separated by a comma (no spaces) and press <Enter>. A copy of the formatted page appears on the page that was the blank.

```

Welcome To The
      MM      MM      AAAAA      YY      YY
Term PS 1s 0p 6f AA AA      YY YY      A
Logon Error AAAAAAAAAA      YY      N
User Not Defined AA AA      YY      D
Please enter user ID AA AA      YY

Enter your password.
      P P P P P P P P      E E E E E E E E      H H      H H
      P P      P P      E E      H H      H H
      P P P P P P P P      E E E E E E      H H H H H H H H
      P P      P P      E E      H H      H H
      P P      P P      E E E E E E E E      H H      H H
Data Center
      M&S Help Desk Numbers
Date: 10/16/96      (555)-555-1212 or (333)-555-1212      Device: T8CON11
Time: 13:50:44      System: CUS1

      User Information
      Userid.....
      Password.....      Change Password ?
Acct Num If Required      Acct.....

VTPNA102 USER NOT DEFINED
BUFFER> <empty>

```

Figure 5-31 Page Replication Complete with Modifications

In the above example, the majority of the screen was replicated, the ident field was modified, and other text fields were added.

Global Modification of Ident

Example the need to modify idents globally occurs. A customer has two applications with almost identical screens. In addition, the screens within each application are repetitive. To solve the problem of repeating the formatting of each screen and then the formatting of the second application, the following procedure was used.

The repetitive host screen was formatted to a terminal page and identified with a string that appeared on all the similar host screens. It was then replicated. Next, a unique part of each host screen, which was a code in the upper left-hand corner, was identified on each screen. This resulted in only one of the replicated terminal screens matching one host screen. All other non-repetitive screens in the application were formatted according to the normal procedures in this manual.

The second application was again similar to the first but the ident that had appeared on all pages was slightly different. It was preceded by an x. The formatted object was copied, loaded, and opened in the *Formatter*.

The <G> key was pressed to modify the idents. The screen shown in Figure 5-32 appeared.



Figure 5-32 Global Modification Of Ident Form

The ident string text was entered in the search field and the text preceded by an x was entered in the replace field. Then, <Enter> was pressed and the modification was made by the *Formatter*.

Order Pages and Fields

This feature is designed for the terminal user, making data entry easier. Field order on a page determines which data entry field is filled in first, second, etc. The top-most data entry field is first as it is 0, followed by the one below or next to it which is 1, from top to bottom. This does not affect the host application.

If fields were placed on a terminal page in an order that is not convenient, the placement need not change. Only the field numbering must be modified to have a lower field be active before one closer to the top of the page.

In Figure 5-33 the fields are Userid - 0. Change PW - 1, and Password - 2. It would be more convenient for the user if the Password field could be completed before the Change PW field.

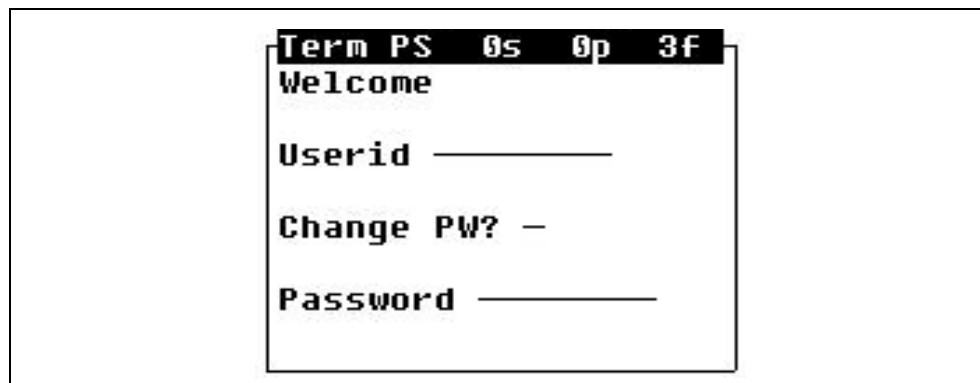


Figure 5-33 Terminal Page With Inconvenient Order

Press <F9> or <o> to have the cursor jump to the Password field after the Userid is entered. The prompt shown in Figure 5-34 appears.

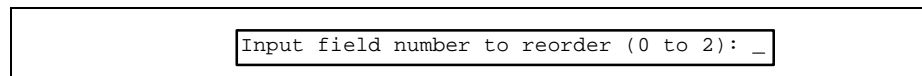


Figure 5-34 Change Field Order prompt

The field number for the Password Data Entry blank is entered (2) and <Enter> is pressed. The prompt shown in Figure 5-35 appears.

A screenshot of a terminal window showing a prompt: "New input field number for 2 (0-2): _". The text is centered within a rectangular box.

Figure 5-35 New Field Number Prompt

The new field number, 1, for the Password field is typed in and <Enter> is pressed. The new field order is checked with the <Tab> key.

Set Scan Key - 3270 and 5250

As is mentioned in the *3270 and 5250 Reference Manuals*, scanned data fields can be sent to the host with either a *Standard Key* or an *Alternate Key*. All fields are sent with the standard key unless they are modified by pressing upper case <S> when the cursor is positioned on the field.

The following form is then used to set the field to the alternate key (see Figure 5-35).

A screenshot of a terminal window showing a prompt: "SCAN key field 0 is standard (s=standard a=alternate): _". The text is centered within a rectangular box.

Figure 5-35 Set Scan Key Form

Enter either **a** for the alternate or **s** for standard. When this prompt is active on the terminal and data is input via the scanner, the terminal sends the specified key to the host.

Set Key Definitions

The <F5> or <s> key displays the appropriate *Key Function Form* discussed in *Keys* on Page 1-7.

Linking the Formatter Object to the Handler

Linking the formatter object to the *Handler* is an easy process. The *Formatter Object* field must be completed and the *Handler Setup Form* saved. Instructions for completing the rest of this form appear in the appropriate *Reference Manual*. The form shown in Figure 5-36 is from the *3270 Reference Manual*.

Object field

```

[SD3270      ]      3270 Handler Setup - EXPRESS      Page 1

      Keyboard                      Alarm                      Formatter
      End Key [pf10 ]              Mode [bell ]          Object [demo ]
      Hot Key [noop ]              Volume [hi ]          Alt. Key [noop ]
Auto Send Key [tab ]              Duration [150 ]       Dialog
      Key Click [on ]              Frequency [0 ]         Object [DFLT ]
Case Conversion [none ]           Scan Duration [300 ]  Timers
      Scanner                      Scan Frequency [0 ]   Radio [120]
      Send Key [enter ]            Allow Multiple [yes]   Power [300]
      Scan Ahead [1 ]              By Attribute [off]     Backlight [0 ]
      Display                      Protected [no ]        TN3270
Quadrant Mode [on ]              Unprotected [no ]     Host Number [0]
      Lock Row [0 ]                Printer
      Lock Column [0 ]              Type [none ]
      Scroll Mode [full]            Init Object [ ]
      Wait Message [on ]            Flag Byte [0 ]
                                      Flag Row [0 ]
                                      Flag Column [0 ]
                                      Clear Key [noop ]

<ESC>=QUIT <SPACE>=CHANGE <ARROWS>=MOVE <CTRL><B>=PGUP <CTRL><F>=PGDN

```

Figure 5-36 3270 Handler Setup Form

Formatter Object [Toggle Field]— Toggle to the name of the object which contains the final formatted screens which are to be sent to RF terminals.

Once the form is complete, press *<esc>* and save the changes. The formatter object is now tied to the handler and are active for terminals selecting the handler.

