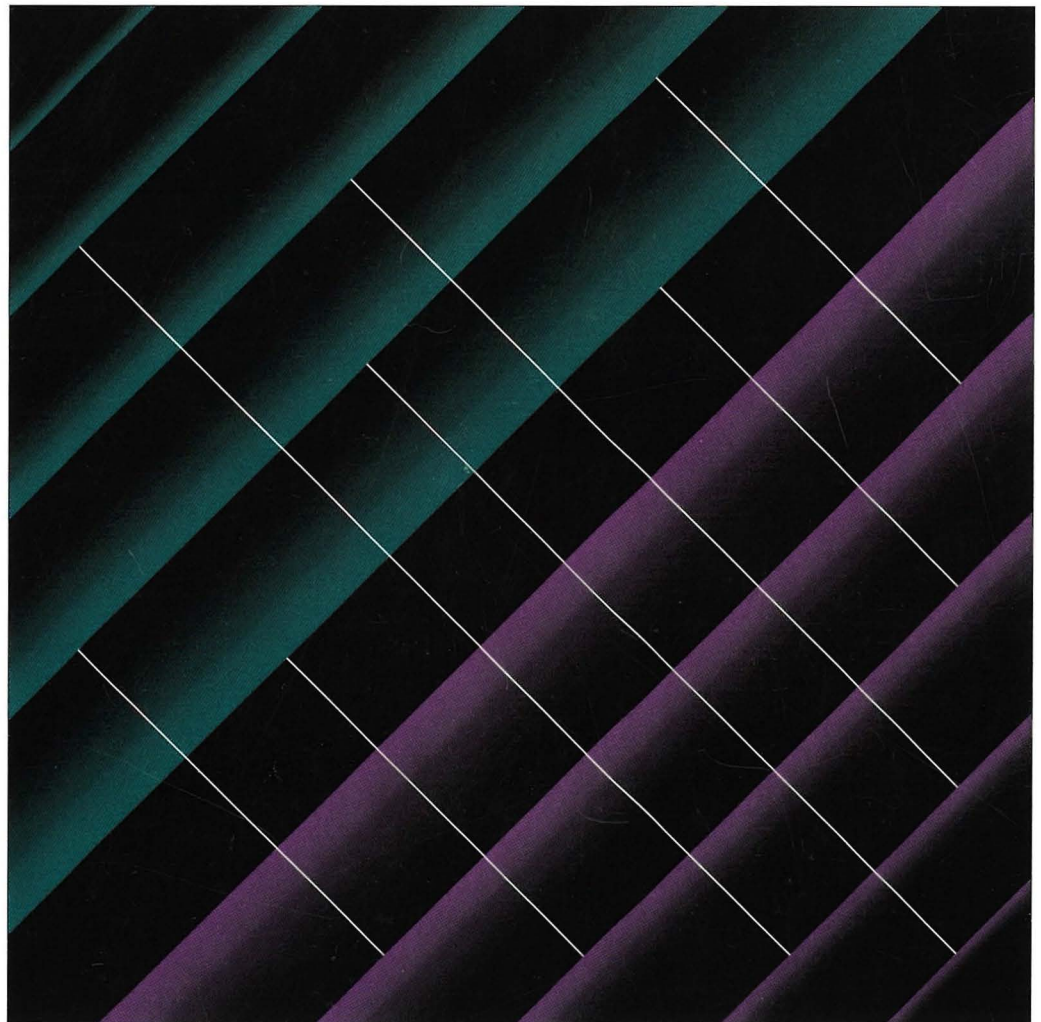


3174 Establishment Controller

GA27-3863-04

**Utilities Guide**

Configuration Support B Release 4







3174 Establishment Controller

GA27-3863-04

## **Utilities Guide**

Configuration Support B Release 4

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#### **Note**

Before using this information and the product it supports, be sure to read the general information under "Notices" on page xi.

### **Fifth Edition (February 1994)**

This edition applies to the Configuration Support B Release 4.4 of this product.

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**ES/9000\* Users:** The 3174 Model 21H used with the ES/9000 Models 120, 130, 150, and 170 is the same as a 3174 Model 21L throughout this publication. A Model 21H is customized as a Model 21L.



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## About This Book

This *Utilities Guide* supports 3174 Configuration Support B Release 4 microcode.<sup>1</sup> It is written for those who run the utilities for the 3174 Establishment Controller (3174) or who enter information from the customization worksheets to customize the Control disk microcode. **If you plan to customize the controller, you should have the customization worksheets already filled out and ready to use.** See the person responsible for filling out these worksheets if you do not have them. The *3174 Planning Guide* contains the customizing planning information used to fill out the worksheets.

---

### How This Book is Organized

**Chapter 1** contains the initial steps necessary to prepare for and choose the desired customizing or utility procedure.

---

**Chapter 2** contains the customizing procedures.

**Chapters 3 through 7** contain the support utility procedures.

---

**Appendix A** contains the **3174 Configuration Questions Reference** table. The questions are grouped according to the worksheets where they are found and the possible responses to the questions are listed.

---

**Appendix B** contains reference information for the first-time user.

---

**Appendix C** contains record-keeping information.

---

**Appendix D** helps you get started customizing.

---

### How To Use This Book

**First-time users** should start with Chapter 1. This chapter contains the procedure for displaying the Master Menu. You then use a table to match customizing worksheets or support utility tasks to a Master Menu Option. This option, in turn, suggests where you should begin.

---

**Use Chapter 2** to Customize the Control Disk.

**Use Chapter 3** for merging DSL Code.

**Use Chapter 4** for copying files.

**Use Chapter 5** for upgrading Microcode.

**Use Chapter 6** for Media Management.

**Use Chapter 7** for identifying keyboards.

---

**Use the 3174 Configuration Questions Reference** as a check against worksheet responses. Be sure to use the *3174 Planning Guide* to fill out the worksheets initially.

---

**Use Appendix B** for background on the customizing and support utilities. Appendix B also has information on microcode releases, available display stations, a physical description of the 3174, and a lesson on inserting diskettes. There is also a procedure for **securing (parking) the fixed disk head**. Use this procedure **before moving** the controller.

---

**Use Appendix C** to learn about local copy, diskette duplication and using the copy procedure to manage customization data.

---

**Use Appendix D** for information about the Customizing process. It describes the Master Menu and Customize Control Disk Menu options.

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<sup>1</sup> Microcode may be classified as IBM Licensed Internal Code. See the "3174 Licensed Internal Code" notice at the beginning of this document for information

## How This Book is Organized

**Appendix E** contains reference material for the automatic interutility and interconfigure checking programs.

**Appendix F** contains reference material for the Limited Function Utility (LFU) disk.

**Appendix G** contains the fixed disk initializing procedure.

## How To Use This Book

**Use Appendix E** if the automatic interutility or interconfigure checking programs discover incompatibility errors as a result of the customization responses.

**Use Appendix F** for information on the LFU Disk.

**Use Appendix G** when you have a new controller with a fixed disk or a new field-installed fixed disk feature.

---

## Choosing the Right Book from the 3174 Library

The 3174 library contains information for installing, customizing, operating, maintaining, and programming the data stream for the 3174. The list below shows the publications you need to perform these tasks.

### To Find Translations of Safety Notices:

*Safety Notices*, GA27-3824

### To Organize Library Materials:

Binders and Inserts, SBOF-0089

Binder, SX23-0331

Inserts, SX23-0332

### To Become Familiar with the 3174:

*Master Index*, GC30-3515

*Introduction*, GA27-3850

### To Prepare Your Site for the 3174:

*Site Planning*, GA23-0213

*Physical Planning Template*, GX27-2999

### To Set Up and Operate the 3174:

*Models 1L, 1R, 2R, 3R, 11L, 11R, 12L, 12R, and 13R User's Guide*, GA23-0337

*Models 21L, 21R, 22L, and 23R User's Guide*, GA27-3874

*Models 51R, 52R, 53R, 61R, 62R, and 63R User's Guide*, GA23-0333

*Models 81R, 82R, 90R, 91R, and 92R User's Guide*, GA23-0313

### To Plan for and Customize the 3174:

#### Configuration Support A and S

*Planning Guide*, GA27-3844

*Utilities Guide*, GA27-3853

*Central Site Customizing User's Guide*, GA23-0342

*Asynchronous Emulation Adapter Description and Reference*, GA27-3872

#### Configuration Support B

*Planning Guide*, GA27-3862

*Model 90R Tokenway Planning*, GD21-0036

*Utilities Guide*, GA27-3863

*Central Site Customizing User's Guide*, GA27-3868

*Asynchronous Emulation Adapter Description and Reference*, GA27-3872

## Configuration Support C

*Planning Guide*, GA27-3918  
*Utilities Guide*, GA27-3920  
*Central Site Customizing User's Guide*, GA27-3919  
*ASCII Functions Reference*, GA27-3872

### **To Perform Problem Determination:**

*Customer Problem Determination*, GA23-0217  
*Status Codes*, GA27-3832

### **To Install Features or Convert Models on the 3174:**

*Fixed Disk Installation and Removal Instructions*, GA27-3864  
*Diskette Drive Installation and Removal Instructions*, GA23-0263  
*Device Control Adapters Installation and Removal Instructions*, GA23-0265  
*Model Conversion Instructions*, GA23-0295  
*Token-Ring Network Feature Installation and Removal Instructions*, GA23-0329  
*Storage Expansion Feature Installation and Removal Instructions*, GA23-0330  
*Communication Adapter Installation and Removal Instructions*, GA27-3830  
*Asynchronous Emulation Adapter Installation and Removal Instructions*, GA23-0341  
*Concurrent Communication Adapter and Integrated Services Digital Network Adapter Installation and Removal Instructions*, GA27-3851  
*Models 21L, 21R, 22L, and 23R Feature Installation and Removal Instructions*, GA27-3875

### **To Use the Asynchronous Emulation Adapter Feature:**

*Asynchronous Emulation Adapter Description and Reference*, GA27-3872  
*Terminal User's Reference for Expanded Functions*, GA23-0332

### **To Use the Multiple Logical Terminals Function:**

*Terminal User's Reference for Expanded Functions*, GA23-0332

### **To Obtain Data Stream Programming and Reference Information:**

*Functional Description*, GA23-0218  
*Data Stream Programmer's Reference*, GA23-0059  
*Asynchronous Emulation Adapter Description and Reference*, GA27-3872  
*3174 Reference Summary*, GX27-3872  
*3174 Character Set Reference*, GA27-3831  
*3270 X.25 Operation*, GA23-0204

### **To Perform Maintenance (Service Personnel):**

*Models 1L, 1R, 2R, 3R, 11L, 11R, 12L, 12R, 13R Maintenance Information*, SY27-2572  
*Models 21L, 21R, 22L, and 23R Maintenance Information*, SY27-0323  
*Models 51R, 52R, 53R, 61R, 62R, and 63R Maintenance Information*, SY27-2573  
*Models 81R, 82R, 90R, 91R, and 92R Maintenance Information*, SY27-2584  
*CE Reference Summary*, SX27-3873  
*Status Codes*, GA27-3832

## Other Related Publications

The following publications are available for the 3174. They are developed by the International Technical Support Center. The intended audience for these books are IBM system engineers and customer network planners.

*IBM 3174 Establishment Controller Installation Guide*, GG24-3061

*NetView Distribution Manager Release 2 and 3174 Central Site Change Management Implementation Guide*, GG24-3424

*IBM 3174 CECP Migration Issues*, GG24-3380.

The following publications may also be useful when working with your 3174 or its attached network.

*ESCON\* Isolation*, SY22-9533

*IBM Cabling System Planning and Installation Guide*, GA27-3361

*IBM ESCON Cable Connector Cleaning Procedures*, SY27-2604

*IBM Token-Ring Network Problem Determination Guide*, SX27-3710

*NetView Operations*, SC31-6019

*3299 Terminal Multiplexer Information and Setup Instructions*, G520-4216

*IBM 3299 Terminal Multiplexer Product Information and Setup*, G520-4216

*IBM 3299 Model 32 Planning for Optical Fiber Cable*, GA27-3902.

---

## What Is New in This Book

| This book has been revised to include changes and enhancements for 3174  
| Configuration Support B Release 4.4, including the addition of configuration  
| question 103: Non-Standard Operation Selection.

| Technical changes and additions to the text are indicated by a vertical line (|) to the  
| left of the change.



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## Chapter 1. Getting Started

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## How to Begin

### In this chapter, you will:

- Display the Master Menu.
- View a table that lists the worksheets used to customize the controller. From this table, you are directed to the Verify Drives section in Chapter 2 which will point you to the correct procedure for your worksheets. A second table will help you choose the appropriate option and chapter for any support utility tasks you may have to do.

### You should have one of the following things:

- A set of completed worksheets from the planner. (The worksheets will direct you to a Master Menu customizing utility. The customizing utilities are described in Appendix B.)
- Master Menu support utility tasks you wish to perform. (Support Utilities are listed in Table 1-2 on page 1-9 and are described in Appendix B.)

### You will also need:

- A 3174 Establishment Controller (3174) Utility (UTL) disk (diskette or on fixed disk). A *disk* can be either a diskette or a fixed disk.
- A 3174 Control (CTL) disk.
- A *customizing display station* attached to terminal port address 26-00 of the controller. See “Which Display Stations Can You Use?” on page B-6 for a list of display stations that can be used.
- You may also need a copy of the *3174 Status Codes*.

**Note:** The customizing planning information for Configuration Support B Release 4 can be found in the Configuration Support B Release 4 *3174 Planning Guide*.

---

## The Master Menu

To begin any customizing or support utility procedure, you must first display the Master Menu shown in Figure 1-1 on page 1-6. To display the Master Menu, perform the procedure described in “Displaying the Master Menu” on page 1-4. You can perform the procedure using a diskette drive or a fixed disk drive.

### You Have a New Fixed Disk

If you are using a new controller with a fixed disk or have just installed a new fixed disk, you must initialize it. Display the Master Menu using a Utility diskette. (Master Menu instructions are on the next page.) After displaying the Master Menu, you will be directed to Appendix G for instructions on initializing the new fixed disk.

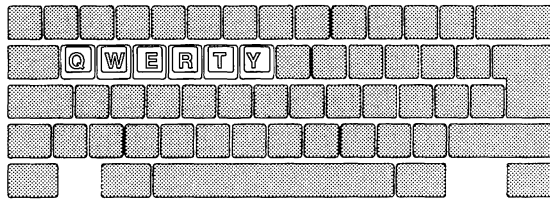
### Displaying the Master Menu

- Step 1** For information about the 3174 switches, indicators, operator panel, and diskette drives, see “Front Panel Layout and Diskette Insertion” on page B-7.
- Step 2** If the customizing display station is not already on, turn it on.
- Step 3** If the 3174 is already turned on, have the host operator take the controller offline. Be aware that taking the controller offline interrupts all services to all the terminals attached to the controller.
- If the 3174 is not turned on, turn it on.
- For Remote (R) models and Models 12L, 21L, and 22L, place the power switch in the I (on) position.
  - For a Model 1L or 11L, place the power switch in the Start position and release.
  - For a Model 1L, 11L, or 21L, make sure that the Channel Interface switch on the operator panel is in the Offline position. The offline indicator should be lit. If the indicator does not light in a reasonable time, you may need to ask the system operator to take the controller offline.
- Step 4** If performing an Initial Microcode Load (IML) from a **diskette drive**, go to step 6.
- Step 5** If IMLing from a **fixed disk drive**, go to step 7.
- Step 6** Insert the Utility diskette into a 2.4-MB diskette drive. Close the diskette drive.
- Step 7** Press and hold the Alt 1 push button on the operator panel.
- Step 8** While holding the Alt 1 push button, press and release the IML push button.
- Step 9** When you see 31 in the status indicators, release the Alt 1 push button. If 31 does not appear, refer to *3174 Status Codes*.
- Step 10** If you have a Model 81R, 82R, 90R, 91R, or 92R, go to Step 12. For other models, continue with Step 11.
- Step 11** When you see 40 in the status indicators, use the keypad on the controller operator’s panel to key in one of the following codes:
- 0140** if you are IMLing from Diskette Drive 1
  - 0240** if you are IMLing from Diskette Drive 2
  - 0340** if you are IMLing from Fixed Disk 3
  - 0440** if you are IMLing from Fixed Disk 4
- Step 12** Press and release the Enter push button on the operator panel. After approximately 30 seconds, 7000 appears on the operator panel and the Master Menu appears on the customizing display station screen. If 7000 does not appear, refer to *3174 Status Codes*. The title “Master Menu” should be highlighted. If it is not, adjust the contrast for the screen so that the title is brighter than the other characters. You need to distinguish highlighted characters during the customizing procedures.

## Displaying the Master Menu

**Step 13** If you want to print copies of the customization panels as you complete them, turn on your printer and press the Print key. This printer can be attached only to terminal port addresses 26-01 through 26-31 (not port address 26-00 and not any address for HG 27, such as 27-01). After you have received a copy, attach a label with information about the serial number and location of the controller, date of the customization and microcode release level. For more information about this procedure, see “Local Copy” on page C-3.

**Step 14** Check the keyboard of the customizing display station. The default is a QWERTY. The “QWERTY” keyboards get their name from the first six characters on the top row of alphabetic keys: Q-W-E-R-T-Y. A QWERTY keyboard used on a customizing display station may have a Typewriter, Data Entry, APL (with APL off), or Text (with Text off) layout. If the keyboard is not a QWERTY layout, you must select the Identify Customizing Keyboard procedure first from the Master Menu. See Chapter 7, “Identifying Customizing Keyboards.”



### You Have a New Fixed Disk

If you have a new controller with a fixed disk or a new fixed disk in your controller, you need to initialize the fixed disk before proceeding further. Go to Appendix G, “Initializing the Fixed Disk.”

## Displaying the Master Menu

### The Master Menu Displayed

```
      ___ Master Menu ___  
  
3174 MICROCODE © COPYRIGHT IBM CORP 1986, 1991  
Licensed Internal Code - Property of IBM  
  
Select option; press ENTER  
  
Option  Description  
1      Customize the Control Disk  
2      Merge DSL  
3      Copy Files  
4      Diagnostics  
5      Microcode Upgrade  
6      Central Site Customizing  
7      Media Management  
K      Identify Customizing Keyboard  
  
Select ==>  _
```

*Figure 1-1. The Master Menu*

If the displayed Master Menu does not contain all of the options shown in Figure 1-1, you have the Limited Function Utility (LFU) disk. In a network that uses the LFU Disk, all the controllers are configured from your central site.

If you have the LFU disk, the Master Menu will look like the one shown in Figure 1-2.

```

      ___ Limited Function Master Menu ___

      3174 MICROCODE © COPYRIGHT IBM CORP 1986, 1991
      Licensed Internal Code - Property of IBM

Select option; press ENTER

Option  Description
  1     Diagnostics
  2     Copy Files
  3     Media Management
  K     Identify Customizing Keyboard

Select ==>> ___
```

*Figure 1-2. The Limited Function Utility (LFU) Master Menu*

If you would like a more detailed explanation of this Master Menu, see Appendix F, "Limited Function Utility (LFU) Disk."

---

## Worksheet and Task Tables

Now that the Master Menu is displayed, you are ready to determine the menu option that you need to select.

- If you have customizing worksheets, go to "The Worksheet Table" on page 1-8. If you need help with the worksheets, see the person who filled them out or use the customizing planning information in the *3174 Planning Guide*.
- If you have support utility tasks to perform, go to "The Task Table" on page 1-9.

## The Worksheet Table

The Worksheet Table lists the worksheets that contain the customization information you need.

1. Locate your worksheets in this table. If you have a worksheet that is not listed in this table, set it aside. Only the worksheets listed in this table are needed.
2. Select Option 1 from the displayed Master Menu and press ENTER.
3. Perform the procedure on page 2-4 to verify the drive. (If you are familiar with the verify drives procedure, go to "Customize Control Disk Menu" on page 2-5. Use the table in this section to match worksheets with procedures.)

Table 1-1. Worksheet Table

Worksheet		Worksheet	
1	Host Attachment	20	AEA Station Set
2	Multi-Host Definition	21	AEA Default Destination
3	BSC	22	Terminal Tables Definition
3S	Secondary BSC	23A	Inbound Sequence Panels
4	SDLC	23B	Inbound Sequence Panels
4S	Secondary SDLC	24	Outbound Sequence Panels
5	X.25	25	Translate Tables Definition
5S	Secondary X.25	26	EBCDIC to ASCII Translation (Outbound)
6	Non-SNA (Channel)	27	ASCII to EBCDIC Translation (Inbound)
7	SNA (Channel)	28	Device Definition
7S	Secondary SNA (Channel)	29	Printer Authorization Matrix (PAM)
8	X.21 Switched	30	Logical Terminal Assignment (LTA)
8S	Secondary X.21 Switched	31	Extended Vital Product Data (VPD)
9	Token-Ring Network	32	Token-Ring Gateway
9S	Secondary Token-Ring Network	33	Ring Address Assignment
11A	117: Port Assignment	34	Ring Transmission Definition
11B	117: Port Assignment for AEA		
12	128: RTM		
13	X.25 Options		
13S	Secondary X.25 Options		Non-Katakana Converged Keyboards
14	Common SNA		Katakana Converged Keyboards
17	AEA Configure		Enhanced Keyboard (US)
18	AEA Port Set		Enhanced Keyboard (World Trade)
19	AEA Port-to-Port Set Map		Enhanced Keyboard (Katakana)

**Note:** Worksheets 10A, 10B, 10C, 15A, 15B, 16, and 35 are not listed and are not used to do the procedures described in this publication.



## The Task Table

The Task Table (Table 1-2) allows you to match a support utility task with an option from the Master Menu or LFU Master Menu. This option is matched to a specific page.

1. Locate your task in this table.
2. Select the option designated by the table from the displayed Master Menu or LFU Master Menu, and press ENTER.
3. Turn to the chapter designated by the table and perform the procedure.

*Table 1-2. Task Table*

<b>Task</b>	<b>Master Menu</b>	<b>LFU Menu</b>	<b>Go To Page</b>
Merge RPQ	Option 1	N/A	2-39
Merge DSL	Option 2	N/A	3-3
Copy Files	Option 3	Option 2	4-3
Microcode Upgrade	Option 5	N/A	5-3
Media Management	Option 7	N/A	6-3

**Note:** Option 4 (Diagnostics) and Option 6 (Central Site Customizing) of the Master Menu are not shown in the task table. Refer to *3174 Customer Problem determination* for information about Option 4. Refer to the *3174 Central Site Customizing User's Guide* for information about Option 6.



---

## Chapter 2. Customizing the Control Disk

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---

## Customizing the Control Disk

If you have never customized a Control Disk and would like an overview of the customization process, see Appendix D.

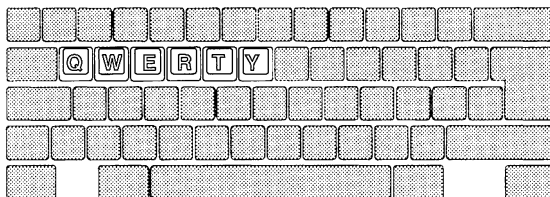
In this section you will:

- Choose (verify) the disk drives you wish to use
- Display the Customize Control Disk Menu
- View a table that will help you to determine the Customize Control Disk Menu option you wish to perform

### Before You Start

You will need:

- The Control (CTL) disk you want to customize and the Utility disk. The Control disk must be *the same microcode level as the Utility disk* that was IMLed. For example, if the Control disk is labeled Microcode Level B4.0, the Utility disk must be labeled Microcode Level B4.0. For more information, see “Determining Maintenance and Microcode Levels” on page 4-9.
- The identity of the customizing keyboard. On a QWERTY keyboard, the first 6 characters on the left side of the top row of alphabetic characters are Q-W-E-R-T-Y.



If you do not have a QWERTY keyboard, you will need to perform a procedure that will help you to identify your keyboard. See Chapter 7, “Identifying Customizing Keyboards” for more information.

- Completed worksheets from the Planner.
- You may also need a copy of the *3174 Status Codes*.

It is a good idea to keep records of the customization responses you will enter. At any point during customization, you can preserve a record of your responses by printing the completed customization screen. If you would like more information about this option, see “Local Copy” on page C-3.

#### Using This Publication

Attempting to customize without completed worksheets may produce puzzling results. Completed worksheets reduce the possibility that conflicting responses will be recorded when you perform the customizing procedures.

### Correcting Errors

During customization, the customization program checks for the following types of customization errors:

- Errors on panels. The following types of errors can occur on a panel:
  - A response that is not valid for an individual question or field
  - Conflicting responses for two or more questions or fields

See “Correcting Responses” on page D-9 for information about correcting panel errors.

- Errors between utilities. Interutility checking occurs when you press PF9 or PF12 from the Control Disk Menu. See Appendix E for information about correcting interutility errors.
- Errors between hosts. Interconfigure error checking occurs during multi-host customization when you press PF12 from the Multi-Host Definition panel. See Appendix E for information about correcting interconfiguration errors.

### Verify the Control Disk Drive

If you have not already displayed the Master Menu as instructed in Chapter 1, do so now by performing the procedure “Displaying the Master Menu” on page 1-4. When you IML to display the Master Menu, you select the drive for the Utility disk. Now you are asked to verify the drive you want to use for your Control disk.

**Step 1** Make sure the microcode level of the Control disk matches the microcode level of the Utility disk you used to display the Master Menu.

**Step 2** If you have not already selected the Customize the Control Disk option from the Master Menu (type 1 after Select ==> and press Enter), do so now. The Disk Drive Assignment panel is displayed on your screen.

**Step 3** Verify drives.

```
Available drives: 1 2 3 4  Utility ==> 1  Control ==> 2
```

```
(Processing.....)  
PF: 3=Quit
```

Figure 2-1. Disk Drive Assignment Panel

Figure 2-1 shows a 4-drive controller. Disk drives 1 and 2 are diskette drives, and disk drives 3 and 4 are fixed disk drives. The Utility ==> and Control ==> drive fields contain default drive selections.

- If you want to use the default drive selection, press ENTER and follow the prompts that appear on your screen.
- If you do *not* want to use the default drive selection that is displayed on the screen, after Control ==>, type the number of the drive you want to use, press ENTER, and follow the prompts that appear on your screen.

After completing the verify drives section, go to page 2-5 for the Customize Control Disk Menu. The table on page 2-5 will direct you to the proper procedure for your worksheets.

**Using This Publication**

On-screen prompts and messages allow you to complete the procedure to verify the Control disk drive. Return to this publication for help interpreting the configuration screens that follow.

## Customize Control Disk Menu

After you have verified the drives and pressed ENTER, the Customize Control Disk Menu is displayed.

```

                ___ Customize Control Disk Menu ___

Select option; press ENTER

Option   Description
  1      Configure
  2      Define Devices
  3      Merge RPQs
  4      Modify Keyboards
  5      Define AEA

Select ==>

PF:  3=Quit      9=Check      12=File
    
```

Figure 2-2. Customize Control Disk Menu

To determine the proper procedure for the worksheets you have, use the following table to match procedures with worksheets.

If you want to:	You have worksheets:	Go to page:
Configure	1 through 14 or 32 through 35	2-6
Define Devices	28 through 31	2-30
Merge RPQs	N/A (you have an RPQ diskette)	2-39
Modify Keyboards	Keyboard Worksheets	2-46
Define AEA	17 through 27	2-62

### PF Keys for Configure

You can call up a specific function of the customizing program by pressing a PF key. As you follow the Configure procedure, your choice of PF keys varies from panel to panel. Some or all of these PF keys may appear on the panels during the Configure procedure. Use the following table to determine Configure Control Disk PF key functions.

PF Keys:	Function:
PF3	<p>PF3 (Quit) is used to quit the procedure. Pressing it discards all the responses you have entered on all the previous panels. The Customize Control Disk Menu appears on your screen. If you press PF3 from the Customize Control Disk Menu, your responses from the configuration process are erased and you are returned to the Master Menu.</p>
PF4	<p>PF4 (Default) erases your responses from the current panel on your screen. The screen clears, and the same panel, filled with default responses, reappears.</p> <p>For the 117: Port Assignment Panel, default values will be entered on every screen. For example, if you enter PF4 when you are displaying the second screen, both the first and second screens will be erased and default values will be entered.</p> <p><b>Warning:</b> If you press PF4, you will lose the information you have entered on the panel and related panels.</p>
PF7	<p>PF7 (Back) brings up the previous panel. When you press PF7, the responses you have entered on the current panel are saved temporarily, even if the panel is not completed. When you return to the partially completed panel, you can complete it.</p>
PF8	<p>PF8 (Forward) checks the responses on the current panel for errors, and if there are none, displays the next panel. If there are errors, an error message appears on the message line. If an error message tells you that the information you have entered conflicts with the response to a previous configuration question, access that previous question again and check your response against the appropriate worksheet. If your response matches the one of the worksheet, consult with the planner who filled out the worksheet to correct the error. You cannot advance to the next panel until all errors are corrected.</p>
PF9	<p>PF9 (Return Host) returns you to the host panel you have completed (titled BSC, SDLC, X.25, X.21 Switched, Local Non-SNA, Local SNA, or Token-Ring Network). When you press PF9, the responses you entered on the current panel are saved temporarily, even if the panel is not completed. After you return to the host panel, press PF8 to advance through the subsequent panels. When you return to the partially completed panel, you can complete it.</p> <p><b>Note:</b> If you are using a keyboard without a PF9 key, use the attention (ATTN) key.</p> <p>PF9 has a different meaning on the Customize Control Disk Menu. If you enter PF9 on that panel, interutility checking takes place. See "Overview" on page E-3 for more information about interutility checking.</p>
PF10	<p>PF10 (Page Back) checks the entire panel, which is made up of a series of screens, for errors, and pages back to the previous screen while displaying any errors that are encountered.</p> <p><b>Note:</b> If you are using a keyboard without PF10, use the Cursor Select Key.</p>



<b>PF Keys:</b>	<b>Function:</b>
PF11	<p>PF11 (Page Forward) checks the entire panel, which is made up of a series of screens, for errors, and pages forward to the next screen while displaying any errors that are encountered.</p> <hr/> <p><b>Note:</b> If you are using a keyboard without PF11, use the PA1 key.</p>
PF12	<p>PF12 (Done), when pressed at the end of the Configure procedure, saves all the responses you have entered on all the previous panels onto the Utility disk. The Customize Control Disk Menu appears. The responses for the Configure procedure are not permanently saved until you press PF12 from the Customize Control Disk Menu and the Master Menu reappears.</p> <p><b>Note:</b> If you are using a keyboard without a PF12 key, use the PA2 key.</p>

**Note:** PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1, and PF15 is PF3.

## Configure Panel Flow

### Configure Panel Flow

| Figure 2-3 on page 2-9 shows the panel sequence for the Configure procedure for  
| the 1A host. Figure 2-4 on page 2-10 shows the panel sequence for any  
| additional hosts that are configured for multi-host support.

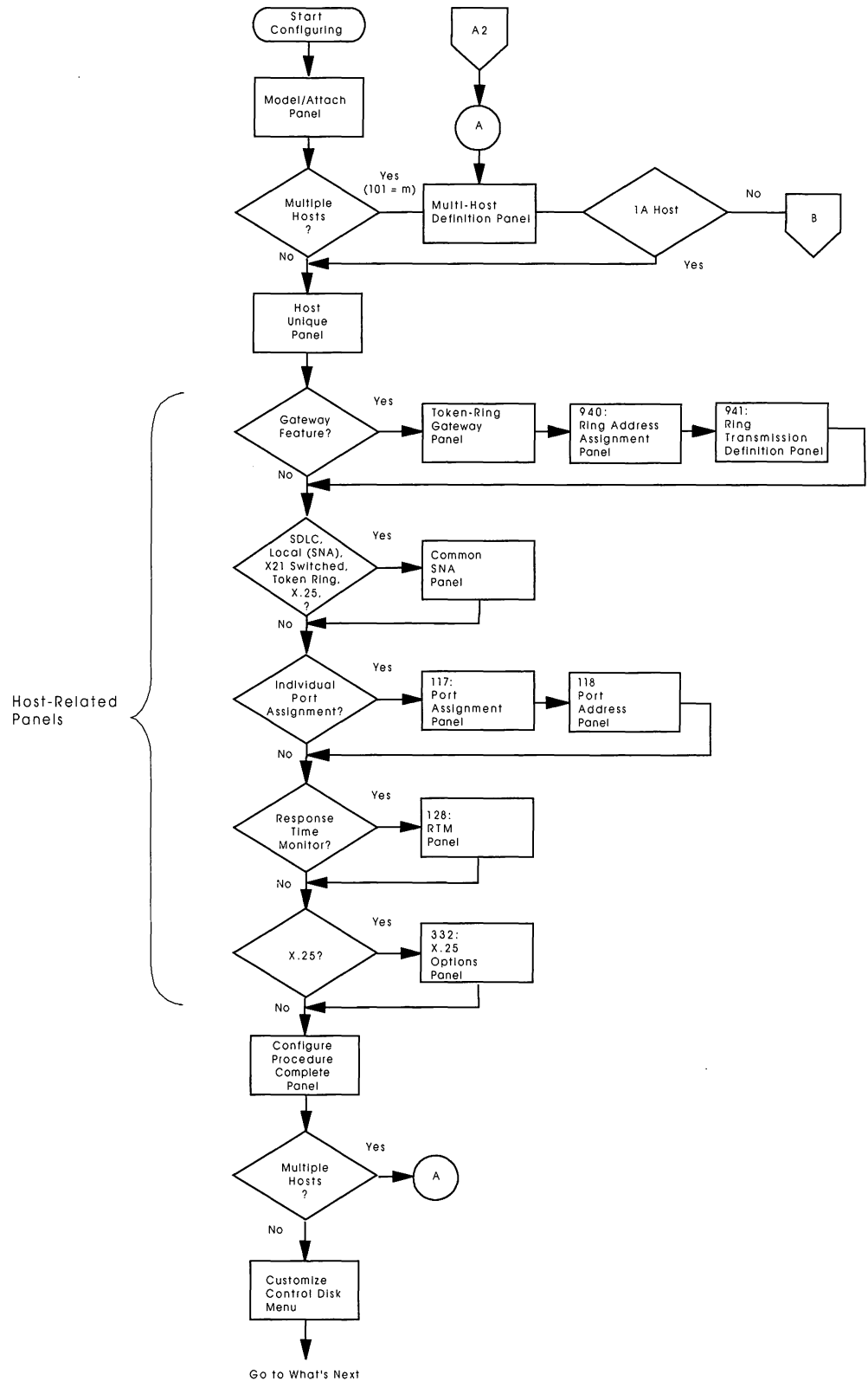


Figure 2-3. Configure Panel Sequence (for 1A Host)

# Configure Panel Flow

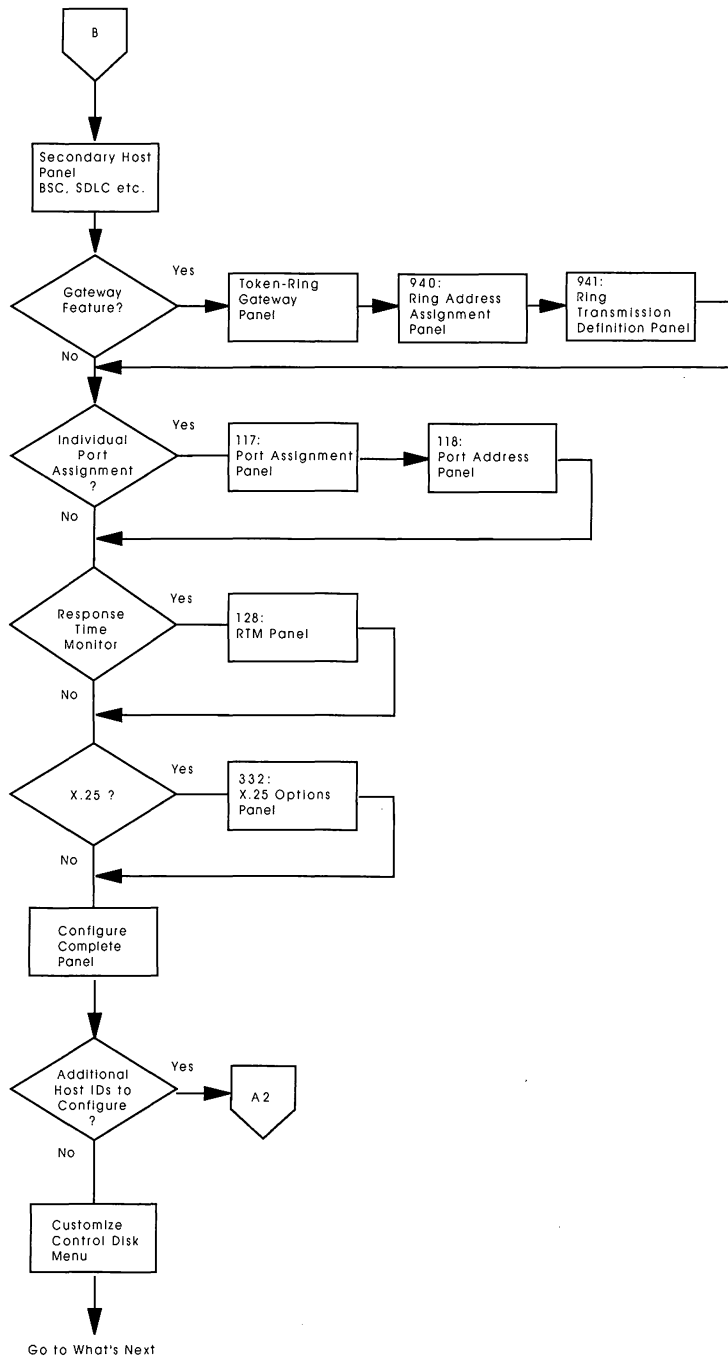


Figure 2-4. Configure Panel Sequence (for Multi-Host Support)

## Configuring the Control Disk

**Before you perform this procedure:**

- You need to have previously selected the “Customize the Control Disk” option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not:
  - See page 1-4 for Master Menu instructions.
  - See page 7-3 for Identifying Keyboard instructions.
  - See page 2-4 for Verify Drive instructions.
- If you have a new unused controller with a fixed disk or have just installed a new fixed disk and have not yet initialized the new disk, you must do so now. (See page G-3 for instructions.)
- If you are not familiar with the Configure PF Key functions, you may wish to review the PF Key table on page 2-6.
- You may also need a copy of *3174 Status Codes*.

The Customize Control Disk Menu is displayed on your screen.

```

                ___ Customize Control Disk Menu ___

Select option; press ENTER

Option   Description
  1      Configure
  2      Define Devices
  3      Merge RPQs
  4      Modify Keyboards
  5      Define AEA

Select ==> 1

PF:  3=Quit      9=Check      12=File
    
```

Figure 2-5. Customize Control Disk Menu (Configure Selected)

**Step 1** To select the configuration option, type **1** after Select ==>.

**Step 2** Press ENTER.

After you press ENTER, the Model/Attach panel (Figure 2-6 on page 2-12) appears on your screen.

## Configuring the Control Disk

\_\_\_ Model/Attach \_\_\_

098 - \_\_\_\_\_

099 -

100 - XXX

101 - X

103 - XXXXXXXXXXXXXXXX

PF:3=Quit            4=Default            8=Fwd

Figure 2-6. Model Attach Panel

**Step 3** Locate the first configuration worksheet (Worksheet 1–Host Attachment). Type in each response that is recorded on the worksheet into the fields that follow the question numbers on the panel.

**Step 4** Press Enter. If you have any responses that are not valid, you can correct them as described in “Correcting Responses” on page D-9. (Responses that are not valid will be highlighted.)

**Note:** A hard copy of the customized panel is useful for future reference and is easily obtained. After completing valid responses for the panel, turn on your printer and press the Print key. If you would like more information about this option, see “Local Copy” on page C-3.

**Step 5** Press PF8 to advance to the next panel.

- If the **Multi-Host Definition Panel** (Figure 2-7 on page 2-13 ) appears, go to Step 6. (the Multi-Host Definition Panel appears if the response to Question 101=M from Worksheet 1.)
- If any panel **other than the Multi-Host Definition Panel** appears, go to Step 8 on page 2-14.

**Step 6** Locate Worksheet 2–Multi-Host Definition and type in the responses written on the worksheet. Note that Host IDs 1A, 2A, and 3A appear automatically on the Multi-Host Definition panel.

```

      ___ Multi-Host Definition ___
                                     Entry XX of YY
Fill in a new host, change a host, or select a host for configuring.

Host ID   Adapter   Host   Hardware   Include   Host Descriptor
          Type     Attach Group     in IML
1A        -         -      -          -         _____
2A        -         -      -          -         _____
3A        -         -      -          -         _____
-         -         -      -          -         _____
-         -         -      -          -         _____
-         -         -      -          -         _____
-         -         -      -          -         _____
-         -         -      -          -         _____
-         -         -      -          -         _____
-         -         -      -          -         _____
-         -         -      -          -         _____
-         -         -      -          -         _____
-         -         -      -          -         _____
-         -         -      -          -         _____
-         -         -      -          -         _____

Select =====>

PF: 3=Quit   7=Back           11=PageFwd  12=Done

```

Figure 2-7. Multi-Host Definition Panel Example

**Step 7** Type in **1A** after Select =====> and press ENTER to advance to the next panel.

**Note:** The 1A host must be configured before any other host.

The Host Panel appears next. Figure 2-8 on page 2-14 is an example of a typical Host Panel. Note that this is **only an example**; the panel you see may differ. You may have a BSC, SDLC, X.25, X.21 Switched, Local Non-SNA, Local SNA, or Token-Ring Network. The numbers, placement, and number of questions that appear on the panel may be different from the panel shown in Figure 2-8 on page 2-14.

## Configuring the Control Disk

```

          ___ BSC ___
                                CU@/ATTACH
104- XX      108- 00000000    110- 0 0000    116-0 _
121- 01      123- 0          125- 00000000    126- 00000000  127- 000
132- 0 0 0 0  136- 0 0 0 0    137- 0 0 0 0    138- 0
141- A        165- 1          166- A          168- 0
173- 00000000  175- 000000    176- 0
317- 0        318- 0          340- 0

PF: 3=Quit      4=Default      7=Back      8=Fwd

```

Figure 2-8. Layout of a Typical Host Panel

**Step 8** The title of the panel (BSC, SDLC, X.25, X.21 Switched, Local Non-SNA, Local SNA, or Token-Ring Network) appears at the top of the panel. Compare this title with the title of the worksheet that has responses recorded on it. If the titles do not match, have the person who completed Worksheet 1–Host Attachment check the response to question 101 or have the person who completed Worksheet 2–Multi-Host Definition check the entries in the “Host Attach” field. These responses determine which host panel is displayed.

**Step 9** Type in the responses recorded on the configuration worksheet. Press PF8 to advance to the next panel.

If the:	Go to:
Token-Ring Gateway panel appears	“Token-Ring Gateway Panels” on page 2-15.
Common SNA panel appears	The “Common SNA Panel” on page 2-17.
117: Port Assignment panel appears	The “117: Port Assignment Panel” on page 2-18.
128: RTM Panel appears	The “128: RTM Panel” on page 2-20.
332: X.25 Options panel appears	The “332: X.25 Options Panel” on page 2-21.
Configure Complete panel appears	The “Configure Complete Panel” on page 2-22.



### The Token-Ring Gateway Panels:

The Token-Ring Gateway Panel (Figure 2-9) is the first of a series of panels to appear. The 940 Ring Address Assignment Panel (Figure 2-10 on page 2-16) appears next, followed by the 941 Ring Transmission Definition Panel (Figure 2-11 on page 2-16).

**Note:** The size of the screen you are using determines how much of the 940 and 941 panels you see.

```

    ___ Token-Ring Gateway ___
                                     CU@/ATTACH
900 - XXXX XXXX XX 04      905 - 1      908 - IBMLAN
911 - 0                    912 - 00

```

PF:3=Quit      4=Default      7=Back      8=Fwd      9=RtnH

Figure 2-9. Token-Ring Gateway Panel

**Step 10** Type in the responses recorded on the Token-Ring Gateway Worksheets (Worksheets 32, 33, and 34). Press PF8 after you complete each panel to advance to the next panel.

If there is a 1-digit response for a 2-digit field, or a 3-digit response for a 4-digit field, use a leading zero (for example, 02 for 2, or 0356 for 356). *You cannot use blanks.*



**The Common SNA Panel:**

**Step 11** Locate the worksheet titled “Worksheet 14 – Common SNA.” Type in the responses recorded on the worksheet.

```

          ___ Common SNA ___
          @CU/ATTACH
500 - 0          501 - _____          502 - _____
    
```

PF: 3=Quit    4=Default    7=Back    8=Fwd    9=RtnH

*Figure 2-12. Common SNA Panel*

**Step 12** Press PF8 to advance to the next panel.

<b>If the:</b>	<b>Go to:</b>
117: Port Assignment panel appears	The “117: Port Assignment Panel” on page 2-18.
128: RTM panel appears	The “128: RTM Panel” on page 2-20.
332: X.25 Options panel appears	The “332: X.25 Options Panel” on page 2-21.
Configure Complete panel appears	The “Configure Complete Panel” on page 2-22.

## The 117: Port Assignment Panel:

**Note:** The size of the screen you are using to customize determines how much of the panel you see.

117: Port Assignment

Host Addresses						CC/HOST Host Addresses							
Port	IS	1	2	3	4	5	Port	IS	1	2	3	4	5
26-00	—	—	—	—	—	—	26-01	—	—	—	—	—	—
26-02	—	—	—	—	—	—	26-03	—	—	—	—	—	—
26-04	—	—	—	—	—	—	26-05	—	—	—	—	—	—
26-06	—	—	—	—	—	—	26-07	—	—	—	—	—	—
26-08	—	—	—	—	—	—	26-09	—	—	—	—	—	—
26-10	—	—	—	—	—	—	26-11	—	—	—	—	—	—
26-12	—	—	—	—	—	—	26-13	—	—	—	—	—	—
26-14	—	—	—	—	—	—	26-15	—	—	—	—	—	—
26-16	—	—	—	—	—	—	26-17	—	—	—	—	—	—
26-18	—	—	—	—	—	—	26-19	—	—	—	—	—	—
26-20	—	—	—	—	—	—	26-21	—	—	—	—	—	—
26-22	—	—	—	—	—	—	26-23	—	—	—	—	—	—
26-24	—	—	—	—	—	—	26-25	—	—	—	—	—	—
26-26	—	—	—	—	—	—	26-27	—	—	—	—	—	—
26-28	—	—	—	—	—	—	26-29	—	—	—	—	—	—
26-30	—	—	—	—	—	—	26-31	—	—	—	—	—	—

PF: 3=Quit 4=Default 7=Back 8=Fwd 9=RtnH 11=Page Fwd

Figure 2-13. 117: Port Assignment Panel (24 lines displayed)

**Step 13** Locate Worksheet 11A–117: Port Assignment. Also check to see if you have Worksheet 11B–117: Port Assignment for AEA. You will only have 11B if you are configuring for ASCII devices.

**Step 14** Type in the responses recorded on the worksheet. Press PF11 to page to additional screens for assigning ports 27–00 through 23–07. To page back, press PF10.

Depending on the answer to question 116, Individual Port Assignment, your worksheet may have numbers either in the IS column or in the address columns, but not both. Follow the instructions below to fill in one or the other.

**Filling in the IS column:** The IS columns are preset with a response of 0 or 1. Type over the preset response with the desired value (0, 1, 2, 3, 4, or 5).

**Filling in the address columns (1, 2, 3, 4, 5):** Enter digits anywhere in the 3-digit response field. You do not need to use leading zeros.

**Note:** If you press PF4, all the screens of this panel will be restored to their default values and all the information you have entered on all the screens will be removed. For example, if you press PF4 while you are working on the second screen, the values on the both the first and second screens will be restored to their defaults.

**Step 15** Press ENTER. The customizing program checks the responses on the panel.

If all the responses are valid, the panel reappears, completed with new information (See Figure 2-14 or 2-15).

___ 117: Port Assignment ___													
LT=						116=sn an CC/HOST							
Host Addresses						Host Addresses							
Port	IS	1	2	3	4	5	Port	IS	1	2	3	4	5
26-00	1	02	___	___	___	___	26-01	0	___	___	___	___	___
26-02	1	03	___	___	___	___	26-03	0	___	___	___	___	___
26-04	4	04	05	06	07	___	26-05	0	___	___	___	___	___

Figure 2-14. 117: Port Assignment Panel When Responses Are Typed in the IS Column

If you typed valid responses in the IS column, the panel reappears with the addresses filled in sequentially.

___ 117: Port Assignment ___													
LT=						116=sn an CC/HOST							
Host Addresses						Host Addresses							
Port	IS	1	2	3	4	5	Port	IS	1	2	3	4	5
26-00	1	02	___	___	___	___	26-01	0	___	___	___	___	___
26-02	2	03	04	___	___	___	26-03	0	___	___	___	___	___
26-04	4	06	07	08	09	___	26-05	0	___	___	___	___	___

Figure 2-15. 117: Port Assignment Panel When Responses Are Typed in the Address Columns

If you typed valid addresses in the address columns, the panel reappears with the IS fields filled in. The addresses will appear as you entered them.

If a response on the 117: Port Assignment panel is not valid, it is highlighted. If you need information about correcting responses that are not valid, see “Correcting Responses” on page D-9.

**Step 16** Press PF8 to advance to the 118: Port Address Panel.

You do not enter data on this panel. It displays the addresses in hexadecimal that have now been assigned. Press PF7 if you wish to return to the 117: Port Assignment Panel.

Use PF11 and PF10 to display ports that are not already displayed. (You do not need to press ENTER to check the 118 panel.)

**Step 17** Press PF8 to advance to the next panel.

If the:	Go to:
128: RTM panel appears	The “128: RTM Panel” on page 2-20.
332: X.25 Options panel appears	The “332: X.25 Options Panel” on page 2-21.
Configure Complete panel appears	The “Configure Complete Panel” on page 2-22.

## Configuring the Control Disk

### The 128: RTM Panel:

Version A (Figure 2-16) of the 128: RTM panel appears on the screen if your first-digit response to question 127 was 1 or 2. Version B (Figure 2-17) of the 128: RTM panel appears on the screen if your first-digit response to question 127 was 3, 4, or 5.

```
___ 128: RTM ___  
  
127 = X Y @CU/HOST  
  
B1 - 00 : 01 . 0  
B2 - 00 : 02 . 0  
B3 - 00 : 05 . 0  
B4 - 00 : 10 . 0  
  
PF: 3=Quit  4=Default  7=Back  8=Fwd  9=RtnH
```

Figure 2-16. Version A of the 128: RTM Panel

```
___ 128: RTM ___  
  
127 = X Y @CU/HOST  
  
F1 - 00000000  
B1 - 00 : 01 . 0  
B2 - 00 : 02 . 0  
B3 - 00 : 05 . 0  
B4 - 00 : 10 . 0  
  
PF: 3=Quit  4=Default  7=Back  8=Fwd  9=RtnH
```

Figure 2-17. Version B of the 128: RTM Panel

**Step 18** Locate the responses recorded on Worksheet 12–128: RTM. The responses are written in *one* of three areas:

- Default Values
- Version A
- Version B

**Step 19** Look at the name that is circled on the worksheet.

- If the **Default Values** name is circled, press PF4.
- If **Version A** or **B** is circled, type in the responses recorded on the worksheet.

**Step 20** Press PF8 to advance to the next panel. If the “**Configuration Complete**” panel appears, go to “Configure Complete Panel” on page 2-22.

**The 332: X.25 Options Panel:**

The 332: X.25 Options Panel appears on your screen if your response to question 101 on the Model/Attach panel was 3.

```

          ___ 332: X.25 Options ___
                                     CC/CCC/ATTACH
400 - 00 0 0      401 - 4          402 - ___
409 - 10100100   420 - 00000000   421 - 00000000
423 - _____ 424 - _____
430 - 1          431 - 0          432 - 02      433 - 2
434 - 1          435 - 02
440 - 9          441 - ___        442 - ___
450 - XXXX      451 - XX        452 - ___   453 - 00000000
461 - ___       462 - ___       463 - ___   464 - ___
465 - ___       466 - ___
PF: 3=Quit    4=Default    7=Back    8=Fwd    9=RtnH
    
```

Figure 2-18. 332: X.25 Options Panel

**Step 21** Type in the responses recorded on Worksheet 13–X.25 Options.

If there is a 1-digit response for a 2-digit field or a 3-digit response for a 4-digit field, use a leading zero (for example, 02 for 2, or 0356 for 356). *You cannot use blanks.*

**Note:** Responses to questions **423**, **424**, and **452** may not fill the entire field. You may leave underscores where you have not typed an alphanumeric character.

## Configuring the Control Disk

**Step 22** To advance to the next panel, press PF8.

### Configure Complete Panel:

\_\_\_ Configure Complete \_\_\_

Press PF12 to save all responses  
and return to either the Multi-Host  
Panel or the Customize Control Disk  
Menu

PF: 3=Quit

7=Back

9=RtnH

12=Done

*Figure 2-19. Configure Complete Panel*

**Step 23** Press PF12 to keep the responses you have entered.

**Warning:** If you press PF3, all the new configure responses will be erased. Press PF3 only if you want to start over.

- If the **Multi-Host Definition Panel** appears, go to Step 24 on page 2-23.
- If the **Customize Control Disk Menu** appears, go to “What’s Next?” on page 2-29.



**Step 24** The Multi-Host Definition Panel filled in for hosts configured so far is displayed.

\_\_\_ Multi-Host Definition \_\_\_

Entry XX of YY

Fill in a new host, change a host, or select a host for configuring.

Host ID	Adapter Type	Host Attach	Hardware Group	Include in IML	Host Descriptor
1A		-			_____
2A	-	-	-	-	_____
3A	-	-	-	-	_____
-					_____
-					_____
-					_____
-					_____
-					_____
-					_____
-					_____
-					_____
-					_____
-					_____
-					_____
-					_____

Select =====>

PF: 3=Quit    7=Back                    11=PageFwd    12=Done

Figure 2-20. Multi-Host Definition Panel Example

Locate the worksheets for the next Host ID you must configure. You must completely configure one host before you proceed to the next. The possible additional Host IDs are 2A, 3A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 2B, 2C, 2D, 3B, 3C or 3D. Host 2A must be configured before Hosts 2B–2D, and Host 3A must be configured before Hosts 3B–3D. Fill in the information required for the appropriate Host ID, type in the Host ID after Select =====>, and press ENTER.

**Note:** To accommodate a potentially large number of Host IDs, PF10 and PF11 paging keys are available on the multi-host definition panel. If necessary, you may page forward by pressing PF11 to enter additional Host IDs. PF10 allows you to page backward.

**Important**

If you have previously completed the Multi-Host Definition Panel and are now changing it, you must still process only one host at a time:

- Type in the changes for one host.
- Type the Host ID after Select =====>.
- Press Enter.

Do **NOT** type in the changes and press PF12. If you do, your changes will not be accepted.

After pressing ENTER, continue with Step 25 on page 2-24 and proceed as directed.

## Configuring the Control Disk

**Step 25** Next, a secondary Host Panel appears. Figure 2-21 is an example of a typical secondary Host Panel. Note that this is **only an example**; the panel you see will depend on responses entered on the Multi-Host Definition Panel.

```

                SDLC
          2A = SDLC HOST SYSTEMS                SDLC
104 - XX   105 -00                            110 - 0 0000   116 - 0 __
                                                125 - 00000000   127 - 0 0
                                                139 - 0 0
                                                150 - 0       165 - 1
                                                179 - 0 0 0
213 - 1   215 - 00000  220 - 0
310 - 0   313 - 0     317 - 0   318 - 0       340 - 0
365 - 0   370 - 0
PF: 3=Quit      4=Default      7=Back      8=Fwd
```

Figure 2-21. Layout of a Typical Secondary Host Panel

The title of the panel (BSC, SDLC, SNA, X.25, X.21 Switched, or Token-Ring Network) appears at the top of the panel. The numbers, placement, and number of questions that appear on the panel may also be different from the panel shown in Figure 2-21.

**Note:** Secondary worksheets, such as Secondary BSC, Secondary SDLC, Secondary X.25, Secondary Local SNA, Secondary X.21 Switched, and Secondary Token-Ring Network are comparable to BSC, SDLC, X.25, Local SNA, X.21, and Token-Ring Network worksheets, respectively.

**Step 26** Compare the title of the panel on your screen with the title of the worksheet. (If the titles do not match, the person who completed the worksheet should check the response for this host on the Multi-Host Definition Worksheet. This response determines which host panel is displayed.)

**Step 27** Type in the responses recorded on the configuration worksheet. Press PF8 to advance to the next panel.

**Note:** At this point, secondary host panels appear. Only the tops of these panels will be shown because the same panels have already been shown in this procedure for the primary host.

If the:	Go to:
Token-Ring Gateway panel appears	"Token-Ring Gateway Panels."
117: Port Assignment panel appears	The "117: Port Assignment Panel" on page 2-26.
128: RTM panel appears	The "128: RTM Panel" on page 2-27.
332: Secondary X.25 Options panel appears	The "332: Secondary X.25 Options Panel" on page 2-28.
Configure Complete panel appears	"Configure Complete Panel" on page 2-28.

### Token-Ring Gateway Panels:

The Token-Ring Gateway Panel (Figure 2-22) is the first of a series of panels to appear. The 940-Ring Address Assignment Panel (Figure 2-23) appears next, followed by the 941-Ring Transmission Definition Panel (Figure 2-24).

```

___ Token-Ring Gateway ___
                                CU@/ATTACH
  
```

Figure 2-22. Token-Ring Gateway Panel (partial representation)

**Note:** Screen Size: The size of the screen you are using determines how much of the 940 and 941 panels you see.

**Step 28** Type in the responses recorded on the Token-Ring Gateway Worksheet (Worksheets 32, 33, and 34). Press PF8 after you complete each panel to advance to the next panel.

```

___ 940: Ring Address Assignment ___
                                CU@/ATTACH
                                ENTRY XXX of YYY
  
```

Figure 2-23. 940: Ring Address Assignment Panel (partial representation)

When filling in this panel, use a leading zero if you have a 1-digit response for a 2-digit field, or a 3-digit response for a 4-digit field (for example, 02 for 2, or 0356 for 356). **You cannot use blanks.**

```

___ 941: Ring Transmission Definition ___
                                CU@/ATTACH
                                ENTRY XXX of YYY
  
```

Figure 2-24. 941: Ring Transmission Definition Panel (partial representation)

The F and W fields contain defaults that depend on the response to the T (type) field specified in the 940: Ring Address Assignment panel.

**Step 29** Press PF8 to bring up the next panel.

If the:	Go to:
Port Assignment panel appears	The "117: Port Assignment Panel" on page 2-26.
128: RTM Panel appears	The "128: RTM Panel" on page 2-27.
Secondary X.25 Options panel appears	"X.25 Options Panel" on page 2-28.
Configure Complete panel appears	"Configure Complete Panel" on page 2-28.

### The 117: Port Assignment Panel:

```

          _____ 117: Port Assignment _____
LT=
          Host Addresses          116=sn an          CC/HOST
Port IS  1  2  3  4  5      Port IS  1  2  3  4  5
  
```

Figure 2-25. 117: Port Assignment Panel (partial representation)

**Step 30** Locate Worksheet 11A–117: Port Assignment for this host. (The worksheet will be identified by the Host ID.) Type in any responses recorded on the worksheet.

Use PF11 and PF10 to display ports that are not displayed and to page back.

**Step 31** Press ENTER. The customizing program checks the responses on the panel. If all the responses are valid, the panel reappears completed with new information. If you have any responses that are not valid, you can correct them as described in "Correcting Responses" on page D-9.

**Step 32** Press PF8 to advance to the 118: Port Address panel. (If you wish to return to the 117: Port Assignment Panel, press PF7. To see the responses that have been assigned, press ENTER.)

Use PF11 and PF10 to display ports that are not already displayed.

**Step 33** Press PF8 to advance to the next panel.

If the:	Go to:
128: RTM Panel appears	The "128: RTM Panel" on page 2-27.
Secondary X.25 Options panel appears	"X.25 Options Panel" on page 2-28.
Configure Complete panel appears	"Configure Complete Panel" on page 2-28.

**The 128: RTM Panel:**

Version A (Figure 2-26) of the 128: RTM panel appears on the screen if your first-digit response to question 127 was 1 or 2. Version B (Figure 2-27) of the 128: RTM panel appears on the screen if your first-digit response to question 127 was 3, 4, or 5.

```

___ 128: RTM ___
                                     127 = X Y @CU/HOST

                                     B1 - 00 : 01 . 0
    
```

Figure 2-26. Version A of the 128: RTM Panel (partial representation)

```

___ 128: RTM ___
                                     127 = X Y @CU/HOST

                                     F1 - 00000000
    
```

Figure 2-27. Version B of the 128: RTM Panel (partial representation)

**Step 34** Locate the responses recorded on Worksheet 12–128: RTM for this host. The responses are written in *one* of three areas:

- Default Values
- Version A
- Version B

**Step 35** Look at the name that is circled on the worksheet.

- If the **Default Values** name is circled, press PF4.
- If **Version A** or **B** is circled, type in the responses recorded on the worksheet.

**Step 36** Press PF8 to advance to the next panel.

If the:	Go to:
Secondary X.25 Options panel appears	“X.25 Options Panel” on page 2-28.
Configure Complete panel appears	“Configure Complete Panel” on page 2-28.

## Configuring the Control Disk

### The 332: X.25 Options Panel:

If the 332: X.25 Options Panel (Figure 2-28) is not on your screen, go to “Configure Complete Panel” on page 2-28.

The 332: X.25 Options Panel appears on your screen if your response to question 101 on the Model/Attach panel was 3.

```
___ 332: X.25 Options ___  
                                &CU/ATTACH
```

Figure 2-28. 332: X.25 Options Panel (partial representation)

**Step 37** Type in the responses recorded on Worksheet 13S–Secondary X.25 Options for this host. Press PF8 to advance to the next panel.

### Configure Complete Panel:

```
___ Configure Complete ___
```

```
Press PF12 to save all responses  
and return to either the Multi  
Host Definition Panel or the  
Customize Control Disk Menu
```

PF: 3=Quit

7=Back

9=RtnH

12=Done

Figure 2-29. Configure Complete Panel

**Step 38** Press PF12 to save the configuration responses for this host.

**Warning:** If you press PF3, all the new configure responses will be erased. Press PF3 only if you want to start over.

If you pressed PF12, the Multi-Host Definition panel appears:

- If you have additional Host IDs to configure, return to Step 24 on page 2-23. (You have additional Host IDs to configure if you have any of the worksheets 1 through 14 or 25 through 27 that you have not used.)
- If you have configured all of the required Host IDs, press PF12 again and go to “What’s Next?” If you get a panel of error messages after you press PF12 from the Multi-Host Definition panel, correct the errors as described in “Correcting Interconfigure Errors” on page E-8 or see the person who filled out the worksheets.

### What’s Next?

With the Customize Control Disk Menu on your screen:

- You can continue customizing by selecting a different customizing procedure.

Use the following table to locate the procedure for the option you want.

If you want to:	You have worksheets:	Go to page:
Define Devices	28 through 31	2-30
Merge RPQs	N/A (you have an RPQ diskette)	2-39
Modify Keyboards	Keyboard Worksheets	2-46
Define AEA	17 through 27	2-62

- You can complete customizing the Control disk.

**Warning:** To complete customizing the Control disk, the responses you made must be transferred from the Utility disk to the Control disk, *or they will not be permanently saved.*

**For a Controller with more than one Disk Drive:** Press PF12. When the Master Menu appears, the transfer is complete.

**For a Controller with one Disk Drive:** Press PF12. A processing message appears at the bottom of the menu. Follow the instructions as they appear on the screen. When the Master Menu appears, the transfer is complete.

---

### Defining Devices – PAM, LTA and VPD

The Printer Authorization Matrix (PAM), Logical Terminal Assignment (LTA), and Prompts for Extended VPD options (from the Device Definition Panel) assist with the assignment of devices that connect to the controller. Each contains default values for these assignments.

```
___ Device Definition ___  
  
800  Printer Authorization Matrix (PAM) - 0 0  
801  Logical Terminal Assignment (LTA) - 0  
802  Extended Vital Product Data (VPD) - 0
```

PF: 3=Quit 8=Fwd

*Figure 2-30. Device Definition Panel*

**Printer Authorization Matrix** allows you to define which printers you can use with the clustered display stations. The functions involved are local copy, host printing, and shared printing operations.

**Logical Terminal Assignment** allows you to define which host sessions individual display stations can access.

**Prompts for Extended VPD** present panels with information relating to the controller and each attached device.



## PF Keys for Defining Devices

You call up a specific function of the customizing program when you press a PF key. Some or all of these PF keys may appear on panels during the device definition procedure.

PF Keys:	Function:
PF3	PF3 (Quit) quits the procedure, erases all the new responses you have entered on the device definition panels, and displays the Master Menu. If you press PF3 from the Customize Control Disk Menu, your responses from the device definition procedure are erased and you are returned to the Master Menu.
PF4	PF4 (Default) For PAM panels, PF4 erases the responses from all of the PAM panels. The screen clears. The first PAM panel, with printer entries 1—5, appears with no responses entered on it.  For LTA panels, PF4 assigns default values to the panels.
PF7	PF7 (Back) brings up the previous panel. When you press PF7, the responses you have entered on the current panel are saved temporarily, even if the panel is not completed. When you return to the partially completed panel, you can complete it.
PF8	PF8 (Forward) checks the responses on the current panel for errors, and if there are none, causes the next panel to appear on the screen. If there are any errors, an error message appears on the message line. You cannot advance to the next panel until all errors are corrected. When you press PF8, the responses you have entered on the current panel are saved temporarily, even if the panel is not completed.
PF10	PF10 (Page Back) checks the entire panel, which is made up of a series of screens, for errors, and pages back to the previous screen while displaying any errors that are encountered.  <b>Note:</b> If you are using a keyboard without PF10, use the Cursor Select Key.
PF11	PF11 (Page Forward) checks the entire panel, which is made up of a series of screens, for errors, and pages forward to the next screen while displaying any errors that are encountered.  <b>Note:</b> If you are using a keyboard without a PF11, use the PA1 key.
PF12	PF12 (Done), when pressed at the end of the Define Devices procedure, checks all the responses you have entered. When the responses on all the device definition panels are valid, PF12 saves them on the Utility disk and then displays the Customize Control Disk Menu on your screen. The responses for the Define Devices procedure are not permanently saved until you press PF12 from the Customize Control Disk Menu and the Master Menu reappears.  <b>Note:</b> If you are using a keyboard without a PF12, use PA2.

**Note:** PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

### Define Devices Procedure

**Before you perform this procedure:**

- You need to have previously selected the “Customize the Control Disk” option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not:
  - See page 1-4 for Master Menu instructions.
  - See page 7-3 for Identifying Keyboard instructions.
  - See page 2-4 for Verify Drive instructions.
- If you have a new unused controller with a fixed disk or have just installed a new fixed disk and have not yet initialized the new disk, you must do so now. (See page G-3 for instructions.)
- If you are not familiar with the Define Devices option or its PF Key functions, you may wish to review the introductory material and the PF Key table beginning on page 2-30.
- You will need a completed Worksheet 28—Device Definition and one of the following completed worksheets:
  - Worksheet 29—Printer Authorization Matrix
  - Worksheet 30—Logical Terminal Assignment
  - Worksheet 31—Extended Vital Product Data
- You may also need a copy of the *3174 Status Codes*.

It is a good idea to keep records of the customization responses you will enter. At any point during customization, you can preserve a record of your responses by printing the completed customization screen. If you would like more information about this option, see “Local Copy” on page C-3.

The Customize Control Disk Menu is displayed on your screen. (See Figure 2-31 on page 2-33.)

```

      ___ Customize Control Disk Menu ___

Select option; press ENTER

Option   Description
  1      Configure
  2      Define Devices
  3      Merge RPQs
  4      Modify Keyboards
  5      Define AEA

Select ==> 2

PF: 3=Quit          12=File
  
```

Figure 2-31. Customize Control Disk Menu (select Define Devices)

**Step 1** Type **2** after Select ==>.

**Step 2** Press ENTER. The Device Definition Panel appears on your screen.

```

      ___ Device Definition ___

800  Printer Authorization Matrix (PAM) - 0 0
801  Logical Terminal Assignment (LTA) - 0
802  Extended Vital Product Data (VPD) - 0

PF: 3=Quit    8=Fwd
  
```

Figure 2-32. Device Definition Panel

- Step 3** Locate Worksheet 28–Device Definition and type in the responses recorded on it. Press the PF8 key.
- If the PAM panel appears, continue with Step 4.
  - If the LTA panel appears, go to Step 7 on page 2-35.
  - If the Extended VPD panel appears, go to Step 10 on page 2-36.

**Step 4** Locate Worksheet 29–Printer Authorization Matrix.

**Note:** The size of the screen you are using determines how much of the panel you see.

Entry	Printer Port	PAM Definition	
		Mode	Class
		7	8
		01234	56789 012345
1	___ - ___	-	.....
2	___ - ___	-	.....
3	___ - ___	-	.....
4	___ - ___	-	.....
5	___ - ___	-	.....

Entry	3270 Display Ports						ASCII Display Ports		
		1	2	3	HG 21	HG 22	HG 23		
	HG 01234 56789	01234 56789	01234 56789	01	01234567	01234567	01234567		
1	26	.....	.....	.....	.....	.....	.....		
	27	.....	.....	.....	.....	.....	.....		
2	26	.....	.....	.....	.....	.....	.....		
	27	.....	.....	.....	.....	.....	.....		
3	26	.....	.....	.....	.....	.....	.....		
	27	.....	.....	.....	.....	.....	.....		
4	26	.....	.....	.....	.....	.....	.....		
	27	.....	.....	.....	.....	.....	.....		
5	26	.....	.....	.....	.....	.....	.....		
	27	.....	.....	.....	.....	.....	.....		

Select ==>  
 <NNNN-Message Area  
 PF: 3=Quit 4=Default 7=Back 8=Fwd 11=Page Fwd

Figure 2-33. Example of the PAM Definition Panel

**Warning:** If the first 2 digits of the printer port number (prefix number) are not filled in or are deleted, all the information about the panel that relates to that entry is deleted after ENTER, PF10, PF11, or PF12 is pressed.

- To advance to the next panel, press PF11.
- To return to a previous panel, press PF10.
- To locate a specific printer entry without having to scroll forward or backward, use the LOCATE command. For example, to locate entry 16, type **L16** in the select field and press ENTER. Entry 16 and the next 4 entries appear on your screen.

Any number between 1 and 47 can be used with the LOCATE command.

**Step 5** Type in the responses from the worksheet and press ENTER.

If you have any responses that are not valid, you can correct them as described in “Correcting Responses” on page D-9.

**Step 6** When you have completed your entries, press PF8.

If there are errors on the PAM, an error message appears on the message line of the panel currently displayed. You can move backward or forward among the panels, correcting the highlighted errors. When the errors are corrected, press PF8 again.

One of the following panels now appears: the LTA panel, the Extended VPD panel, or the Device Definition Complete panel.

If the:	Go to:
LTA panel appears	Step 7.
Extended VPD panel appears	Step 10 on page 2-36.
Device Definition Complete panel appears	Step 13 on page 2-37.

**Step 7** Locate Worksheet 30—Logical Terminal Assignment. Type in the responses from the worksheet. The number of lines displayed depends on your terminal's screen size. If you have assignments for ports 27-00 through 27-31, you need to page to the second screen. Press PF11 to page forward and PF10 to page back. The first screen of the panel on a 24-line screen is shown in Figure 2-34.

```

      _____ Logical Terminal Assignment _____
Enter your LT Assignment for each port.                               801=X

  PORT  LT1 LT2 LT3 LT4 LT5          PORT  LT1 LT2 LT3 LT4 LT5
26-00 -  ___ ___ ___ ___ ___        26-01 -  ___ ___ ___ ___ ___
26-02 -  ___ ___ ___ ___ ___        26-03 -  ___ ___ ___ ___ ___
26-04 -  ___ ___ ___ ___ ___        26-05 -  ___ ___ ___ ___ ___
26-06 -  ___ ___ ___ ___ ___        26-07 -  ___ ___ ___ ___ ___
26-08 -  ___ ___ ___ ___ ___        26-09 -  ___ ___ ___ ___ ___
26-10 -  ___ ___ ___ ___ ___        26-11 -  ___ ___ ___ ___ ___
26-12 -  ___ ___ ___ ___ ___        26-13 -  ___ ___ ___ ___ ___
26-14 -  ___ ___ ___ ___ ___        26-15 -  ___ ___ ___ ___ ___
26-16 -  ___ ___ ___ ___ ___        26-17 -  ___ ___ ___ ___ ___
26-18 -  ___ ___ ___ ___ ___        26-19 -  ___ ___ ___ ___ ___
26-20 -  ___ ___ ___ ___ ___        26-21 -  ___ ___ ___ ___ ___
26-22 -  ___ ___ ___ ___ ___        26-23 -  ___ ___ ___ ___ ___
26-24 -  ___ ___ ___ ___ ___        26-25 -  ___ ___ ___ ___ ___
26-26 -  ___ ___ ___ ___ ___        26-27 -  ___ ___ ___ ___ ___
26-28 -  ___ ___ ___ ___ ___        26-29 -  ___ ___ ___ ___ ___
26-30 -  ___ ___ ___ ___ ___        26-31 -  ___ ___ ___ ___ ___

PF: 3=Quit  4=Default  7=Back  8=Fwd          11=Page Fwd
  
```

Figure 2-34. Logical Terminal Assignment Panel

**Note:** To return to a previous panel, press PF7.

**Step 8** Press ENTER.

If you have any responses that are not valid, you can correct them as described in "Correcting Responses" on page D-9.

**Step 9** When you have completed your entries, press PF8. If there are errors on the LTA, an error message appears on the message line of the panel currently displayed. You can move backward or forward among the panels, correcting the highlighted errors. When the errors are corrected, press PF8 again.

<b>If the:</b>	<b>Go to:</b>
Extended VPD panel appears	Step 10.
Device Definition Complete panel appears	Step 13 on page 2-37.

**Step 10** Locate Worksheet 31–Extended Vital Product Data Panel. Type in the responses recorded on the worksheet.

\_\_\_ Prompts for Extended VPD \_\_\_

Type the words below that you want to appear as "prompts" on the "Update Extended Vital Product Data" panel (displayed during online tests or terminal setup).

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_

PF: 3=Quit    4=Default    7=Back    8=Fwd

*Figure 2-35. Extended Vital Product Data Panel*

**Step 11** Press ENTER.

If you have any responses that are not valid, you can correct them as described in "Correcting Responses" on page D-9.

**Step 12** When you have completed your entries, press PF8 to save the Extended VPD panel.

If there are errors on the Extended VPD Panel, an error message appears on the message line of the panel displayed. When the errors are corrected, press PF8 again.

The Device Definition Complete Panel (Figure 2-36 on page 2-37) appears on your screen. Continue with Step 13 on page 2-37.

\_\_\_ Device Definition Complete \_\_\_

Press PF12 to save all responses  
and return to Customize Control  
Menu

PF: 3=Quit

7=Back

12=Done

*Figure 2-36. Device Definition Complete Panel*

**Step 13** Press PF12. The Customize Control Disk Menu appears on your screen.

\_\_\_ Customize Control Disk Menu \_\_\_

Select option; press ENTER

Option	Description
1	Configure
2	Define Devices
3	Merge RPQs
4	Modify Keyboards
5	Define AEA

Select ==>

PF: 3=Quit

9=Check

12=File

*Figure 2-37. Customize Control Disk Menu*

### What's Next?

With the Customize Control Disk Menu on your screen:

- You can continue to customize by selecting a different customizing procedure.

Use the following table to locate the procedure for the option you want.

<b>If you want to:</b>	<b>You have worksheets:</b>	<b>Go to page:</b>
Configure	1 through 14 or 32 through 34	2-11
Merge RPQs	N/A (you have an RPQ diskette)	2-39
Modify Keyboards	Keyboard Worksheets	2-46
Define AEA	17 through 27	2-62

- You can complete customizing the Control disk.

**Warning:** The Customizing responses you made must be transferred from the Utility disk to the Control disk, *or they will not be permanently saved.*

**For a Controller with more than one Disk Drive:** Press PF12. When the Master Menu appears, the transfer is complete.

**For a Controller with one Disk Drive:** Press PF12. A processing message appears at the bottom of the menu. Follow the instructions as they appear on the screen. When the Master Menu appears, the transfer is complete.



## Merging RPQs

An RPQ (Request for Price Quotation) is an alteration or addition to the functional capabilities provided by the controller microcode. An RPQ diskette, purchased from IBM, can contain the microcode for 1 to 30 RPQs. RPQs are merged to the Utility disk and are transferred to the Control disk. A maximum of 10 RPQs can reside on a Control disk.

```

                ___ RPQ Utility ___
1 = Include in IML
2 = Omit from IML
3 = Delete
S = Select by Adapter

Utility Disk
1  8K1111.0
2  8K2222.0
3  8K3333.0
S  8K4444.0
-  .....
-  .....
-  .....
-  .....
-  .....
-  .....

RPQ Identifier:_____
RPQ Parameter List:
- - - - -

Available drives: 1 2      Utility ==> 1  RPQ ==> 2
PF:3=Quit      6=Select Adapter      9=Merge      12=Process
    
```

Figure 2-38. RPQ Utility Panel (Merge Procedure)

**RPQ Identifier:** The RPQ Identifier field is optional. The Identifier field allows you to name sets of merged RPQs for Central Site Processing (See Figure 2-40 on page 2-42.) The name used in the Identifier field should be associated with the merged RPQ data.

The name can contain up to 8 alphanumeric characters (the first character must be uppercase alphabetic and no blanks or spaces between characters are allowed). If your location is using Central Site Customizing, you should obtain the name for the identifier field from the person controlling your Central Site Library. Refer to the *Central Site Customizing User's Guide* for more information.

See the following examples of names that are valid and not valid.

Example	
Names (Valid):	Names (Not Valid):
RPQSET1_	1ARPQSET
RPQSET1A	RPQSET 1

## Merging RPQs

**RPQ Parameter List Field:** The RPQ Parameter List field lists the parameters required by an RPQ. (See Figure 2-40 on page 2-42.) The documentation available with the RPQ describes the parameters required. Duplicate RPQs cannot exist on the same disk. If no data exists in the parameter list of the Utility disk, the field is padded with underscores.

## PF Keys for Merge RPQs

You call up a specific function of the customizing program by pressing a PF key. A PF key is operational only if it appears on the panel you are using.

Use the following table to reference Merge RPQ PF key functions.

<b>PF Keys:</b>	<b>Function:</b>
PF3	PF3 (Quit) quits the procedure and erases all the responses that have not been processed by pressing PF12.
PF6	PF6 (Select Adapter) displays the Host Adapter RPQ selection panel. This allows you to assign an RPQ to a specific host adapter.
PF9	PF9 (Merge) invokes the RPQ Merge panel while the RPQ Utility panel is displayed. You may press PF9 (New RPQ Dsk) to merge RPQs from any additional disks.  <b>Note:</b> If you are using a keyboard without a PF9, use the Attention (ATTN) key.
PF12	PF12 (Process) processes the options specified during this procedure. The RPQ process is not completed until you press PF12 from the Customize Control Disk Menu to transfer the RPQs from the Utility disk to the Control disk.  <b>Note:</b> If you are using a keyboard without PF12, use PA2.

**Note:** PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

## Merge RPQs Procedure

### Before you perform this procedure:

- You need to have previously selected the “Customize the Control Disk” option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not:
  - See page 1-4 for Master Menu instructions.
  - See page 7-3 for Identifying Keyboard instructions.
  - See page 2-4 for Verify Drive instructions.
- If you are not familiar with the Merge RPQ option or its PF Key functions, you may wish to review the introductory material and the PF Key table on pages 2-39 and 2-40.
- You will need a diskette drive for the required RPQ diskettes. You may also need a copy of *3174 Status Codes*.

**Warning:** If you have been issued a **new** Control Disk, you must perform the Microcode Upgrade procedure on the Control disk **before** you perform the Merge RPQs procedure. Performing the Microcode Upgrade erases all the RPQs found on the disk being upgraded. For information about the Microcode Upgrade procedure, see Chapter 5, “Upgrading Microcode.”

It is a good idea to keep records of the customization responses you will enter. At any point during customization, you can preserve a record of your responses by printing the completed customization screen. If you would like more information about this option, see “Local Copy” on page C-3.

The Customize Control Disk Menu is displayed on your screen.

```

      _____ Customize Control Disk Menu _____
Select option; press ENTER

Option   Description
  1      Configure
  2      Define Devices
  3      Merge RPQs
  4      Modify Keyboards
  5      Define AEA

Select ==> 3

PF: 3=Quit                12=File
  
```

Figure 2-39. Customize Control Disk Menu with Merge RPQs Selected

## Merging RPQs

**Step 1** Type **3** after Select ==>.

**Step 2** Press ENTER on the keyboard. The RPQ Utility panel (Figure 2-40) appears on your screen.

If any RPQs reside on the Control disk, they are transferred to the Utility disk and are displayed under the Utility disk field.

```

                                ___ RPQ Utility ___
1 = Include in IML
2 = Omit from IML
3 = Delete
S = Select by Adapter

Utility Disk

1  8K1111.0
2  8K2222.0
3  8K3333.0
S  8K4444.0
-  .....
-  .....
-  .....
-  .....
-  .....
-  .....

RPQ Identifier: _____
RPQ Parameter List:
- - - - -

Available drives: 1 2      Utility ==> 1  RPQ ==> 2
PF:3=Quit      6=Select Adapter      9=Merge      12=Process
```

Figure 2-40. RPQ Utility Panel (Merge Procedure)

**Step 3** Verify drives.

The RPQ Utility panel (Figure 2-40) with the Available drives selection fields is on your screen. The Available drives field identifies the drives available in your controller, and the default selections for the Utility and RPQ disks. The diskette drives (the only drives you will be using) are numbered 1 and 2.

**Note:** On multiple-drive controllers, the Utility ==> drive field is defaulted to the drive used for the IML, and cannot be altered.

If you do not want to use the default drive selection, after RPQ ==>, type the number for the diskette drive you want to use.

**Step 4** Press Enter.

**Step 5** Continue with one of the following options:

- To include, omit, or delete an RPQ from the Utility disk, go to Step 6 on page 2-43.
- To merge RPQs from an RPQ diskette to a Utility disk, go to Step 14 on page 2-44.

- Step 6** To change the option of selected RPQs, move the cursor to the entry you wish to change and type over the displayed value in the option field.
- Type a **1** to indicate RPQs to be included at IML.
  - Type a **2** to indicate RPQs to be omitted at IML.
  - Type a **3** to indicate RPQs to be deleted.
  - Type an **S** to indicate RPQs that must be associated with a specific adapter.
- Step 7** If you wish to name this set of merged RPQs, fill in the Identifier field with a valid name (see “RPQ Identifier” on page 2-39).
- Step 8** If any RPQs require parameters, enter this information into the Parameter List field. (Refer to the documentation that accompanies the RPQ for these parameters.)
- Step 9** To process the options you have selected:
- If you entered a **1**, **2**, or a **3**, press PF12 and continue with Step 10.
  - If you entered an **S**, press PF6 and go to Step 11.
- Step 10** Merge or exit.
- To Merge RPQs from an RPQ diskette to a Utility disk, go to Step 14 on page 2-44.
  - To exit this procedure, go to “What’s Next?” on page 2-45.
- Step 11** The Host Adapter RPQ Selection panel appears with pre-assigned values obtained from your previous entries on the RPQ Utility panel.

```

      Host Adapter RPQ Selection
      1 = Include in IML
      2 = Omit from IML

      RPQs on          Hardware Group
      Utility Disk     Pri  51  52
1  8K1111.0           1   1   1
2  8K2222.0           2   2   2
3  8K3333.0           3   3   3
S  8K4444.0           1   1   1
-  .....
-  .....
-  .....
-  .....
-  .....
-  .....

PF: 3=Quit                      12=Process
    
```

Figure 2-41. Host Adapter RPQ Selection Panel

## Merging RPQs

**Step 12** For the RPQs marked with an S, enter a **1** or a **2** in the fields labeled PRI 51 52 to include or omit the RPQ for a particular host adapter.

The field labeled PRI is associated with the following controller adapters:

- Channel Adapter (16)
- Type 1 and Type 2 Communication Adapters (11)
- Token-Ring Adapter (31)

The fields labeled 51 and 52 are associated with the Type 1 and Type 2 Concurrent Communication Adapters.

**Step 13** Press PF12 to process the selected options.

**Step 14** Press PF9 to invoke the merge option of the RPQ procedure. See Figure 2-42.

```

          ___ RPQ Merge ___

1 = Include in IML          4 = Merge
2 = Omit from IML
3 = Delete

Utility Disk                RPQ Diskette

- .....          4  8Kaaaa.0  - .....  - .....
- .....          4  8Kbbbb.0  - .....  - .....
- .....          - .....      - .....  - .....
- .....          - .....      - .....  - .....
- .....          - .....      - .....  - .....
- .....          - .....      - .....  - .....
- .....          - .....      - .....  - .....
- .....          - .....      - .....  - .....
- .....          - .....      - .....  - .....
- .....          - .....      - .....  - .....

Available drives: 1 2 3 4      Utility =====> 1  RPQ =====> 2

PF: 3=Quit          9=New RPQ Dsk      12=Process
  
```

Figure 2-42. RPQ Merge Panel

**Step 15** After you have inserted the RPQ diskette, press ENTER.

**Step 16** To select RPQs for merging onto the Utility disk, move the cursor to the RPQ entry you wish to merge. Type a **4** in the options field.

**Step 17** Press PF12 to process the options.

**For a Controller with One Disk Drive:** If no errors are detected, you are prompted to insert a Utility diskette. Insert the diskette and press ENTER. The RPQ Utility panel is displayed, showing all the merged RPQs on the Utility diskette and indicating that they have been included.

**For a Controller with More Than One Disk Drive:** If no errors are detected, the merged RPQs are displayed under the Utility disk portion of the screen on the RPQ Utility panel.

## What's Next?

You can:

- Continue to select RPQ options: See Step 6 on page 2-43 or Step 14 on page 2-44.

- Quit the Merge RPQs Procedure and continue customizing the Control Disk.

Then, use the following table to locate the procedure for the option you want.

<b>If you want to:</b>	<b>You have worksheets:</b>	<b>Go to page:</b>
Configure	1 through 14 or 32 through 34	2-11
Define Devices	28 through 31	2-30
Modify Keyboards	Keyboard Worksheets	2-46
Defining AEA	17 through 27	2-62

- You can complete customizing the Control disk.

**Warning:** If you have completed customizing the Control disk, the responses you made must be transferred from the Utility disk to the Control disk, *or they will not be permanently saved.*

**For a Controller with more than one Disk Drive:** Press PF12. When the Master Menu appears, the transfer is complete.

**For a Controller with one Disk Drive:** Press PF12. A processing message appears at the bottom of the menu. Follow the instructions as they appear on the screen. When the Master Menu appears, the transfer is complete.

### Modifying Keyboards

Select this procedure when you want to tailor keyboard layouts to be used on IBM display stations with modifiable keyboards. Keyboard layouts can be tailored to meet specific user applications requirements. Figure 2-43 shows the steps used in defining keyboard layouts.

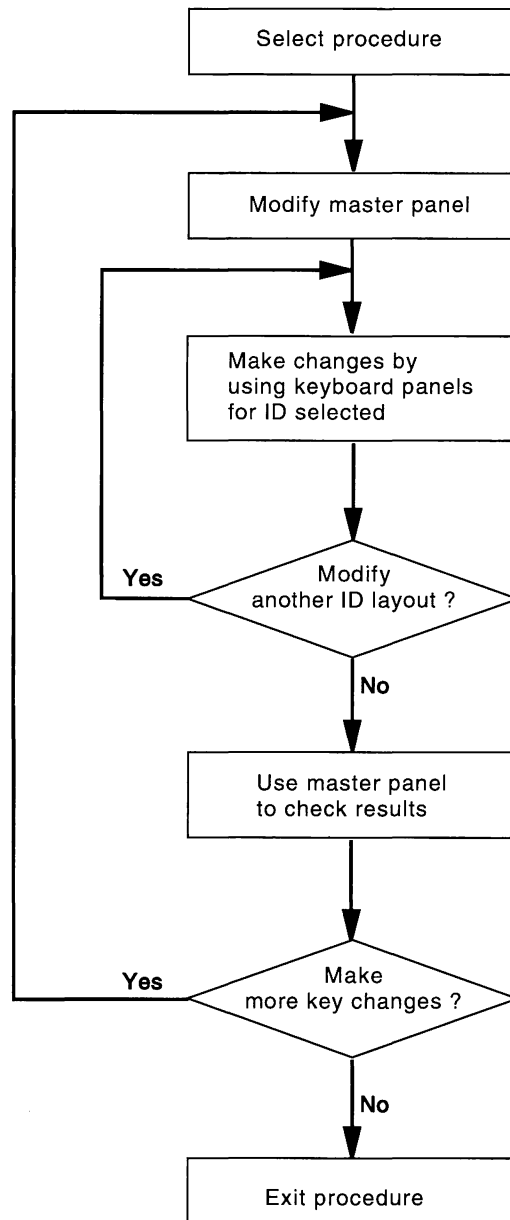


Figure 2-43. Steps for Defining Keyboard Layouts



## Modify Keyboards Procedure

**Before you perform this procedure:**

- You need to have previously selected the “Customize the Control Disk” option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not:
  - See page 1-4 for Master Menu instructions.
  - See page 7-3 for Identifying Keyboard instructions.
  - See page 2-4 for Verify Drive instructions.
- If you have a new unused controller with a fixed disk or have just installed a new fixed disk and have not yet initialized the new disk, you must do so now. (See page G-3 for instructions.)
- You will also need the completed Keyboard Layout Worksheets.
- You may also need a copy of *3174 Status Codes*.

The Customize Control Disk Menu is displayed on your screen.

```

      ___ Customize Control Disk Menu ___

Select option; press ENTER

Option   Description
  1      Configure
  2      Define Devices
  3      Merge RPQs
  4      Modify Keyboards
  5      Define AEA

Select ==> 4

PF: 3=Quit           12=File
    
```

Figure 2-44. Customize Control Disk Menu (Select Modify Keyboards)

**Step 1** Type 4 after Select ==>.

## Modifying Keyboards

### Step 2 Press ENTER.

The Modify Keyboard Master Panel (Figure 2-45) appears on your screen.

```

                                     76nn
L: 00

ID      KB      KP      M
A:      0      0      0
B:      0      0      0
C:      0      0      0
D:      0      0      0

N: _____          909 - 0
```

Figure 2-45. Modify Keyboard Master Panel

The cursor is positioned at the language (L) field entry. Entries on the master panel show the ID, the keyboard (KB) type, and the keypad (KP) type for each previously defined layout. An R in the modify (M) field indicates that this keyboard layout has been modified; an entry in the name (N) field identifies this set of keyboard layouts.

Use the following table to match field with description.

Table 2-1 (Page 1 of 2). Field/Description Table

Fields:	Description:
76nn	4-digit error code (displayed only if an error is detected). Refer to <i>3174 Status Codes</i> for more information.
L	Keyboard language number
ID	Keyboard identification
KB	0 - No keyboard type specified 1 - Converged Typewriter keyboard 2 - Converged Data Entry keyboard 3 - Converged APL keyboard 4 - Enhanced Typewriter keyboard
KP	0 - Default National Language keypad 1 - Data Entry keypad 2 - Program Function keypad
N	Name field. Up to 8 alphanumeric characters (the first character is uppercase alphabetic, and no blanks or spaces between characters are allowed). Refer to the naming conventions in the <i>3174 Central Site Customizing User's Guide</i> .

Table 2-1 (Page 2 of 2). Field/Description Table

Fields:	Description:
M	0 - Not a modified keyboard layout 1 - Modify standard keyboard layout 2 - Make more changes to a modified layout 3 - View keyboard panels R - Keyboard layout was modified
909	0 - Original value – Entries not confirmed 1 - Entries confirmed – Go to keyboard panels F - Definition process finished – Exit procedure

Use the information at the top of the completed worksheet to fill in the Modify Keyboard Master Panel.

You can change the keyboard language number by typing the new 2-digit language number over the current entry. The *3174 Planning Guide* lists the keyboard languages and I/O interface codes that are supported. All keyboards must use the same language, and this language number must be specified during customizing (question 121 : Keyboard Language and I/O Interface Code.)

If you assign a new language number, status code 7604 is displayed when ENTER is pressed. This is not an error, but it is a warning. If you confirm this entry by pressing ENTER, all previously modified layouts are erased, and all new keyboard layouts are loaded. The master panel is reset to all zeros except for the L field.

### Updating the Master Panel:

- Step 3** To change the keyboard language, type the new 2-digit language number and press ENTER. Otherwise, continue with Step 4.
- Step 4** Fill in the KB, KP, and M fields for each ID that you are defining. If all entries are equal to 0 for a particular ID, no keyboard layout exists for that ID.
- Step 5** Type one of the following codes in the row for each ID in the column under KB:

**KB=1** means that the keyboard to be modified for this ID is a converged typewriter keyboard layout.

**KB=2** means that the keyboard to be modified for this ID is a converged data entry keyboard layout.

**KB=3** means that the keyboard to be modified for this ID is a converged APL keyboard layout.

**Note:** You can modify an APL keyboard only if the display station at which you are performing this procedure has APL read-only storage (ROS).

**KB=4** means that the keyboard to be modified for this ID is an Enhanced Typewriter keyboard layout.

## Modifying Keyboards

**Step 6** Type one of the following codes in the column under KP:  
**KP=0** means that the default national language keypad is used for this ID.

**KP=1** means that the data entry keypad is used for this ID.

**KP=2** means that the PF keypad is used for this ID.

**Step 7** Modify code (0, 1, 2, or 3) in the column under M:

**If M equals 0 when the master panel is first displayed, you can:**

- Leave the M field 0. Do this if you do not want to define a keyboard for this ID (that is, KB=0 and KP=0 for this ID), or if you do not want to make any key changes but only want to specify a unique keyboard/keypad combination for this ID. (For example, if you wanted a Converged Typewriter KB=1 with a Data Entry Keypad KP=1 with no other changes, you would enter KB=1 KP=1 M=0.)
- Change the M field to a 1 if you want to modify the keyboard layout for this ID.

**If M equals R when the master panel is first displayed, the keyboard layout for this ID has previously been modified. You can do one of the following procedures with this already modified keyboard:**

- Set M equal to 0 to erase the keyboard modifications for this ID.
- Set M equal to 1 to define a new keyboard layout. Replacing an R with a 1 in the M field erases all previous changes made to this keyboard layout.
- Set M equal to 2 to make changes to a modified keyboard layout.
- Set M equal to 3 to view the modified keyboard layout. The keyboard panels are displayed, but cannot be altered in any way.

**Step 8** Fill in the optional N (name) field to identify this set of modified keyboards. The name is useful when you are storing or retrieving sets of modified keyboards from the central site library. Refer to the *3174 Central Site Customizing User's Guide* for information about naming conventions and library member names.

For an explanation of a valid name, see the description of the fields discussed earlier in this step. The following example shows names that are valid and not valid.

**Example**

```
KBDSET1A (valid)
1A KBSET (not valid)
```

**Step 9** Check the master panel to be sure all entries are correct. Move the cursor to the 909 field at the bottom of the master panel, and change the 0 to a 1. Press ENTER.

**Step 10** **If an error is detected**, all fields that contain errors are highlighted. The cursor is placed at the location of the first error, and a status code is displayed at the top of the screen. Refer to *3174 Status Codes* to determine the type of error that was made.

Correct the error and press ENTER.

If there is more than one error, after the first error is corrected, the cursor is placed at the location of the next error and its error code is displayed at the top of the screen. Repeat this step until all errors are corrected.

**Step 11** Continue with one of the following options:

- If you do not want to make any changes now (all M fields are equal to 0, 3, or R), go to “Use the Master Panel to Check Your Results” on page 2-60 or to “Exit from the Procedure” on page 2-60.
- If you do want to make changes, go to “Modify Keyboard Panels Description.”

### Modify Keyboard Panels Description

**Warning:** When modifying keyboards panels that have characters **unique** to APL2\* and CECP, you need to use a device that supports those characters. Otherwise, characters may be misrepresented or displayed as blanks.

When you have finished updating the master panel, keyboard panel 1 is displayed. Because the entire keyboard cannot be shown on a single screen, there are 3 keyboard panels for each ID. See Figures 2-46 through 2-48.

On the top left of each keyboard panel is the mode selection row. It is divided into three groups: the keyboard group (0, 1, 2), the shift group (3, 4), and the function group (5, 6, 7, 8). Only one selection is allowed in each group for each key change.

Note that you can perform all of the same kinds of changes while working on a particular keyboard ID after selecting these operations only once. However, each time a different shift or type of change is desired, new selections must be made in the mode selection row.

The information at the bottom left of the screen is the ID, the keyboard (KB) type, and the keypad (KP) type for the keyboard layout that is being defined.

On the bottom right of the keyboard panel is the 910 field. It shows which keyboard panel is displayed. It is used:

- To change from one keyboard panel to another by entering **1**, **2**, or **3**.  
For 2-language keyboards, enter 0 or 1 in the 910 subfield, to specify the secondary or primary language nomenclature, respectively.
- To cancel the pending key-change operation by entering an **A**.
- To end the modification of the current keyboard ID by entering an **F**.

If an error is detected at any time during a key change, the error number is displayed at the top of the screen. Refer to *3174 Status Codes* for keyboard panel error codes. Correct the error and continue.

# Modifying Keyboards

**Keyboard Group**    **Shift Group**    **Function Group**    (Not displayed)  
**012**            **34**            **56789**

~ \	 1	@ 2	# 3	\$ 4	% 5	- 6	& 7	* 8	( 9	) 0	- =	+ =	<<- <<-
->  ->	Q q	W w	E e	R r	T t	Y y	U u	I i	O o	P p	! ?	 \	<- <-
Schick Schick Schick	A a	S s	D d	F f	G g	H h	J j	K k	L l	: ;	" '	} {	
UpSh UpSh UpSh	> <	Z z	X x	C c	V v	B b	N n	M m	, ,	. .	? /	DwnSh DwnSh DwnSh	
Reset Reset DvCnl		Alt Alt Alt	Space Space Space						Alt Alt Alt		Enter Enter Enter		

**ID - A    KB - 1    KP - 1**

910 - 1

Figure 2-46. Typical Converged Typewriter Keyboard Panel 1 — Main Part of Keyboard

**012    34    5678**

Attn Attn SysRq	Clear Clear	Dup PA1	FldMk PA2 ChgSc	PA3 PA3 PA3			,	Space Space
CrSel CrSel	ErInp	l<- l<-	Ins Ins	Del Del WdDel	1 1	2 2	3 3	->l ->l
ExSel ExSel	ErEOF ErEOF		CrUp CrUp Back		4 4	5 5	6 6	- -
Print Print Ident	Test	<- <- <<-	CrHom	-> -> ->>	7 7	8 8	9 9	Enter Enter
			CrDwn CrDwn Fwd		0 0	.	.	

**ID - A    KB - 1    KP - 1**

910 - 2

Figure 2-47. Typical Converged Typewriter Keyboard Panel 2 — Keys to Right and Left of Main Keyboard

012 34 56789

P13 P13	P14 P14	P15 P15	P16 P16	P17 P17	P18 P18	P19 P19	P20 P20	P21 P21	P22 P22 CrBnk	P23 P23 CrAlt	P24 P24 Click
P1 P1	P2 P2	P3 P3	P4 P4	P5 P5	P6 P6	P7 P7	P8 P8	P9 P9	P10 P10	P11 P11	P12 P12

ID - A KB - 1 KP - 1

910 - 3

Figure 2-48. Typical Converged Typewriter Keyboard Panel 3 — Program Function Keys Above Main Keyboard

### Keyboard Group (0, 1, 2)

- 0 = The desired change is on a converged typewriter, converged data entry typewriter, enhanced typewriter, or the typewriter functions on a converged APL keyboard.
- 1 = The desired change applies only to the APL key functions on a converged APL keyboard.
- 2 = The desired change applies to both the typewriter and APL functions on a converged APL keyboard.

### Shift Group (3, 4)

- 3 = Full-key change.
- 4 = Single-shift change.

### Function Group (5, 6, 7, 8)

- 5 = Copy from I/O interface code table.
- 6 = Exchange 2 functions.
- 7 = Copy a function to another key.
- 8 = Delete a key function.

### 910 Field Entries

- 1 = Display keyboard panel 1.
- 2 = Display keyboard panel 2.
- 3 = Display panel keyboard 3.
- A = Cancel (abort) the pending key-change operation.
- F = All changes have been finished for this ID.

### 910 Subfield Entries (displayed for 2-language keyboards)

- 0 = Display keyboard layout with secondary language nomenclature.
- 1 = Display keyboard layout with primary language nomenclature.

## Modifying Keyboards

### Make Mode Selection Row Entries

These selections have already been made on the worksheet; refer to the Keyboard, Shift, and Function Groups section of the Keyboard Changes Chart.

Start each key change by replacing the proper numbers with an X in the mode selection row as follows.

Make only one selection in each group in the mode selection row:

**Step 1** The first three numbers (0, 1, 2) are the keyboard group. If the keyboard type specified on the master panel is a converged typewriter (KB=1), data entry typewriter (KB=2), or enhanced typewriter (KB=4), the 0 is highlighted. Do not make an entry in this field; go to Step 3 of this section.

**Step 2** If the keyboard type specified on the master panel is an APL keyboard (KB=3), and the display station at which you are running the procedure has an APL ROS, the entire keyboard group (0, 1, 2) is highlighted:

- To change only the Typewriter key functions, type **X** over the 0.
- To change only the APL mode functions, type **X** over the 1.
- To change both Typewriter and APL mode functions, type **X** over the 2.

If you type **X** over the 2, the Typewriter keys are displayed when keyboard panel 1 is on the screen. The APL functions for the keys modified are changed along with the Typewriter functions. To display the APL functions to verify that they were changed, type an **X** over the 1 in the keyboard group and press ENTER.

**Step 3** Numbers 3 and 4 are the shift group.

- To change the entire key (upper-shift, lower-shift, and alternate-shift positions), type **X** over the 3.
- To choose a single-shift position change, type **X** over the 4.

**Step 4** Numbers 5, 6, 7, and 8 are the function group. Type an **X** over the appropriate number to select the type of key change.

5—Copy from the I/O interface code table.

6—Exchange 2 functions.

7—Copy a function from one key to another key.

8—Delete a key function.

**Step 5** Press ENTER.

**Step 6** If an error is detected, place the cursor at the location of the first group in error. The status code of the first error is displayed at the top of the screen, and all groups with errors are highlighted. Refer to *3174 Status Codes* to determine the type of error that was made.

Correct the error and press ENTER.

Repeat this step until all errors in the mode selection row are corrected.



**Step 7** Proceed with the key change as follows:

- Copy from the I/O interface code table (see “Perform a Copy from the I/O Interface Code Table”).
- Exchange 2 functions (see “Exchange the Function of Two Keys” on page 2-56).
- Copy a function to another key (see “Copy from One Key to Another” on page 2-57).
- Delete a function (see “Delete a Key Function” on page 2-59).

### Perform a Copy from the I/O Interface Code Table

After the mode selection row is updated, the number 5 in the mode selection row is highlighted and I/O=00 is displayed to the right of the mode selection row. The cursor is positioned under the first 0.

**Step 1** Type the hexadecimal code that you are assigning over the 00. The I/O Code is located on the worksheet in the I/O Code field. (If the I/O code is not present in this field, the code for the I/O Code Character you are copying can be found in the *Character Set Reference*.)

For example: The hexadecimal code for the plus sign (+) is defined as 4E in the English (U.S.) I/O Interface Code Table.

For 2-language keyboards, enter the **0** or **1** in the 910 subfield to specify the secondary or primary language layout, respectively. Modifications made to keys during this copy procedure do not affect the keys on the hidden keyboard layout. For more information about 2-language modifications, refer to the *3174 Planning Guide*.

**Step 2** Press ENTER.

The hexadecimal code is translated into its corresponding character, followed by -->. In the example, I/O=4E becomes I/O=+ -->.

**Step 3** If the key to be changed is not displayed on the screen, call up the needed keyboard panel by typing its number (**1**, **2** or **3**) after the 910 and pressing ENTER.

**Note:** Entering an **A** after the 910 cancels the current key change operation.

**Step 4** Move the cursor to the key that you are changing (the *To* key on the worksheet).

For a full-key change, place the cursor anywhere within the key.

For a single-shift change, place the cursor in the proper shift row within the key.

**Step 5** Press ENTER.

The character representation for the hexadecimal I/O code that you selected is placed on the key and highlighted.

**Step 6** If you have another change for the current ID in which all the mode selection row entries are identical with those highlighted, it is not necessary to make entries in the mode selection row for your next change. Start from Step 1.

## Modifying Keyboards

To make a different type of key change for the current keyboard ID, return to “Modify Keyboard Panels Description” on page 2-51.

**Note:** You can start another key change from any keyboard panel (1, 2, or 3).

**Step 7** If you have finished defining the current keyboard ID, replace the number after the 910 with an F and press ENTER.

If another keyboard is to be defined, keyboard panel 1 of the next keyboard ID is displayed. Return to “Modify Keyboard Panels Description” on page 2-51.

If all the keyboard IDs specified in the master panel have been defined, the master panel is displayed. Go to “Use the Master Panel to Check Your Results” on page 2-60, or go to “Exit from the Procedure” on page 2-60.

### Exchange the Function of Two Keys

After the mode selection row is updated, the number 6 in the mode selection row is highlighted and the cursor is at the home position in the mode selection row.

**Step 1** If neither key (*From* or *To*) that you are going to exchange is displayed on the current keyboard panel, call up the needed panel by typing its number (1, 2 or, 3) after the 910 at the bottom of the screen.

For 2-language keyboards, enter the 0 or 1 in the 910 subfield to specify the secondary or primary language layout, respectively. For more information about 2-language modifications, refer to the *3174 Planning Guide*.

Press ENTER.

**Step 2** Move the cursor to the first key to be changed (the *From* key on the worksheet).

For a full-key exchange, place the cursor anywhere within the key.

For a single-shift exchange, place the cursor anywhere in the proper shift row within the key.

**Step 3** Press ENTER.

The selected key is highlighted and is displayed to the right of the mode selection row, followed by <-->. to signify that an exchange is pending. If full-key mode was selected, all the shift states (upper/lower/alternate) of the selected key are displayed to the right of the mode selection row.

**Step 4** If the other key to be exchanged (the *To* key) is not displayed on the screen, call up the needed keyboard panel by typing its number (1, 2, or 3) after the 910 and pressing ENTER.

**Note:** Entering an A after the 910 cancels the current key change operation.

- Step 5** Move the cursor to the other key to be exchanged (the *To* key on the worksheet).
- For a full-key exchange, place the cursor anywhere on the key.
- For a single-shift exchange, place the cursor in the proper shift row on the key.
- Step 6** Press ENTER.
- The exchange is made. The keys that were exchanged are highlighted if they are on the current keyboard panel. For 2-language keyboards, if a modification occurred on both the secondary and primary language layouts, a 2 appears to the right of the mode selection row.
- Step 7** If you have another change for the current ID in which **all** the mode selection row entries are identical with those highlighted, it is not necessary to make entries in the mode selection row for your next change. Start from Step 1 on page 2-56.
- To make a different type of key change for the current keyboard ID, return to "Modify Keyboard Panels Description" on page 2-51.
- Note:** You can start another key change from any keyboard panel (1, 2, or 3).
- Step 8** If you have finished defining the current keyboard ID, replace the number after the 910 with an **F** and press ENTER.
- If another keyboard is to be defined, keyboard panel 1 of the next keyboard ID is displayed. Return to "Modify Keyboard Panels Description" on page 2-51.
- If all the keyboard IDs specified in the master panel have been defined, the master panel is displayed. Go to "Use the Master Panel to Check Your Results" on page 2-60 or to "Exit from the Procedure" on page 2-60.

### Copy from One Key to Another

After the mode selection row is updated, the number 7 in the mode selection row is highlighted and the cursor is at the home position in the mode selection row.

- Step 1** If the key that you are going to copy (the *From* key) is not displayed on the current keyboard panel, call up the needed panel by typing its number (1, 2, or 3) after the 910.
- For 2-language keyboards, enter the 0 or 1 in the 910 subfield to specify the secondary or primary language layout.
- Press ENTER.
- Step 2** Move the cursor to the key to be copied (the *From* key on the worksheet).
- For a full-key copy, place the cursor anywhere within the key.
- For a single-shift copy, place the cursor in the proper shift row within the key.

## Modifying Keyboards

**Step 3** Press ENTER.

The selected key is highlighted and is displayed to the right of the mode selection row, followed by ==> to signify that a copy is pending. If full-key mode was selected, all the shift states (upper/lower/alternate) of the selected key are displayed to the right of the mode selection row.

**Step 4** If the key to which you are copying the *From* key (the *To* key) is not displayed on the screen, call up the needed keyboard panel by typing its number (1, 2, or 3) after the 910 and pressing ENTER.

**Note:** Entering an **A** after the 910 cancels the current key change operation.

**Step 5** Move the cursor to the destination key (the *To* key on the worksheet).

For a full-key copy, place the cursor anywhere within the key.

For a single-shift copy, place the cursor in the proper shift row within the key.

**Step 6** Press ENTER.

The copy is made, and the changed key is highlighted.

For 2-language keyboards, if a modification occurred on both the secondary and primary language layouts, a 2 appears to the right of the mode selection row.

**Step 7** If you have another change for the current ID in which *all* the mode selection row entries are identical with those highlighted, it is not necessary to make entries in the mode selection row for your next change. Start from Step 1 on page 2-57.

To make a different type of key change for the current keyboard ID, return to "Modify Keyboard Panels Description" on page 2-51.

**Note:** You can start another key change from any keyboard panel (1, 2, or 3).

**Step 8** If you have finished defining the current keyboard ID, replace the number after the 910 with an **F** and press ENTER.

If another keyboard is to be defined, keyboard panel 1 of the next keyboard ID is displayed. Return to "Modify Keyboard Panels Description" on page 2-51.

If all the keyboard IDs specified in the master panel have been defined, the master panel is displayed. Go to "Use the Master Panel to Check Your Results" on page 2-60 or to "Exit from the Procedure" on page 2-60.

### Delete a Key Function

After the mode selection row is updated, the number 8 in the mode selection row is highlighted and the cursor is at the home position in the mode selection row.

**Step 1** If the key that you are going to delete (the *From* key) is not displayed on the current keyboard panel, call up the needed panel by typing its number (1, 2, or 3) after the 910 at the bottom of the screen.

For 2-language keyboards, enter a 0 or 1 in the 910 subfield to specify the secondary or primary language layout, respectively.

Press ENTER.

**Step 2** Move the cursor to the key to be deleted (the *From* key on the worksheet).

To delete a full key, place the cursor anywhere within the key.

To delete a single-shift position, place the cursor in the proper shift row within the key.

**Step 3** Press ENTER.

The key is deleted, and the line to the right of the key is highlighted.

For 2-language keyboards, if a modification occurred on both the secondary and primary language layouts, a 2 appears to the right of the mode selection row.

**Step 4** If you have another change for the current ID in which *all* the mode selection row entries are identical with those highlighted, it is not necessary to make entries in the mode selection row for your next change. Start from Step 1.

To make a different type of key change for the current keyboard ID, return to "Modify Keyboard Panels Description" on page 2-51.

**Note:** You can start another key change from any keyboard panel (1, 2, or 3).

**Step 5** If you have finished defining the current keyboard ID, replace the number after the 910 with an F and press ENTER.

Another keyboard has to be defined, keyboard panel 1 of the next keyboard ID is displayed. Return to "Modify Keyboard Panels Description" on page 2-51.

If all the keyboard IDs specified in the master panel have been defined, the master panel is displayed. Go to "Use the Master Panel to Check Your Results" on page 2-60 or to "Exit from the Procedure" on page 2-60.

### Use the Master Panel to Check Your Results

When you have completed all the keyboard changes, the master panel is again displayed. The 0's, 1's, and 2's in the modify (M) field have been replaced by Rs for the new keyboards that have been defined.

**Note:** If you want to make more changes, go back to page 2-48 and follow the steps.

To view one or more of the keyboards again:

**Step 1** Enter a **3** in the modify fields of the IDs that you want to check. A 3 in the modify field allows you to view the keyboard panels, but you cannot make any additional changes now.

**Step 2** Change the 0 to the right of the 909 to a 1.

**Step 3** Press ENTER.

Keyboard panel 1 for the first ID with a 3 in the M field is displayed. There are now only 2 numbers in the mode selection row, 0 and 1. These numbers are used only if the keyboard type for this ID is APL (KB=3 on the master panel), and if the display station at which you are performing this procedure has APL read-only storage (ROS). You can display the APL key functions by entering an **X** over the 1. To return to the Typewriter layout, enter an **X** over the 0.

**Step 4** Look at the other keyboard panels for this ID by entering the corresponding number (1, 2, or 3) in the 910 field.

For 2-language keyboards, enter a 0 or 1 in the 910 subfield to view the secondary or primary language keyboard layout, respectively.

**Step 5** When you have finished checking the panels for that ID, type an **F** in the 910 field.

**Step 6** Press ENTER.

If there is another keyboard ID with a 3 in the M field, keyboard panel 1 for that ID is displayed.

**Step 7** After all the keyboards requested have been displayed, the master panel is displayed again.

To make more keyboard changes, return to page 2-48.

### Exit from the Procedure

After completing all the keyboard definitions, exit from the keyboard definition procedure by replacing the 0 to the right of the 909 with an F. Press ENTER.

The master panel is removed from the screen, and the definition procedure is completed.

## What's Next?

With the Customize Control Disk Menu on your screen:

- You can continue customizing by selecting a different customizing procedure.

Use the following table to locate the appropriate procedure.

<b>If you want to:</b>	<b>You have worksheets:</b>	<b>Go to page:</b>
Configure	1 through 14 or 32 through 34	2-11
Define Devices	22 through 24	2-30
Merge RPQs	N/A (you have an RPQ diskette)	2-39
Define AEA	17 through 27	2-62

- You can complete customizing the Control disk.

**Warning:** The Customizing responses you made must be transferred from the Utility disk to the Control disk, *or they will not be permanently saved.*

**For a Controller with more than one Disk Drive:** Press PF12. When the Master Menu appears, the transfer is complete.

**For a Controller with one Disk Drive:** Press PF12. A processing message appears at the bottom of the menu. Follow the instructions as they appear on the screen. When the Master Menu appears, the transfer is complete.

---

### Defining AEA

Select Define AEA from the Master Menu when you initially customize a Control disk for the Asynchronous Emulation Adapter (AEA). You can also use it if you want to change any information entered previously while customizing the Control disk. Type over or delete any previous responses you want to change.

### Define AEA Menu Options

Define AEA provides you with three options from the AEA Menu.

```

                ___ AEA Menu ___

Select Option; press ENTER

Option   Description
  1      Configure AEA
  2      Define UDT
  3      Define UDX

Select====>

PF: 3=Quit                                12=Done
```

*Figure 2-49. AEA Menu*

**Configure AEA:** Select Configure AEA if you want to type in the responses to the numbered questions on the AEA Configure Worksheets 17 through 21.

**Define UDT:** Define UDT allows you to create a User-defined Terminal definition for an ASCII Terminal Type being attached to the controller. Use worksheets 22 through 24.

**Define UDX:** Define UDX allows you to create or modify one or more User-Defined Translate Table definitions based on an FPC Translate Table definition. Use worksheets 25 through 27.



Use the following table to locate the appropriate procedure.

If you want to:	You have worksheets:	Go to page:
Configure AEA	17 through 21	2-65
Define UDT	22 through 24	2-72
Define UDX	25 through 27	2-81

## PF Keys for Define AEA

You call up a specific function of the customizing program by pressing a PF key. As you follow the Define AEA procedure, your choice of PF keys varies from panel to panel. Some or all of these PF keys may appear on panels during the Define AEA procedure.

Use the following table to reference Define AEA PF key functions.

PF Keys:	Function:
PF3	PF3 (Quit) is used to quit the procedure, and erases your responses made during the present session from all the panels. You must press this key twice to exit the AEA procedure. After pressing this key once, you receive a message asking you if you are sure that you wish to quit this procedure. Press this key a second time to return to the Customize Control Disk Menu. If you press PF3 from the Customize Control Disk Menu, your responses from the configuration process are erased and you are returned to the Master Menu.
PF4	PF4 (Default) erases your responses from the current panel. The screen clears, and the same panel, filled with default responses, reappears.  <b>Warning:</b> If one panel consists of multiple screens (for instance, the AEA Port Set to Port Set Map), PF4 will erase all the screens and enter the default responses. For example, if you press PF4 on the second screen, the responses on both the first and second screens will be erased and the default values will reappear.
PF7	PF7 (Back) brings up the previous panel. When you press PF7, the responses you have entered on the current panel are saved temporarily, even if the panel is not completed. When you return to the partially completed panel, you can complete it.
PF8	PF8 (Forward) checks the responses on the current panel for errors. If there are none, the next panel appears on the screen. If there are any errors, an error message appears on the message line. You cannot advance to the next panel until all errors are corrected. When you press PF8, the responses you have entered on the current panel are saved temporarily, even if the panel is not completed.
PF10	PF10 (Page Back) checks the entire panel, which is made up of a series of screens, for errors, and pages back to the previous screen while displaying any errors that are encountered.  <b>Note:</b> If you are using a keyboard without PF10, use the Cursor Select Key.
PF11	PF11 (Page Forward) checks the entire panel, which is made up of a series of screens, for errors, and pages forward to the next screen while displaying any errors that are encountered.  <b>Note:</b> If you are using a keyboard without PF11, use the PA1 key.

## Defining AEA

<b>PF Keys:</b>	<b>Function:</b>
PF12	PF12 (Done), when pressed at the end of the Defining AEA procedure, saves all the responses you have entered on all the previous panels. The AEA Configure Complete appears. The responses for the AEA Configure procedure are not permanently saved until you press PF12 from the Customize Control Disk Menu and the Master Menu reappears.

**Note:** If you are using a keyboard without PF12, use the PA2 key.

**Note:** Keyboards with PF13 through 24 are mapped into PF1 through 12. For example, PF13 is PF1 and PF15 is PF3.

## Configure AEA Procedure

### Before you perform this procedure:

- You need to have previously selected the “Customize the Control Disk” option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not:
  - See page 1-4 for Master Menu instructions.
  - See page 7-3 for Identifying Keyboard instructions.
  - See page 2-4 for Verify Drive instructions.
- If you have a new unused controller with a fixed disk or have just installed a new fixed disk and have not yet initialized the new disk, you must do so now. (See page G-3 for instructions.)
- If you are not familiar with the Define AEA PF Key functions, you may wish to review the PF Key table on page 2-63.
- You may also need a copy of *3174 Status Codes*.

It is a good idea to keep records of the customization responses you will enter. At any point during customization, you can preserve a record of your responses by printing the completed customization screen. If you would like more information about this option, see “Local Copy” on page C-3.

The Customize Control Disk Menu is displayed on your screen.

```

      ___ Customize Control Disk Menu ___

Select option; press ENTER

Option   Description
  1      Configure
  2      Define Devices
  3      Merge RPQs
  4      Modify Keyboards
  5      Define AEA

Select ==> 5

PF: 3=Quit          12=File
  
```

Figure 2-50. Customize Control Disk Menu

**Step 1** Type 5 after Select ==>.

**Step 2** Press ENTER on the keyboard.

## Defining AEA

The AEA Menu (Figure 2-51 on page 2-66) is displayed on your screen.

```

      ___ AEA Menu ___

Select Option; press ENTER

Option      Description
  1         Configure AEA
  2         Define UDT
  3         Define UDX

Select===>1

PF: 3=Quit                                12=File
```

Figure 2-51. AEA Menu

**Step 3** Type **1** after Select **===>** for the Configure AEA Option. Press ENTER.

```

      ___ AEA Configure ___

700 - - 0
702 - - 1
703 - - 0
710 - 000000000 711 - 000000000 712 000000000 713 000000000

PF:3=Quit      4=Default      8=Fwd      12=Done
```

Figure 2-52. AEA Configure Panel

**Step 4** Locate Worksheet 17—AEA Configure.

**Step 5** Type each response written on the worksheet in the fields that follow the question number.

**Step 6** Press ENTER.

If you have any responses that are not valid, you can correct them as described in “Correcting Responses” on page D-9.

**Step 7** Press PF8 to advance to the next panel.

**Step 8** Locate Worksheet 18—AEA Port Set.

\_\_ AEA Port Set \_\_

Name	Session Limit	Port Type	Modem Type	Password
1 = _____	_____	_____	_____	_____
2 = _____	_____	_____	_____	_____
3 = _____	_____	_____	_____	_____
4 = _____	_____	_____	_____	_____
5 = _____	_____	_____	_____	_____
6 = _____	_____	_____	_____	_____
7 = _____	_____	_____	_____	_____
8 = _____	_____	_____	_____	_____
9 = _____	_____	_____	_____	_____
10 = _____	_____	_____	_____	_____
11 = _____	_____	_____	_____	_____
12 = _____	_____	_____	_____	_____
13 = _____	_____	_____	_____	_____
14 = _____	_____	_____	_____	_____
15 = _____	_____	_____	_____	_____
16 = _____	_____	_____	_____	_____

PF:3=Quit      4=Default      7=Back      8=Fwd

Figure 2-53. AEA Port Set Panel

**Step 9** Type in the responses recorded on the worksheet.

**Note:** If you clear out the name field on a Port Set entry, the rest of the responses are erased when you press ENTER or PF8.

**Step 10** Press ENTER.

If you have any responses that are not valid, you can correct them as described in “Correcting Responses” on page D-9.

**Step 11** Press PF8 to advance to the next panel.

**Step 12** Locate Worksheet 19—Port-to-Port Set Map.

\_\_\_ AEA Port to Port Set Map \_\_\_

Type the port set number to group the 3174 ports.

3270 Ports	0	1	2	3	4	5	6	7
26-00 to 26-07	—	—	—	—	—	—	—	—
26-08 to 26-15	—	—	—	—	—	—	—	—
26-16 to 26-23	—	—	—	—	—	—	—	—
26-24 to 26-31	—	—	—	—	—	—	—	—

Port Sets

1 =	2 =	3 =	4 =
5 =	6 =	7 =	8 =
9 =	10 =	11 =	12 =
13 =	14 =	15 =	16 =

PF: 3=Quit      4=Default      7=Back      8=Fwd      11=Page Fwd

Figure 2-54. AEA Port-to-Port Set Map Panel—Page 1

**Step 13** Type in the responses recorded on the worksheet. Press PF11 to page to the next screens of the panel as needed to enter information for ports 27-00 through 23-07. Press PF10 to page back.

**Step 14** Press ENTER.

**Step 15** Press PF8 to advance to the next panel.

**Step 16** Locate the AEA Station Set Worksheets (worksheets numbered 20) for the AEA Station Set panel.

\_\_\_ AEA Station Set \_\_\_

1	721 -	_____			722 -	___	723 -	_____		725 -	1			
	731 -	1	732 -	1	733 -	0	734 -	___	735 -	0	736 -	1	737 -	___
	741 -	000	742 -	015	743 -	1	744 -	0	745 -	0	746 -	0	0	___
	751 -	752 -		_____										
	761 -	1	762 -	1	763 -	1	764 -	1	765 -	0				
	771 -	1	772 -	1	773 -	1	774 -	1	775 -	1	776 -	1		
	781 -	0	782 -	0	783 -	066	784 -	-1	785 -	11111000	786 -	132	787 -	0

2	721 -	_____			722 -	___	723 -	_____		725 -	1			
	731 -	1	732 -	1	733 -	0	734 -	___	735 -	0	736 -	1	737 -	___
	741 -	000	742 -	015	743 -	1	744 -	0	745 -	0	746 -	0	0	___
	751 -	752 -		_____										
	761 -	1	762 -	1	763 -	1	764 -	1	765 -	0				
	771 -	1	772 -	1	773 -	1	774 -	1	775 -	1	776 -	1		
	781 -	0	782 -	0	783 -	066	784 -	-1	785 -	11111000	786 -	132	787 -	0

PF: 3=Quit      7=Back      8=Fwd      11=Page Forward

Figure 2-55. AEA Station Set Panel

**Step 17** Type in the responses recorded on the AEA Station Set Worksheet; the worksheets are numbered to the left of question 721.

**Step 18** Press PF11.

The customizing program checks the responses.

- If responses are compatible, you advance to the next AEA Station Set page.
- If responses are incompatible, a message indicating the type of error is displayed in the message area. The AEA Station Set numbers in conflict are displayed in the error message. The question numbers with contradictory responses are highlighted on each AEA Station Set Panel in error. Correct the first error as described in "Correcting Responses" on page D-9 and correct each additional error until no errors are displayed. After responses that are not valid have been corrected, press PF8 to advance to the next AEA Station Set Panel.

**Note:** If you wish to change the responses on a previous page of the AEA Station Set Panel, press PF10 to page back. Press PF11 to check the new responses and advance to the next AEA Station Set Panel page. **If you plan to change all the responses on an AEA Station Set, clear the Station Set name question (721) and press ENTER.** Clearing the name field clears all other entries on the AEA Station Set.

**Step 19** Repeat Step 16 on page 2-68 through Step 18 for each AEA Station Set Worksheet, but **be sure to enter the AEA Station Sets in numeric order** (for example, AEA Station Set 1, AEA Station Set 2, and so on).

**Step 20** When you have typed in all the responses on all the AEA Station Set worksheets, press PF8 to advance to the AEA Default Destination Panel (Figure 2-56).

The size of the screen you are using to customize determines how much of the panel you see.

**Note:** The Station Set Name and Session Limit fields are filled in by the customizing program according to previous responses.

## Defining AEA

\_\_\_ AEA Default Destination \_\_\_

Station Set	Station Set Name	Session Limit	Session				
			LT1	LT2	LT3	LT4	LT5
1		0	---	---	---	---	---
2		0	---	---	---	---	---
3		0	---	---	---	---	---
4		0	---	---	---	---	---
5		0	---	---	---	---	---
6		0	---	---	---	---	---
7		0	---	---	---	---	---
8		0	---	---	---	---	---
9		0	---	---	---	---	---
10		0	---	---	---	---	---
11		0	---	---	---	---	---
12		0	---	---	---	---	---
13		0	---	---	---	---	---
14		0	---	---	---	---	---
15		0	---	---	---	---	---

PF:3=Quit    7=Back    8=Fwd    11=Page Fwd

Figure 2-56. AEA Default Destination Panel (24 lines displayed)

**Step 21** Locate Worksheet 21—AEA Default Destination for the AEA Default Destination panel.

**Step 22** Type in the responses recorded on the AEA Default Destination Worksheet.

**Step 23** Press ENTER.

**Step 24** To advance to the last AEA Default Destination panel, press PF11. If you have any responses that are not valid, you can correct them as described in “Correcting Responses” on page D-9.

**If you wish to change the responses on the previous AEA Default Destination panel, press PF10 to page back to the panel.**

Press PF11 to check your new responses.



**Step 25** When you have typed in all the responses on the AEA Default Destination panels, press PF8 to advance.

\_\_\_ AEA Configure Complete \_\_\_

Press PF12 to save all responses  
and return to the AEA Menu

PF: 3=Quit

7=Back

12=Done

*Figure 2-57. AEA Configure Complete Panel*

**Warning:** If you press PF3, the responses you have entered on **all** previous panels within this procedure will be erased.

**Step 26** Press PF12 to save all the panels completed during the AEA Configure procedure. This information is stored on the Utility disk.

**If you have Define AEA worksheets that you have not used,** use the following table to locate the appropriate procedure.

**If you do not have any remaining Define AEA worksheets,** go to "What's Next?" on page 2-86.

<b>If you want to:</b>	<b>You have worksheets:</b>	<b>Go To:</b>
Define UDT	22 through 24	Step 3 on page 2-73
Define UDX	25 through 27	Step 3 on page 2-82

### Define UDT Procedure

**Before you perform this procedure:**

- You need to have previously selected the “Customize the Control Disk” option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not:
  - See page 1-4 for Master Menu instructions.
  - See page 7-3 for Identifying Keyboard instructions.
  - See page 2-4 for Verify Drive instructions.
- If you have a new unused controller with a fixed disk or have just installed a new fixed disk and have not yet initialized the new disk, you must do so now. (See page G-3 for instructions.)
- If you are not familiar with the Define AEA PF Key functions, you may wish to review the PF Key table on page 2-63.
- You may also need a copy of *3174 Status Codes*.

The Customize Control Disk Menu is displayed on your screen.

```
          ___ Customize Control Disk Menu ___  
  
Select option; press ENTER  
  
Option   Description  
  1      Configure  
  2      Define Devices  
  3      Merge RPQs  
  4      Modify Keyboards  
  5      Define AEA  
  
Select ==> 5  
  
PF: 3=Quit          12=File
```

Figure 2-58. Customize Control Disk Menu

**Step 1** Type **5** after Select ==>.

**Step 2** Press ENTER.

The AEA Menu (Figure 2-59 on page 2-73) is displayed on your screen.

```

                ___ AEA Menu ___

Select Option; press ENTER

Option      Description
   1        Configure AEA
   2        Define UDT
   3        Define UDX

                Select====> 2

PF: 3=Quit                                     12=File
    
```

Figure 2-59. AEA Menu

**Step 3** Type **2** after `Select====>` and press ENTER for the Define UDT Option.

```

                ___ User-Defined Terminal (UDT) Selection ___

Type the new UDT number and name,
Then, type the Model ID for the initial defaults.

UDT Number__          Options _____
                U1-U6

Name . . . __          14 Characters

Model . . . __

                U1. UDT-1          V1. DEC VT100
                U2. UDT-2          V2. DEC VT241
                U3. UDT-3          V5. DEC VT52
                U4. UDT-4          V6. DEC VT220
                U5. UDT-5          H2. HP 2621B
                U6. UDT-6          L3. LS ADM 3A
                I1. IBM 3101        T1. Televideo 912
                I3. IBM 3151/61/62/63 T7. Televideo 970
                I4. IBM 3164        W1. WYSE 50/60
                FC. FTTERM Color    X4. Tektronix** 4205

PF: 3=Quit                                     8=Fwd
    
```

Figure 2-60. User-Defined Terminal (UDT) Selection

**Note:** Up to 6 terminals can be defined. Each UDT terminal definition requires its own set of worksheets 22 through 24. For example, if you are creating UDT definitions for 3 ASCII Terminals, you need 3 distinct sets of worksheets 22 through 24. You must perform the UDT procedure 3 times, a pass for each set of worksheets, for each of the terminals defined.

**Step 4** Locate Worksheet 22—Terminal Tables Definition.

This worksheet is to be used for **both the User-Defined Terminal Selection screen and the User-Defined Terminal Attributes screen.** For the User-Defined Terminal Selection screen, fill in only the that follow the fields from the worksheet.

- UDT Number
- Name
- Model

**Step 5** Press ENTER.

If you have any responses that are not valid, you can correct them as described in “Correcting Responses” on page D-9.

**Step 6** Press PF8 to advance to the next panel.

The User-Defined Terminal Attributes Panel (Figure 2-61) appears next.

**Note:** Default values (if any) in the UDT panels are model dependent. If model numbers are not chosen, the defaults are underscores.

\_\_\_ U1 User-Defined Terminal Attributes \_\_\_

Tab to the Selection field and type the Option.

	Selection	Options	
	_____	_____	_____
Last Line Reserved for Status	_	Y=Yes	N=No
Status Line Character Set . .	_	0-2	
Status Line Clear Option . .	_	0-3	
Use Cursor Seq on Status Line	_	Y=Yes	N=No
Scrolling On . . . . .	_	Y=Yes	N=No
Cursor Wraps at End of Line .	_	Y=Yes	N=No
Color Supported . . . . .	_	Y=Yes	N=No
Cursor Class . . . . .	_	0-5	
Cursor Sequence . . . . .	_____	ASCII hex codes	
Alternate Screen Size . . . .	_	0-2	
Graphics Query Reply . . . .	_____	8 Characters	
Graphics Input Wait Time . .	_	0-99 (100 milliseconds)	
Graphics Input Ending Seq . .	_____	ASCII hex codes	
Graphics Input Length . . . .	_	1-128 Bytes	
PF: 3=Quit	4=Default	8=Fwd	

Figure 2-61. U1 User-Defined Terminal Attributes

**Step 7** Still using Worksheet 22, type in the responses recorded on the worksheet listed under "Attributes of Station Type."

**Step 8** Press ENTER.

If you have any responses that are not valid, you can correct them as described in "Correcting Responses" on page D-9.

**Step 9** Press PF8 to advance to the next panel.

The Inbound Sequence Panels (Figures 2-62 through 2-66) appear next. Use PF11 to page forward and PF10 to page backward to display functions that are not shown on the immediate screen. See the following figures.

\_\_\_U1 Inbound Sequences - ASCII Device to 3174\_\_\_  
Entry XXX of YYY  
Type the ASCII Sequences for each 3270 function.

3270 Function	ASCII Sequence from Terminal	
	Primary	Alternate
PF1 . . . . .	_____	_____
PF2 . . . . .	_____	_____
PF3 . . . . .	_____	_____
PF4 . . . . .	_____	_____
PF5 . . . . .	_____	_____
PF6 . . . . .	_____	_____
PF7 . . . . .	_____	_____
PF8 . . . . .	_____	_____
PF9 . . . . .	_____	_____
PF10 . . . . .	_____	_____
PF11 . . . . .	_____	_____
PF12 . . . . .	_____	_____
PF13 . . . . .	_____	_____

PF: 3=Quit 4=Default 7=Back 8=Fwd 11=Page Fwd

Figure 2-62. U1 Inbound Sequences - ASCII Device to 3174

## Defining AEA

\_\_\_U1 Inbound Sequences - ASCII Device to 3174\_\_\_  
 Entry XXX of YYY  
 Type the ASCII Sequences for each 3270 function.

3270 Function	ASCII Sequence from Terminal	
	Primary	Alternate
PF14 . . . . .	_____	_____
PF15 . . . . .	_____	_____
PF16 . . . . .	_____	_____
PF17 . . . . .	_____	_____
PF18 . . . . .	_____	_____
PF19 . . . . .	_____	_____
PF20 . . . . .	_____	_____
PF21 . . . . .	_____	_____
PF22 . . . . .	_____	_____
PF23 . . . . .	_____	_____
PF24 . . . . .	_____	_____
PA1 . . . . .	_____	_____
PA2 . . . . .	_____	_____

PF: 3=Quit 4=Default 7=Back 8=Fwd 10=Page Back 11=Page Fwd

Figure 2-63. U1 Inbound Sequences - ASCII Device to 3174

\_\_\_U1 Inbound Sequences - ASCII Device to 3174\_\_\_  
 Entry XXX of YYY  
 Type the ASCII Sequences for each 3270 function.

3270 Function	ASCII Sequence from Terminal	
	Primary	Alternate
PA3 . . . . .	_____	_____
ATTN . . . . .	_____	_____
SysRq . . . . .	_____	_____
Reset . . . . .	_____	_____
Dev Cancel .	_____	_____
Enter . . . . .	_____	_____
Clear Screen	_____	_____
Cursor Select	_____	_____
Cursor Up . .	_____	_____
Cursor Down .	_____	_____
Cursor Left .	_____	_____
Cursor Right	_____	_____
Tab . . . . .	_____	_____

PF: 3=Quit 4=Default 7=Back 8=Fwd 10=Page Back 11=Page Fwd

Figure 2-64. U1 Inbound Sequences - ASCII Device to 3174

\_\_\_U1 Inbound Sequences - ASCII Device to 3174\_\_\_  
 Entry XXX of YYY  
 Type the ASCII Sequences for each 3270 function.

3270 Function	ASCII Sequence from Terminal	
	Primary	Alternate
Backtab . . .	_____	_____
Newline . . .	_____	_____
Home . . . .	_____	_____
Change Screen	_____	_____
Ex Sel . . .	_____	_____
Field Mark. .	_____	_____
Dup . . . . .	_____	_____
Erase EOF . .	_____	_____
Erase Input .	_____	_____
Insert . . .	_____	_____
Delete . . .	_____	_____
Print . . . .	_____	_____
Ident . . . .	_____	_____

PF: 3=Quit 4=Default 7=Back 8=Fwd 10=Page Back 11=Page Fwd

Figure 2-65. U1 Inbound Sequences - ASCII Device to 3174

\_\_\_U1 Inbound Sequences - ASCII Device to 3174\_\_\_  
 Entry XXX of YYY  
 Type the ASCII Sequences for each 3270 function.

3270 Function	ASCII Sequence from Terminal	
	Primary	Alternate
Status ON/OFF	_____	_____
Refresh . . .	_____	_____
Fast Left . .	_____	_____
Fast Right .	_____	_____
Suspend Print	_____	_____
Resume Print	_____	_____
Test . . . .	_____	_____
File Tran En	_____	_____
File Tran Dis	_____	_____
NOOP . . . .	_____	_____
ECHO . . . .	_____	_____
ECHO . . . .	_____	_____
ECHO . . . .	_____	_____

PF: 3=Quit 4=Default 7=Back 8=Fwd 10=Page Back

Figure 2-66. U1 Inbound Sequences - ASCII Device to 3174

- Step 10** Locate Worksheet 23 (A and B)—Inbound Sequence Panels.
- Step 11** Type in the responses recorded on the worksheet.
- Step 12** Press ENTER. If you have any responses that are not valid, you can correct them as described in "Correcting Responses" on page D-9.
- Step 13** Press PF8 to advance to the next panel.

## Defining AEA

\_\_\_U1 Outbound Sequences - 3174 to ASCII Device\_\_\_  
Entry XXX of YYY

Type the ASCII Sequences for each 3270 function.

Function	ASCII Sequence to the Terminal
Term Init Seq	_____
	_____
	_____
	_____
	_____
Term Exit Seq	_____
	_____
Erase EOL	_____
Clear Screen	_____
Cursor Up	_____
Cursor Down	_____
Cursor Left	_____
Cursor Right	_____
Status On	_____
Status Off	_____
Bell	_____
Dim Unprot	_____
Highlt Unprot	_____
Dim Protec	_____
Highlt Protec	_____
Transparency On	_____

PF: 3=Quit 4=Default 7=Back 8=Fwd 11=Page Forward

Figure 2-67. U1 Outbound Sequences - 3174 to ASCII Device

\_\_\_U1 Outbound Sequences - 3174 to ASCII Device\_\_\_  
Entry XXX of YYY

Type the ASCII Sequences for each 3270 function.

Function	ASCII Sequence to the Terminal
Transparency Off	_____
Alpha Clear	_____
Start Printer	_____
Stop Printer	_____

PF: 3=Quit 4=Default 7=Back 8=Fwd 10=Page Back

Figure 2-68. U1 Outbound Sequences - 3174 to ASCII Device



**Step 14** Locate Worksheet 24 (A and B)—Outbound Sequence Panels.

**Step 15** Type in the responses recorded on worksheet 24.

**Step 16** Press ENTER to check the changed responses.

- If you have any responses that are not valid, you can correct them as described in “Correcting Responses” on page D-9.

**If you wish to change the responses on the previous panel, press PF10 to page back on the panel.**

- Press ENTER to check your amended responses.

**Step 17** After you have completed typing in all the responses on the Outbound Sequences panel, press PF8 to advance to the UDT Definition Complete Panel.

\_\_\_ UDT Definition Complete \_\_\_

Press PF12 to save all responses  
and return to the AEA Menu

PF: 3=Quit

7=Back

12=Done

*Figure 2-69. UDT Definition Complete Panel*

**Warning:** If you press PF3, the responses you have entered on **all** Outbound Sequences within this procedure are erased.

**Step 18** Press PF12 to save all the panels completed during the UDT Definition procedure. This information is stored on the Utility disk and you will return to the AEA Menu Panel.

## Defining AEA

If you have Define AEA worksheets that you have not used, use the following table to locate the appropriate procedure.

If you do not have any remaining AEA Define worksheets, go to "What's Next?" on page 2-86.

<b>If you want to:</b>	<b>You have worksheets:</b>	<b>Go To:</b>
Configure AEA	17 through 21	Step 3 on page 2-66
Define UDT	22 through 24	Step 3 on page 2-73
Define UDX	25 through 27	Step 3 on page 2-82

## Define UDX Procedure

**Before you perform this procedure:**

- You need to have selected the “Customize the Control Disk” option from the Master Menu, identified the keyboard, and chosen (verified) the disk drives you wish to use. If you have not:
  - See page 1-4 for Master Menu instructions.
  - See page 7-3 for Identifying Keyboard instructions.
  - See page 2-4 for Verify Drive instructions.
- If you have a new unused controller with a fixed disk or have just installed a new fixed disk and have not yet initialized the new disk, you must do so now. (See page G-3 for instructions.)
- If you are not familiar with the Define AEA PF Key functions, you may wish to review the PF Key table on page 2-63.
- You may also need a copy of the *3174 Status Codes*.

The Customize Control Disk Menu is displayed on your screen.

```

                ___ Customize Control Disk Menu ___

Select option; press ENTER

Option   Description
  1      Configure
  2      Define Devices
  3      Merge RPQs
  4      Modify Keyboards
  5      Define AEA

Select ==> 5

PF: 3=Quit                12=File
    
```

Figure 2-70. Customize Control Disk Menu

**Step 1** Type 5 after Select ==>.

**Step 2** Press ENTER.

## Defining AEA

```

                                     ___ AEA Menu ___

Select Option; press ENTER

Option      Description
-----
   1        Configure AEA
   2        Define UDT
   3        Define UDX

Select===>3

PF: 3=Quit                                12=File
```

Figure 2-71. AEA Menu

**Step 3** Type **3** after Select ==>. Press ENTER.

```

                                     ___User-Defined Translate Table (UDX) Selection___

Type the UDX number and name and type the Language,
CECP Support and Model options for the UDX defaults.

----- Options -----

UDX Number . . . . _ 1-3
Name _____ 14 Characters
Language . . . . _ 2 Digit Language Code
CECP Support . . . _ Y or N

Model . . . . . _ 1. UDX-1
                  2. UDX-2
                  3. UDX-3
                  4. Standard US ASCII to EBCDIC
                  5. DEC MCS 8 bit Character table
                  6. DEC NRC 7 bit Character table
                  7. ISO 8859/1.2 7/8 bit Character table
                  8. 3101 CS1 Character Set table
                  9. 31XX CS1/CS2 SI/SO Character table

PF: 3=Quit                                8=Fwd
```

Figure 2-72. User-Defined Translate Table (UDX) Selection

**Note:** Up to three tables can be defined. Each UDX table definition requires its own set of worksheets 25 through 27. For example, if you are creating UDX definitions for 3 tables, you need 3 distinct sets of worksheets 25 through 27. You must perform the UDX procedure 3 times, a pass for each set of worksheets, for each of the tables defined.

**Step 4** Locate Worksheet 25—Translate Tables Definition.

**Step 5** Type each response written on the worksheet in the required field on your screen.

**Step 6** Press ENTER.

If you have any responses that are not valid, you can correct them as described in “Correcting Responses” on page D-9.

**Step 7** Press PF8 to advance to the next panel.

**Note:** Default values (if any) in the UDX panels are language and model dependent. Defaults may be listed on your panel.

\_\_\_UDX1 Translation—EBCDIC to ASCII\_\_\_

Locate EBCDIC value (row-column), type ASCII translation

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
A	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
B	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
D	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
E	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
F	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

PF: 3=Quit    4=Default    8=Fwd

Figure 2-73. UDX1 Translation - EBCDIC to ASCII

**Step 8** Locate Worksheet 26—EBCDIC to ASCII Translation (Outbound).

**Step 9** Type in the responses recorded on the worksheet.

**Step 10** Press ENTER.

If you have any responses that are not valid, you can correct them as described in “Correcting Responses” on page D-9.

**Step 11** Press PF8 to advance to the next panel.

\_\_UDX1 Translation-ASCII to EBCDIC\_\_

Locate ASCII value (row-column), type EBCDIC translation

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
A	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
B	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
D	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
E	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
F	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

PF: 3=Quit    4=Default    7=Back    8=Fwd

Figure 2-74. UDX1 Translation - ASCII to EBCDIC

**Step 12** Locate Worksheet 27—ASCII to EBCDIC Translation (Inbound).

**Step 13** Type each response written on the worksheet in the required field on your screen.

**Step 14** Press ENTER.

If you have any responses that are not valid, you can correct them as described in “Correcting Responses” on page D-9.

**Step 15** Press PF8 to advance to the UDX Definition Complete Panel.

\_\_\_ UDX Definition Complete \_\_\_

Press PF12 to save all responses  
and return to the AEA Define Menu

PF: 3=Quit

7=Back

12=Done

Figure 2-75. UDX Definition Complete Panel

**Warning:** If you press PF3, the responses you have entered on all previous panels within this procedure will be erased.

**Step 16** Press PF12 to save all the panels completed during the Define UDX procedure. This information is stored on the Utility disk.

**If you have AEA Define worksheets that you have not used**, use the following table to locate the appropriate procedure.

If you want to:	You have worksheets:	Go To:
Configure AEA	17 through 21	Step 3 on page 2-66
Define UDT	22 through 24	Step 3 on page 2-73
Define UDX	25 through 27	Step 3 on page 2-82

**If you do not have any remaining AEA Define worksheets**, press PF12 and go to "What's Next?" on page 2-86

### What's Next?

The AEA Menu is on your screen. Press PF12, the Customize Control Disk Menu appears.

- You can continue to customize by selecting a different customizing procedure.

Use the following table to locate the appropriate procedure.

<b>If you want to:</b>	<b>You have worksheets:</b>	<b>Go to page:</b>
Configure	1 through 14 or 32 through 34	2-11
Define Devices	22 through 24	2-30
Merge RPQs	N/A (you have an RPQ diskette)	2-39
Modify Keyboards	Keyboard Worksheets	2-46

- You can complete customizing the Control disk.

**Warning:** The Customizing responses you made must be transferred from the Utility disk to the Control disk, *or they will not be permanently saved.*

**For a Controller with more than one Disk Drive:** Press PF12. When the Master Menu appears, the transfer is complete.

**For a Controller with one Disk Drive:** Press PF12. A processing message appears at the bottom of the menu. Follow the instructions as they appear on the screen. When the Master Menu appears, the transfer is complete.



---

## Chapter 3. Merging DSL Code

- Merge DSL Code Overview . . . . . 3-3
  - When Must You Merge the DSL Code? . . . . . 3-3
  - PF Keys for Merge . . . . . 3-3
- Merge DSL Code Procedure . . . . . 3-4
  - What's Next? . . . . . 3-9



---

## Merge DSL Code Overview

Any 3174 that has a downstream load (DSL) display station or an AEA installed in its cluster must have at least 2 disk drives. (A DSL display station is one that requires the controller to downstream-load its microcode when it is turned on—for example, a 3290 Information Panel). The second drive will contain the DSL disk with the DSL code required for operation of DSL display stations or the AEA.

## When Must You Merge the DSL Code?

The requirement for merging DSL disks depends on how many types of DSL display stations are in the cluster and whether an AEA is installed.

### You need to merge DSL code if:

- There is more than one type of DSL display station in the cluster.
- There is an AEA attached plus one or more DSL display stations. You merge the code from one DSL disk onto the other DSL disk. To avoid degrading performance when several different DSL display stations connected to the same controller are turned on, always merge the DSL code from the *old* disk to a *new* DSL disk. Repeat the merge procedure until the merged DSL disk contains the code for all the types of DSL display stations in the cluster and code to support any AEAs. If you merged the DSL code to a diskette, you insert it into a diskette drive at IML.

### You do not need to merge DSL code if:

- Only one type of DSL display station is in the cluster. You can copy a DSL diskette to the fixed disk or insert the DSL diskette into a diskette drive at IML.
- An AEA is installed and no DSL display stations are in the cluster. You can copy the DSL diskette to the fixed disk or insert the DSL diskette into a diskette drive at IML.

## PF Keys for Merge

You call up a specific function of the customizing program by pressing a PF key. A PF key is operational only if it appears on the panel you are using.

Use the following table to reference Merge DSL Code PF key functions.

PF Keys:	Function:
PF3	PF3 (Quit) quits the procedure without saving any responses since the last ENTER key was pressed. The Master Menu appears on your screen.
PF12	PF12 (Process) processes the options specified during this procedure. <b>Note:</b> If you are using a keyboard without PF12, use PA2.

**Note:** PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

### Merge DSL Code Procedure

If more than one type of DSL device or an AEA is to be used with the controller, the different DSL disks must be merged. If you are not familiar with the Merge DSL Code, you should review the introductory material and PF key functions. This material begins on page 3-3.

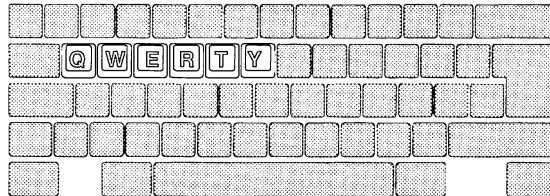
**Before you start, you will need:**

- A 3174 with 2 disk drives.
- *From* disk: a Downstream Load (DSL) disk. This is the disk from which you are merging. If you are using a diskette, it should be unprotected.
- *To* disk: a Downstream Load (DSL) disk. This is the disk to which you are merging. If you are using a diskette, it should be unprotected.

**Note:** If you have an unused new controller with a fixed disk or have installed a new fixed disk and have not yet initialized it, you must do so now. See page G-3 for the procedure.

Use the following steps to merge DSL code from one DSL disk to another DSL disk.

**Step 1** If you have not previously displayed the Master Menu (Chapter 1), do so now. (See “Displaying the Master Menu” on page 1-4 for instructions.) If you do not have a QWERTY keyboard, you must identify the customizing keyboard before you merge DSL code. Refer to Chapter 7, “Identifying Customizing Keyboards” for instructions, and return to this procedure.



**Step 2** On the Master Menu, type **2** after Select ==>.

**Step 3** Press ENTER.

The DSL Merge panel appears on your screen.

```

      ___ DSL Merge ___

      1 = Merge          2 = Delete
      From disk:        To disk:
      — .....-.....    — .....-.....
      — .....-.....    — .....-.....
      — .....-.....    — .....-.....
      — .....-.....    — .....-.....

      Available drives: 1 2 3 4      From ==> 1      To ==> 2

      Verify drive selection; Press ENTER
      PF: 3=Quit
  
```

Figure 3-1. DSL Merge Panel for Selecting Drives

**Step 4** The *From* and the *To* drive fields contain default drive selections. A message will ask you to verify these selections.

If you want to change the default drive selections:

- After From ==>, type the number for the *From* drive.
- After To ==>, type the number for the *To* drive.

**Step 5** Press ENTER.

If you are using a **fixed disk drive**, a processing message appears on the message line.

If you are using a **diskette drive**, a message to insert the diskette appears on the message line near the bottom of your screen.

If you get the message to insert a diskette, insert the DSL *From* or *To* diskette (or both), close the drives, and press ENTER. A processing message appears on the message line.

**Note:** With the 3174 online, the DSL code will be accessed in the following search order; fixed disk drives 3 then 4, diskette drives 1 then 2.

## Merging DSL Code

This procedure checks to make sure the DSL disks are valid. If so, the DSL file names on the disks will appear on the panel under their respective drive headings. See Figure 3-2.

```

      ___ DSL Merge ___

      1 = Merge                2 = Delete
      From disk:              To disk:
      ___ .003290.-001.00     ___ .013179.-000.00
      ___ .....~.....       ___ .....~.....
      ___ .....~.....       ___ .....~.....
      ___ .....~.....       ___ .....~.....

      Available drives: 1 2 3 4      From ==> 1      To ==> 2

      PF: 3=Quit                  12=Process

```

Figure 3-2. The DSL Merge Panel with File Names of Both DSL Disks

Under the *From* and *To* drives appear the name, configuration level, and the microcode level of the product code on the respective DSL device disks. It is possible to have DSL code for as many as 4 different types of devices or for three different types of devices and any AEAs being used on each DSL disk.

**Step 6** Select the Merge/Delete Option.

- To merge a file from the *From* disk, type a **1** next to the file name. Press PF12 to process the option. See Figure 3-3.

```

      ___ DSL Merge ___

      1 = Merge                2 = Delete
      From disk:              To disk:
      1  .003290.-001.00      ___ .013179.-000.00
      ___ .....-.....      ___ .....-.....
      ___ .....-.....      ___ .....-.....
      ___ .....-.....      ___ .....-.....

      Available drives: 1 2 3 4      From ==> 1      To ==> 2

      PF: 3=Quit                  12=Process
  
```

Figure 3-3. Selecting an Option on the DSL Merge Panel

The DSL file of the *From* disk is merged or copied to the *To* disk. When the merge is completed, the panel will show an asterisk (\*) in the field where you typed in the option number.

- The DSL Merge procedure lets you delete product code from a DSL *To* disk. For example, you will have to delete a file when you want to merge the microcode of a *From* DSL disk onto a *To* DSL disk that already has the same device microcode but with a different microcode level of product code. You must delete the product code on the *To* disk before or at the same time that you perform the merge function.

To delete a file from the *To* disk:

- Type a **2** next to the file name you want to delete.
- Type a **1** next to the file names you want to merge, and press PF12. See Figure 3-4 on page 3-8.

```

      ___ DSL Merge ___

      1 = Merge                2 = Delete
      From disk:              To disk:
1     .003290.-001.00        2     .013179.-000.00
—     .....~.....         —     .....~.....
—     .....~.....         —     .....~.....
—     .....~.....         —     .....~.....

Available drives: 1 2 3 4      From ==> 1

PF: 3=Quit                    12=Process
  
```

Figure 3-4. The DSL Merge Panel with the Delete Option

The *From* and *To* disks have the same device code with different microcode levels. You must delete the microcode release level on the *To* disk before or during the merge procedure.

When the merge is completed, the panel will show that the DSL code that previously appeared in the *To* heading has been deleted. The DSL code that previously appeared under the *From* heading will now appear under the *To* heading.

## Step 7 Making Multiple Merges

After the merge is completed, a message appears that prompts you to perform more DSL merge functions.

When you want to perform a merge or delete (for each):

- a. Insert DSL *From* and/or *To* diskettes, if needed, and press ENTER.
- b. Type in the options next to the DSL file names, and press PF12.

When you do not want to perform any additional merge options:

- a. Remove any DSL diskettes.
- b. Insert the Utility diskette in the IML drive (if using a diskette drive).
- c. Press PF3. The Master Menu appears on your screen.
- d. Continue with "What's Next?"



## What's Next?

The Master Menu with Select ==> is on your screen.

You can:

- Select a different customizing or utility procedure. See the “Worksheet and Task Tables” on page 1-7 to locate the information for the procedure you have chosen or to determine the next procedure to perform.
- Terminate Offline Utility action.

To put the 3174 online, make sure that a disk drive contains a customized 3174 Control disk and perform an IML. Refer to *3174 User's Guide* for the model you have for instructions.



---

## Chapter 4. Copying Files

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---

## Getting Ready to Copy Files

From the Copy Menu panel, you can perform one or more of the following procedures:

- Copy the entire contents (files and configuration data) of a disk by using the Full Copy option
- Modify certain configuration data while duplicating a Control disk by using the Modify and Copy option
- Duplicate specific portions of a disk by using the following options:
  - Copy Customizing Data
  - Copy Device Definition
  - Copy Patches
  - Copy Modified Keyboards
  - Copy RPQs
  - Copy Vital Product Data

\_\_\_ Copy Menu \_\_\_

Option	Description
1	Full Copy
2	Modify and Copy
3	Copy Customizing Data
4	Copy Define Devices
5	Copy Patches
6	Copy Modified Keyboards
7	Copy RPQs

Select==>

(Message.. Select option; press ENTER)  
PF: 3=Quit

Figure 4-1. Copy Menu Panel

### Before you Begin any of the Copy procedures, you will need:

- *From* disk: This is the source disk (disk from which you are copying).
- *To* disk: This is the target disk (disk to which you are copying).

The requirements for the *From* and *To* disks vary from copy option to copy option. See the descriptions of each copy option in this chapter to verify the disk requirements for each copy option.

---

### Creating Backup Disks

Depending on your situation, you can use either the Full Copy option or the Copy Customizing Data option to create a backup disk.

The Full Copy option duplicates the entire disk (files and customizing data) regardless of microcode release level. The Copy Customizing Data option is faster and only copies customizing data from one control disk to another control disk at the same microcode release level. Therefore, if you are customizing the control disk and want to make a backup of the customized control disk after you have finished customizing it, you can use the Copy Customizing Data option and a second control disk at the same microcode level (if you received one with your microcode release) to create your backup disk. If you did not receive a second control disk with your microcode release, you can use the Full Copy procedure to make a backup.

For more information about the Full Copy option, see “Full Copy” on page 4-5. For more information about the Copy Customizing Data utility, see “Copy Customizing Data” on page 4-7.

---

### Copy File Options

The following table directs you to specific information on the available copy options.

<b>If you want to perform:</b>	<b>Go to page:</b>
Full Copy	4-5
Modify and Copy	4-6
Copy Customizing Data	4-7
Copy Device Definition	4-7
Copy Patches	4-8
Copy Modified Keyboards	4-8
Copy RPQs	4-8

## Full Copy

Using the Full Copy option, you can copy the entire contents (files and customization data) of a UTL, CTL, DSL, LIB, or LFU disk onto a fixed disk or a 2-sided, high-density diskette. Full Copy can also be used to copy an RPQ diskette to a 2-sided, high-density diskette. (Unformatted diskettes are automatically formatted during the Copy procedure.)

When performing a Full Copy, remember that:

- A fixed disk can contain only one UTL, CTL, DSL, LIB, and LFU disk. For example, if 2 Control disks are copied to the fixed disk, the information from the second control disk will overwrite the first.

**Note:** Backup and On-Trial versions are not copied. (Refer to Chapter 7 in the *3174 Central Site Customizing User's Guide* for more information on Backup and On-trial versions.)

- When copying a LIB disk from a fixed disk to diskettes or from a fixed disk to fixed disk, all library members are copied. When copying a LIB disk from a diskette to a fixed disk, only unique library members are copied.
- Single drive copy is supported. (The user is prompted by on-screen messages to interchange diskettes.)
- A fixed disk can store a greater number of library members than a diskette; therefore, more than one diskette may be required to hold the LIB disk contents stored on a fixed disk. If you are copying a LIB disk from a fixed disk to a diskette and the number of members exceeds the diskette storage space, you will be prompted to insert another diskette. Each resulting diskette will be a stand-alone library diskette.

**Warning:** Make sure that both the Source (*From Disk*) and Target (*To Disk*) disks are of the same density.

Because the logs from the original Control disk are copied during a Full Copy, you should IML the copied disk and perform a Reset Log/Test 4 on it to reset all the logs. The following procedure can be performed from any 3278, or similar, display station:

1. Press and hold ALT; press TEST.
2. Type in /4,2.
3. Press ENTER.

**Before you begin the Full Copy procedure, you will need:**

- *From* disk: A UTL, CTL, DSL, RPQ, LIB, or LFU disk. This is the disk from which you are copying.
- *To* disk: A fixed disk or 2-sided, high-density diskette (formatted or unformatted). This is the disk to which you are copying.
- If using a diskette, a *label* indicating the microcode level of the *To* diskette.

Go to "Copy Files Procedure" on page 4-10 to perform the Full Copy procedure.

### Modify and Copy

Using the Modify and Copy procedure, you can copy the entire contents of a control disk and modify certain configuration responses on the Control disk to which you are copying. You can use this procedure to produce a control disk for another controller or to create *pattern diskettes* that can, in turn, be modified for other controllers. This procedure does not change the original Control disk's information, but modifies certain responses for the new Control disk.

**Note:** The Modify and Copy option cannot be used if you have configured for multiple hosts.

You can modify the responses to the following configuration questions:

- 099: Assistance Data
- 104: Controller Address
- 105: Upper Address Limit (Non-SNA or the Token-Ring Gateway feature)
- 106: Token-Ring Network Address of the 3174 (Token-Ring Network)
- 107: Token-Ring Network Address of the Gateway (Token-Ring Network)
- 108: Unique Machine Identifier
- 215: Physical Unit Identification

#### Notes:

1. Question 105 appears only if you are modifying local non-SNA and the Token-Ring Gateway feature configuration data.
2. Questions 106 and 107 appear only if you are modifying Token-Ring configuration data.
3. If you have the Token-Ring Gateway feature, the new subchannel range (questions 104 and 105) cannot be greater than the previously defined range.

#### If you will be performing the Modify and Copy procedure, you will need:

- *From* disk: A customized Control disk with the same *microcode level* as the Utility disk that was IMLed. This is the disk from which you are copying.
- *To* disk: A fixed disk or a 2-sided, high-density diskette (formatted or unformatted). This is the disk to which you are copying.
- If using a diskette, a *label* indicating the microcode level of the *To* diskette.

Go to "Copy Files Procedure" on page 4-10 to perform Modify and Copy.



## Copy Customizing Data

This procedure copies only the regular configuration responses, patches, RPQs, modify keyboard tables, Device Definition, and AEA configuration responses from one Control disk to another Control disk of the same microcode level. All existing configuration responses, patches, RPQs, modified keyboards, and the Device Definition on the *To* disk are replaced by the configuration responses (regular and AEA), patches, RPQs, modified keyboards, and the Device Definition on the *From* disk. This method of duplicating customized Control disks is faster than the Full Copy method.

**If you will be performing the Copy Customizing Data procedure, you will need:**

- *From* disk: A customized Control disk of the same *microcode level* and *maintenance level* as the *To* disk and the same *microcode level* as the IMLed Utility disk. This is the disk from which you are copying.
- *To* disk: A Control disk of the same *microcode level* and *maintenance level* as the *From* disk. This is the disk to which you are copying.

Go to “Copy Files Procedure” on page 4-10 to perform Copy Customizing Data.

## Copy Device Definition

During a Copy Device Definition, you copy only the Device Definition file from one Control disk to another Control disk of the same configuration and release levels. Doing this will erase any Device Definition data found on the *To* disk.

**If you will be performing the Copy Device Definition procedure, you will need:**

- *From* disk: A Control disk with the Device Definition defined, and of the same *microcode level* as the IMLed Utility disk. This is the disk from which you are copying.
- *To* disk: A Control disk of *the same configuration and release levels* as the *From* disk and the IMLed Utility disk. The *To* disk must be configured for the Device Definition either before or after the copy is made. This is the disk to which you are copying.

Go to “Copy Files Procedure” on page 4-10 to perform Copy Define Devices.

## Copying Files

### Copy Patches

During a Copy Patches procedure, you copy only the patch files from one Control disk to another Control disk of the same microcode level or from one Utility disk to another Utility disk of the same microcode level. Doing this will erase any patches found on the *To* disk.

**If you will be performing the Copy Patches procedure, you will need:**

- *From* disk: A Control disk with patch data merged onto it and of the same microcode level and maintenance level as the *To* disk and of the same microcode level as the IMLed Utility disk. This is the disk from which you are copying.
- *To* disk: A Control disk of the same microcode level and maintenance level as the *From* disk and the same microcode level as the IMLed Utility disk. This is the disk to which you are copying.

Go to “Copy Files Procedure” on page 4-10 to perform Copy Patches.

### Copy Modified Keyboards

During a Copy Modified Keyboards procedure, you copy only the Modified Keyboard tables from one Control disk to another Control disk of the same configuration and release level. Doing this will erase any Modified Keyboard tables found on the *To* disk.

**If you will be performing the Copy Modified Keyboards procedure, you will need:**

- *From* disk: A Control disk with Modified Keyboard tables defined on it and of the same microcode level as the IMLed Utility disk. This is the disk from which you are copying.
- *To* disk: A Control disk of the same configuration and release levels as the *From* disk and the IMLed Utility disk. This is the disk to which you are copying. The *To* disk must be configured for the Modify Keyboards procedure either before or after the tables are copied; language specifications within the Modified Keyboards tables may differ from the *From* disk.

Go to “Copy Files Procedure” on page 4-10 to perform Copy Modified Keyboards.

### Copy RPQs

During Copy RPQs, you copy only the RPQ files from one Control disk to another Control disk. Doing this will erase any RPQs found on the *To* disk.

**If you will be performing the Copy RPQs procedure, you will need:**

- *From* disk: A Control disk with RPQ data merged on it. This disk must have the same microcode level as the IMLed Utility disk. This is the disk from which you are copying.
- *To* disk: A Control disk of the same configuration level as the IMLed Utility disk and a release level that is equal to or greater than the IMLed Utility disk. This is the disk to which you are copying.

Go to “Copy Files Procedure” on page 4-10 to perform Copy RPQs.

## Copy Vital Product Data

During Copy Vital Product Data, you copy only Vital Product Data (entered via Online Test 5, Options 2 and 4) from one Control disk to another.

**If you have will be performing the Copy Vital Product Data procedure, you will need:**

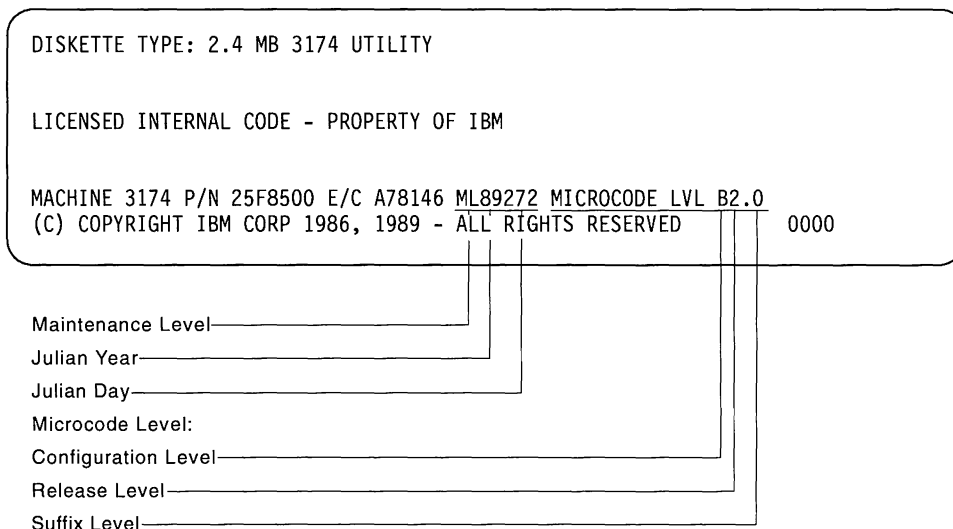
- *From* disk: A Control disk at Microcode level B2 or above. Vital Product Data is present on this disk.
- *To* disk: A Control disk at B3 level or above. This disk does not have Vital Product Data present.

**Warning:** The *From* disk and the *To* disk must be at the same microcode level, or the *From* disk must be at a lower level than the *To* disk. If the *From* disk is at a **higher** level than the *To* disk (for example, the *From* disk is at microcode level B4 and the *To* disk is at microcode level B3), the Vital Product Data on the *To* disk will be destroyed when you IML the *To* disk.

Go to “Copy Files Procedure” on page 4-10 to perform Copy Vital Product Data.

## Determining Maintenance and Microcode Levels

When a copy procedure involves a diskette, you will need to know the maintenance and microcode levels of the diskette. (The exception to this rule is the Full Copy procedure. See “Full Copy” on page 4-5.) A label in the upper portion of a diskette identifies the diskette type by name, IBM part number, validation number, maintenance and microcode levels. The maintenance and microcode levels appear in the format shown in Figure 4-2.



*Figure 4-2. The Maintenance and Microcode Levels. The maintenance level represents the Julian date, where 89 is the year and 272 is the day of the year (89272 is September 29, 1989). The microcode level consists of configuration, release, and suffix levels.*

To determine the microcode level of a diskette, compare the sequence of letters and numbers. For example, a diskette with a microcode level of B1 has a lower level of microcode than a diskette with a microcode level of B2.

### Copy Files Procedure

Use the following steps when you are performing any of the copy procedures. If you have not already done so, go to the description of the type of copy you wish to perform, and review the items you need before starting. This information is found on pages 4-5 through 4-8. You may also need a copy of the *3174 Status Codes*.

**Note:** Before beginning this procedure, you need to have previously identified the keyboard (page 2-3). If you have an unused new controller with fixed disk, or a new unused fixed disk, you need to initialize the fixed disk (see page G-3).

**Step 1** If you have not previously displayed the Master Menu, do so now. (See "Displaying the Master Menu" on page 1-4 for instructions.)

**Step 2** On the Master Menu, type **3** after Select ==>.

**Step 3** Press ENTER on the keyboard. The Copy Menu (Figure 4-3) appears on your screen.

```
      ___ Copy Menu ___  
  
Option   Description  
  1      Full Copy  
  2      Modify and Copy  
  3      Copy Customizing Data  
  4      Copy Device Definition  
  5      Copy Patches  
  6      Copy Modified Keyboards  
  7      Copy RPQs  
  8      Copy Vital Product Data  
  
Select==>  
PF: 3=Quit
```

*Figure 4-3. Copy Menu. Select a copy option from this screen.*

**Step 4** Select and type an option number after Select ==>.

**Step 5** Press ENTER.

The prompt appears at the bottom of the screen with the option you selected. Available drives appears in place of Select ==>.

Available drives: 1 2 3 4 From ==> 1 To ==> 2

The available drive fields identify how many drives you have in the controller, and the default drive selections for the *From* and *To* disks. Diskette drives are numbered 1 and 2 and the fixed disks are numbered 3 and 4.

If you specified a **diskette drive** as the *From* or *To* drive, a message to insert the diskette for copying appears on the message line near the bottom of your screen. Insert the *From* or *To* diskette, close the drive door, and press ENTER. To complete the procedure, follow the prompts as they appear on screen.

If you specified a **fixed disk drive** as the *From* drive, the Subdirectory Selection panel appears. (see Figure 4-4 on page 4-12).

**Notes:**

- a. The Utility and Control diskettes must be at or greater than Configuration Support A or S Release 4. To learn to identify diskette microcode and maintenance levels, go to "Determining Maintenance and Microcode Levels" on page 4-9.
- b. The DSL subdirectory on a fixed disk can contain microcode for up to four of: 3290, 3179-G, 3192-G, 3193, and 3174 Feature 3020 - AEA.
- c. Single drive copy is supported. (The user is prompted to interchange diskettes by on-screen messages.)
- d. If you are using central site change management (CSCM), refer to "CSCM Fixed Disk 3174 Setup" in the *3174 Central Site Customizing User's Guide*, for recommendations on copying the Control disk.
- e. Although an RPQ diskette cannot be copied to the fixed disk, individual RPQs can be merged to the UTL00001 subdirectory and transferred to the CTL00001 subdirectory.

**Remember**

When both the Utility and the LFU diskettes are copied to the fixed disk, the controller IMLs from the one most recently copied. For example, if you copy the LFU diskette to the fixed disk first, and then copy the Utility diskette to the fixed disk, the Utility disk is used for the IML. You can override by performing the procedure for selecting the IML source in Chapter 6, "Performing Media Management."

## Copying Files

```
      ___ Subdirectory Selection ___                               Drive 3

Type 'X' to select subdirectorys
or remove 'X' to deselect subdirectorys, press ENTER

Subdirectory  Status
- CTL00001
- UTL00001
- DSL00001
- LIB00001
- LFU00001

PF: 3=Quit
```

*Figure 4-4. Subdirectory Selection Panel*

```
      ___ Subdirectory Selection ___                               Drive 3

Type 'X' to select subdirectorys
or remove 'X' to deselect subdirectorys, press ENTER

Subdirectory  Status
- CTL00001
- UTL00001

PF: 3=Quit
```

*Figure 4-5. Subdirectory Selection for CTL/UTL Patch Panel*

- Step 6** Type an uppercase **X** next to the subdirectory name that you want to be copied (remove the **X** to deselect), and press ENTER. (You may choose more than one subdirectory at a time.)
- If you are performing a Library Full Copy (LIB00001), go to Step 7.
  - If you are performing a Modify and Copy, go to Step 8 on page 4-16.
  - If you are performing other Full Copy Subdirectories (CTL00001, UTL00001, DSL00001, or LFU00001), or other Copy Menu options besides Modify and Copy, follow the instructions as they appear on the screen. On completion, go to “What’s Next?” on page 4-17.

**Step 7 For Full Copy Library Members Only:**

The Copy Library Members Panel appears. (You have typed an uppercase X next to *LIB00001* and pressed ENTER.)

\_\_\_ Copy Library Members \_\_\_

Copying xxxx library members, please wait

xxxx Members Copied

*Figure 4-6. The Copy Library Members Panel*

If all library members are copied successfully, the Copy Library Members Panel will have the following message:

\_\_\_ Copy Library Members \_\_\_

All Members Copied Successfully

xxxx Members Copied  
 PF: 3=Quit 9=Display All

Figure 4-7. The Copy Library Members Panel

**Note:** Pressing PF9 produces the Copy Library Members Summary Panel displaying a summary of the members copied. Press PF11 to page through the panels to view all of the copied members.

If all library members are *not* copied successfully, the Copy Library Members Summary Panel will appear, similar to the following example. This panel contains information on members which experienced errors during the copy library members process.

\_\_\_ Copy Library Members \_\_\_  
 Summary

Member	Level	Status
-----	-----	-----
Member06	A4.1	Media Error on Source
Member15	A4.1	Member Already Exists
Membe100	A4.1	Member Already Exists
Membe200	A4.1	Media Error on Source
Membe555	A5.1	Microcode levels exceed limit of 10
Membe666	B1.0	Microcode levels exceed limit of 10
Membe700	B1.0	Microcode levels exceed limit of 10
Memb1000	B1.0	Media Error on Source
Memb1100	B2.0	Member Already Exists
Memb1500	B2.0	Member Already Exists
Memb1666	B2.0	Library Subdirectory Full
Memb1997	B3.0	Library Subdirectory Full
Memb1998	B3.0	Library Subdirectory Full
Memb1999	B3.0	Library Subdirectory Full
Memb2000	B3.0	Library Subdirectory Full

1985 Members Copied; 15 Members Not Copied  
 PF: 3=Quit 9=Display All

Figure 4-8. The Copy Library Members Summary Panel. Summary Panel displaying copy fail members only.



**Note:** Pressing PF9 displays all library members (including those copied and those not copied). By toggling PF9, you can alternate between displaying all library members and only those library members experiencing copy failures.

There are corrective actions available for the copy errors listed in the *Status* column of the Summary Panel. The following list (in alphabetical order) matches the type of failure with a corresponding corrective action or explanation.

**Copy Terminated by the User:** You have pressed PF3 to quit, this member was not copied.

**Library Subdirectory Full:** Copy the remaining diskettes to another hardfile. If that option is not available, refer to Chapter 2 of the *Central Site Customizing User's Guide* for information on how to delete target hardfile members. After choosing Option 6 from the Master Menu, go to "Deleting a Member," within that chapter.

**Media Error on Source:** If you have a backup diskette (backup diskettes are routinely recommended), use the backup diskette for the Source in the copy procedure. If you do not have a backup diskette, delete the library member using CSCU and then recreate the member. (To delete a member, choose Option 6 from the Master Menu. Then, refer to Chapter 2 in the *Central Site Customizing User's Guide*. Look under the heading "Deleting a Member." To recreate the member, look under the heading "Updating a Library Member.")

**Note:** You may need to consult the worksheet planner to successfully recreate a library member. When you recreate a library member, you will be required to change configuration question responses on appropriate panels.

**Member Already Exists:** If this error exists repeatedly, delete these members from the target disk and return to the copy procedure. (Do this by choosing Option 6 from the Master Menu. Then, refer to Chapter 2 in the *Central Site Customizing User's Guide*. Look under the heading "Deleting a Member.") If this error occurs only occasionally on the Summary Panel, you may wish to use the CSCU "Get Put Function." (Do this by choosing Option 6 from the Master Menu. Then, refer to Chapter 2 in the *Central Site Customizing User's Guide*. Look under the heading "Creating a Library Member.")

**Note:** The "Get Put Function" will cause an upgrade.

**Member not copied due to Error:** This error is presented with a SSC number. Use your copy of the *3174 Status Codes* to determine the corrective action.

**Microcode Levels Exceed Limit of 10:** Use CSCU to delete all of the members associated with one or more of the undesirable microcode levels on the target disk. (Do this by choosing Option 6 from the Master Menu. Then, refer to Chapter 2 in the *Central Site Customizing User's Guide*. Look under the heading "Deleting a Member.")

**Step 8 For Modify and Copy Only:**

After you verify your *From* and *To* drives for the Modify and Copy procedure, another panel appears. On this Modify and Copy panel, you can modify the responses entered on the *From* disk.

```
      ___ Modify and Copy ___  
  
'From' drive (n) responses:  
  
099 - XXXXXXXXXXXXXXXXXXXXXXXX  
104 - XXXXX  
105 - XXXX  
108 - XXXXXXXX  
215 - XXXXX  
  
'To' drive (n) responses:  
  
099 - XXXXXXXXXXXXXXXXXXXXXXXX  
104 - XXXXX  
105 - XXXX  
108 - XXXXXXXX  
215 - XXXXX  
  
PF: 3=Quit
```

*Figure 4-9. The Modify and Copy Panel. On this example panel, you can modify responses to five configuration questions. Here the Xs represent the responses from the From disk, which appear on the panel. The n represents the number of the drive, which appears on the panel.*

In the top half of the panel, the responses previously entered on the *From* disk are displayed. In the bottom half of the panel, you enter only the responses you want to change.

- a. In the *To* drive fields, type over the responses you want to modify. If you wish, you can leave a response unchanged.
- b. Press ENTER.

A message appears on the message line while the copying is being performed. It indicates the processing of the Copy procedure. You will receive a message when copying is completed.

- c. After the Copy is completed, a message prompts you to make another copy.
  - If you are copying to a **fixed disk drive**, press PF3 to quit. (The Copy Menu appears on your screen.)
  - If you are copying to a **diskette drive**, insert a *To* diskette for each additional copy you want to make, and press ENTER.

When you do not want to make any more copies of this *From* disk, the Copy Menu appears on your screen.

## What's Next?

The Copy Menu is on your screen.

You can:

- Select a different Copy procedure from the Copy Menu.

**Note:** Be sure to refer to the description of the type of copy you wish to perform, and review the items you will need before starting.

- Remove any diskettes from the drives if you have completed performing all the copy procedures you wished to perform.

**Note:** Identify any diskettes copied by writing a unique designation on the label. You must include the **Configuration and Release level information** on the label, and you may want to identify the specific controller in which the diskette is to be used.

- Return to the Master Menu by pressing the PF3 key and choose another customizing procedure. See the "Worksheet and Task Tables" on page 1-7 to locate the information for the procedure you have chosen or to determine the next procedure to perform.
- If this is the last customizing procedure you are performing and you are ready to put the controller online, go to the IML procedure in the *3174 User's Guide* for the controller model you are using.



---

## Chapter 5. Upgrading Microcode

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---

## An Overview of the Microcode Upgrade Procedure

Periodically, IBM issues new microcode releases that incorporate new maintenance enhancements or new function, or both, for the 3174; however, the control disk for the new microcode release does not contain your current customization data.

Use the Microcode Upgrade procedure to transfer your current customization data from the existing customized control disk (*Old* disk) to the new control disk (*New* disk). The disk *to* which you are transferring the customizing data must have the same or higher release, suffix, and maintenance level of microcode as the disk *from* which you are transferring the customizing data. Only customization data (for example, configuration responses and device definition) is transferred.

You can perform a microcode upgrade of the following levels:

<b>From Configuration Support/Release</b>	<b>To Configuration Support/Release</b>
A1 through A5	A5 and higher
A3 through A5	B1 and higher
S4	S5
S4, S5	B1 and higher
B1, B2	B2 and higher

To perform a successful Microcode Upgrade, consider the following guidelines:

- To migrate *from* microcode release levels lower than A3 or S4 *to* microcode release B or higher, you must first perform a microcode upgrade from an old Configuration Support A to A3, A4, or A5, or from an old Configuration Support S to S4 or S5. Then, you can perform a second microcode upgrade to release B1 or higher. Remember that you cannot migrate from a higher release to a lower release; for example, you cannot go from B2 to B1.
- Patches are **not** moved during the Microcode Upgrade procedure. Patches on the *New* disk remain intact.
- During the Microcode Upgrade procedure, KDU information is copied for *Old* disks at Release B2 and above; for *Old* disks at Release B1 and lower, you must use the Modify Keyboards procedure to transfer KDU information.
- If the *New* disk is not a fixed disk, the Vital Product Data is copied from the *Old* disk to the *New* disk.

### After the Microcode Upgrade

One or more of the following procedures may need to be performed after the Microcode Upgrade procedure.

#### Merge RPQ Procedure

The Microcode Upgrade procedure transfers the names of existing RPQs from the *Old* disk to the *New* disk and erases any RPQs that are on the *New* disk. However, the Microcode Upgrade procedure does not upgrade the *New* disk with the RPQs. You must perform the Merge RPQ procedure after the Microcode Upgrade procedure if Merged RPQs are present on the *Old* Control disk.

#### Modify Keyboards Procedure

If you have Modifying Keyboard Data on your *Old* disk and are transferring customization data *from* a disk with a microcode level lower than B2, you must perform the Modify Keyboards procedure after the Microcode Upgrade procedure.

#### Customize the Control Disk Procedure

For customization questions on the *New* disk that do not exist on the *Old* disk, the Microcode Upgrade utility uses the default responses to these questions. If you do not want to use the default responses to these new questions, you must specify responses to the new questions by customizing the Control disk after the Microcode Upgrade procedure. You need to specify responses only to the new questions; the responses to the other questions are copied by the Microcode Upgrade utility.

#### Full Copy Procedure

If you want your control microcode on a fixed disk, use the Full Copy option in the Copy Files procedure to copy the new control disk (along with your current customization data) to a fixed disk. Perform this procedure after you have performed one or more of the following procedures:

- Microcode Upgrade
- Merge RPQ
- Modify Keyboards
- Customize the Control Disk

**Warning:** Make sure you transfer your current configuration data to the correct disk drive. If you do not, you could erase your current configuration data.

Table 5-1 lists the procedures that may have to be performed after a Microcode Upgrade and points you to the specific procedure.

Table 5-1. Procedures Performed after Microcode Upgrade

Customizing Data Type	Procedure	Refer To
RPQ	Merge RPQs	"Merging RPQs" on page 2-39.
Modify Keyboard tables (for <i>Old</i> disks with a release less than B2)	Modify Keyboards	"Modifying Keyboards" on page 2-46.
Enter Configuration Question Responses (New Questions)	Customize the Control Disk	Chapter 2, "Customizing the Control Disk" on page 2-1.
Copy the Control Disk microcode to a fixed disk	Full Copy option of Copy Files	Chapter 4, "Copying Files" on page 4-1.



---

## PF Keys for Microcode Upgrade

You can obtain a specific function of the customizing program by pressing a PF key. A PF key is operational only if it appears on the panel you are using.

Use the following table to reference Upgrade Microcode PF key functions.

<b>PF Keys:</b>	<b>Function:</b>
PF3	PF3 (Quit) quits the procedure without saving any responses that you entered since you last pressed the ENTER key. The Master Menu appears.
PF12	PF12 (Process) processes the options specified during this procedure. <b>Note:</b> If you are using a keyboard without PF12, use PA2.

**Note:** PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

---

### Upgrading the Microcode

**Warning:** The Microcode Upgrade procedure transfers customization information only. Do not upgrade from the *New* control disk or you could erase your current configuration data. Also, if you will be using the Full Copy option of the Copy Files utility to copy the *New* Control disk to a fixed disk or diskette, make sure you have used the microcode upgrade utility first to transfer your current configuration data to the *New* Control disk.

If you will be using the Microcode Upgrade procedure, and you have not read “An Overview of the Microcode Upgrade Procedure” on page 5-3, do so now and continue with the Microcode Microcode Upgrade procedure.

### Getting Started

Before you start, you need:

- The identity of the customizing keyboard. If you do not have this information, see Chapter 7, “Identifying Customizing Keyboards.”
- *From* disk: a customized Control disk. This is the *Old* disk. The customizing data on the *Old* disk will be transferred to the *New* disk.
- *To* disk: a Control disk that is called the *New* disk. This disk must have the same or higher release, suffix, and maintenance levels as the *Old* disk.
- A Utility disk. This disk must have the same 3174 microcode level as the *New* (*To*) Control disk.

If the suffix levels of the *Old* and *New* disks are equal, the maintenance level of the *New* disk must be equal to or higher than the maintenance level of the *Old* disk. (See “Determining Maintenance and Microcode Levels” on page 4-9.)

#### **If you have a fixed disk**

If your fixed disk is new and unused, you must initialize it. (See page G-3 for the initialization procedure.)

## Microcode Upgrade Procedure

When you are ready to begin the procedure, perform the following steps:

**Step 1** If you have not previously displayed the Master Menu (Chapter 1), follow the procedure in “Displaying the Master Menu” on page 1-4.

**Important:** Use a Utility disk that has the same microcode level as the *New (To)* Control disk. See “Determining Maintenance and Microcode Levels” on page 4-9 to determine the microcode level).

**Step 2** On the Master Menu, type 5 after Select ==>.

**Step 3** Press ENTER.

The Microcode Upgrade panel appears.

\_\_\_ Microcode Upgrade \_\_\_

OLD disk	(Previous Level):	NEW disk	(Latest Level):
Configuration Level	- X	Configuration Level	- X
Release Level	- XX	Release Level	- XX
Suffix Level	- XX	Suffix Level	- XX
Maintenance Level	- XXXXX	Maintenance Level	- XXXXXX

Available drives: 1 2 3 4      OLD ==> 1 NEW ==> 2

PF: 3=Quit                      12=Process

Figure 5-1. Microcode Upgrade Panel

**Step 4** Verify drives.

The available drives field on the panel identifies the drives available in the controller and the default drive selections for the *Old* and the *New* disk. If you do not want to use the default drive selections:

- After Old ==> , type the number for the *Old* drive.
  - After New ==> , type the number for the *New* drive.
- a. Press ENTER. The *Old* and *New* drives that you selected are highlighted.
  - b. If you specified a **diskette drive** for the *Old* or *New* drive, a message to insert the diskettes for upgrading appears on the message line near the bottom of your screen.

## Upgrading Microcode

Insert the *Old* or *New* diskettes, close the drives, and press ENTER.

**Important:** Make sure that you are copying your current configuration data to the *New* control disk or you could erase your current configuration data.

**Step 5** If you need to insert a control diskette or diskettes, do so now. Close the drives, and press ENTER.

**Step 6** If the diskettes are valid control disks, the configuration, release, suffix, and maintenance level of each disk is displayed. The following example shows a 4-drive controller. Drives 1 and 2 are the diskette drives; drives 3 and 4 are the fixed disk drives. (If either of the drives is a diskette drive, an appropriate diskette must be inserted for the configuration, release, suffix, and maintenance level information for that disk to be displayed)

\_\_\_ Microcode Upgrade \_\_\_

OLD disk	(Previous Level):	NEW disk	(Latest Level):
Configuration Level	- A	Configuration Level	- B
Release Level	- 05	Release Level	- 04
Suffix Level	- 00	Suffix Level	- 00
Maintenance Level	- 89178	Maintenance Level	- 912040

Available drives: 1 2 3 4      OLD ==> 1 NEW ==> 2

PF: 3=Quit                      12=Process

*Figure 5-2. Microcode Upgrade Panel. This Example Shows Configuration, Release, Suffix, and Maintenance Level Information*

Verify the *Old* and *New* configuration, release, suffix, and maintenance level information displayed.

**Step 7** Press PF12 to initiate the Microcode Upgrade.

The 3174 transfers your current customization data from the *Old* disk to the *New* disk. A message informs you when the upgrade is completed.

**Step 8** **If you are upgrading to a fixed disk drive:** Go to Step 11 on page 5-9.

**If you are upgrading to a diskette drive:** Continue with Step 9 on page 5-9.

**Step 9** A message prompts you to continue to upgrade.

**If you want to quit:** Go to Step 11.

**If you want to perform another Microcode Upgrade:** Continue with Step 10.

**Step 10** To continue with another upgrade:

a. Insert another *New* or *Old* diskette.

**Important:** Use a Utility disk that has the same microcode level as the *New (To)* Control disk.

b. Press ENTER.

The configuration, release, suffix, and maintenance levels of the disks involved in the upgrade are displayed.

c. Press PF12 to initiate the microcode upgrade.

A message informs you when the upgrade is completed.

Repeat this step for as many upgrades as are needed. When you do not want to upgrade any more diskettes, continue with Step 11.

**Step 11** Perform the following steps:

a. Press PF3. The Master Menu appears.

b. Remove any diskettes.

c. Make sure that the **New** Utility disk is in the drive used to IML.

d. Continue to "What's Next?"

### What's Next?

1. Review "After the Microcode Upgrade" on page 5-4 and the table on page 5-4 for a description of the procedures that may need to be performed after a Microcode Upgrade, and perform the appropriate procedures.
2. Remove any diskettes used for the Upgrade procedure from the drives.
3. Create a backup copy of the Control disk. See "Creating Backup Disks" on page 4-4 for information on creating backup disks.
4. Identify any diskettes by writing a unique designation on the label (for example, you might identify the diskette by the diskette's configuration and the 3174 in which it is to be used and whether it is an original or backup disk).
5. To put the 3174 online, IML with the Control disk that you use for normal operations (perhaps the one you just upgraded).



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## Chapter 6. Performing Media Management

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---

## Getting Ready to Perform Media Management

Before you start, you will need:

- A copy of the 3174 Utility and Control diskettes on a fixed disk.
- The identity of the customizing keyboard. If you do not have this information, see Chapter 7.
- You may need a copy of the *3174 Status Codes*.

If you have a new unused controller with a fixed disk or a controller with a new unused fixed disk you must first initialize it. (See page G-3 for the procedure.) If you need to perform a copy to the fixed disk, see Chapter 4. (Choose the full copy option.)

---

## Performing Media Management

The Media Management procedure provides you with a tool for managing the data on your fixed disks. It allows you to select, deselect, or delete subdirectories. Each subdirectory holds the contents of a 3174 diskette. The subdirectories are used for the different IMLs from a fixed disk. For example, the Control subdirectory would be used for an IML, and the Utility subdirectory would be used for an ALT 1 IML. Media Management allows you to display information about the diskettes and subdirectories in your controller, such as microcode levels and maintenance levels. Media Management also allows you to create dump and/or trace diskettes. Only certain 3174 diskettes can be copied onto a fixed disk drive and only one of each diskette type can reside on the fixed disk at a time. For example, 2 Utility diskettes cannot be copied to the fixed disk. The second copy overwrites the first copy. The diskettes that can be copied to the fixed disk include:

- 3174 Utility (UTL) diskette
- 3174 Control (CTL) diskette
- 3174 Limited Function Utility (LFU) diskette
- 3174 Library (LIB) diskette
- 3174 Down Stream Load (DSL) diskette

### Notes:

1. The Utility and Control diskettes must be at or greater than microcode level A.4.
2. The DSL diskette can contain microcode for up to four of the following options: 3290, 3179-G, 3192-G, 3193, and 3174 feature 3020 - AEA (for Asynchronous Emulation Adapter microcode, the product name is 3020).

### Remember

When both the Utility and the LFU diskettes are copied to the fixed disk, the 3174 IMLs from the one most recently copied. For example, if you copy the LFU diskette to the fixed disk first, and then copy the Utility diskette to the fixed disk, the Utility disk is used for the IML. This can be overridden by performing the procedure under "IML Source Selection/Deselection Procedure" on page 6-6.

## Performing Media Management

### Media Management Options

The Media Management Menu provides you with the following options:

```
_____ Media Management Menu _____

Select Option; press ENTER

Option   Description
  1      Select/Deselect IML Source
  2      Delete Subdirectory
  3      Display Disk Information
  4      Create Dump/Trace Diskette
```

```
Select====> 1

PF: 3=Quit
```

*Figure 6-1. Media Management Menu Displayed*

**Select/Deselect IML Source:** Allows you to choose the subdirectories to be included or not included when an IML of the 3174 is executed. Selecting option 1, "Select/Deselect IML Source," presents the IML Source Selection panel.

**Delete Subdirectory:** Allows you to delete a subdirectory that is no longer needed. Selecting option 2, "Delete Subdirectory," presents the Subdirectory Deletion panel.

**Display Disk Information:** Allows you to display information about the diskettes and subdirectories in the controller, such as microcode levels and release levels. Selecting option 3, "Display Disk Information", presents the Display Disk Information panel which contains information about the 3174 microcode on a specified drive.

**Create Diskette:** Allows you to create dump and trace diskettes from the controller.

## PF Keys for Media Management

You call up a specific function of the customizing program by pressing a PF key. A PF key is operational only if it appears on the panel you are using.

Use the following table to reference Media Management PF key functions.

PF Keys:	Function:
PF3	PF3 (Quit) quits the procedure without saving any responses since the last ENTER key was pressed. The Master Menu appears on your screen.
PF12	PF12 (Process) processes the options specified during this procedure. <b>Note:</b> If you are using a keyboard without PF12, use PA2.

**Note:** PF13 through 24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

Now you are ready to perform Media Management. Use the following table to locate the appropriate procedure.

If you want to:	Go to page:
Select or Deselect the IML Source	6-6
Delete Subdirectories	6-9
Display Disk Information	6-11
Create Diskette	6-13

### IML Source Selection/Deselection Procedure

If you are not familiar with Media Management, see the introductory text on Media Management on page 6-3.

- Step 1** If you have not previously displayed the Master Menu (Chapter 1), do so now. (If you have the Media Management Menu displayed, go to Step 4.) To display the Master Menu, see “Displaying the Master Menu” on page 1-4 for instructions.
- Step 2** On the Master Menu, type **7** after Select ==>.
- Step 3** Press ENTER on the keyboard. The Media Management Menu appears on your screen.

```

_____ Media Management Menu _____

Select Option; press ENTER

Option      Description
  1         Select/Deselect IML Source
  2         Delete Subdirectory
  3         Display Disk Information
  4         Create Diskette

Select==> 1

PF: 3=Quit
```

*Figure 6-2. Media Management Menu Displayed*

- Step 4** Type **1** after Select==> and press ENTER.

**Step 5** Verify drives.

The following prompt appears on your screen.

Available drives: 3 4     Select Drive ==>

Select drive ==> is defaulted to the first available fixed disk drive installed. A message prompts you to verify the default drive selection.

- a. If you do not want to use the default drive selection, type the number of the fixed disk drive that you want to use after Select drive ==>.
- b. Press ENTER.

**Step 6** Select or deselect the IML source.

The IML Source Selection panel appears on your screen (see Figure 6-3) along with the selectable subdirectories on the drive you specified.

```

      ___ IML Source Selection ___
                                     Drive 3

1 - Select
2 - Deselect

Subdirectories
CONTROL      UTILITY
_ CTL00001   _ UTL00001
              _ LFU00001

IML Selection
Parameter
w340
w341

Subdirectory
Name
.....
CTL00001

PF: 3=Quit          12=Process
    
```

Figure 6-3. IML Source Selection Panel

- Type a **1** (Select) in the space provided before each subdirectory you want used during an IML.
 

**Note:** If the UTL and LFU subdirectories are both present, select only one to be the subdirectory used during an IML.
- Type a **2** (Deselect) in the space provided before each subdirectory you do not want used during an IML.

## Performing Media Management

### **Step 7** Press ENTER.

- If the responses are valid, a message indicates that all responses are correct and you are prompted to press PF12.
- If a response is not valid, the response is highlighted. A 4-digit status code and message displayed on the message line explain why the response is not valid. (Refer to *3174 Status Codes* for an explanation of the status codes.)
  - a. Correct the highlighted response.
  - b. Press ENTER. The status code changes to explain any other responses that are not valid.
  - c. Continue correcting responses until none are highlighted. A message indicates that all responses are correct after the ENTER key is pressed.

### **Step 8** Press PF12 to process.

The responses are saved and the selected subdirectory names appear under the Subdirectory Selection Name section on the right side of your screen. A series of 8 periods will appear in the subdirectory name fields not selected for IML.

## What's Next?

You can:

- Change your selections.
- Press PF3 to return to the Media Management Menu and select an option.
- Press PF3 twice to return to the Master Menu. See the "Worksheet and Task Tables" on page 1-7 to locate the information for the procedure you have chosen or to determine the next procedure to perform.

## Subdirectory Deletion Procedure

If you are not familiar with Media Management, you may wish to review introductory material and PF keys. This material begins on page 6-3.

**Step 1** If you have not previously displayed the Master Menu (Chapter 1), do so now. (If you have the Media Management Menu displayed, go to Step 4.) To display the Master Menu, see "Displaying the Master Menu" on page 1-4 for instructions.

**Step 2** On the Master Menu, type **7** after `Select ==>`.

**Step 3** Press ENTER.

The Media Management Menu appears on the screen.

\_\_\_ Media Management Menu \_\_\_

Select Option; press ENTER

Option	Description
1	Select/Deselect IML Source
<b>2</b>	<b>Delete Subdirectory</b>
3	Display Disk Information
4	Create Diskette

Select==> 2

PF: 3=Quit

Figure 6-4. Media Management Menu

**Step 4** Type **2** after `Select ==>` and press ENTER.

**Step 5** Verify drives.

The following prompt appears on your screen.

Available drives: 3 4      Select Drive ==> 3

Select Drive ==> is defaulted to the first available fixed disk drive installed. A message prompts you to verify the default drive selection.

- a. If you do not want to use the default drive selection, type the fixed disk drive number that you want to use after `Select Drive ==>`.
- b. Press ENTER.

## Performing Media Management

**Step 6** The Subdirectory Deletion panel appears. It lists the subdirectories on the drive you specified.

```
          ___ Subdirectory Deletion ___
                                     Drive 3

Type 'X' to delete subdirectory; press ENTER

  _ CTL00001
  _ UTL00001
  _ DSL00001
  _ LIB00001
  _ LFU00001
```

PF: 3=Quit

*Figure 6-5. Subdirectory Deletion Panel*

- a. Type an uppercase **X** in the space provided before each subdirectory name you want deleted from the fixed disk.
- b. Press ENTER.

A message displaying the number of subdirectories to be deleted and a request for you to press ENTER appear on the message line near the bottom of your screen. Verify that these are the subdirectories you want deleted.

- c. Press ENTER.

The subdirectories you marked with an **X** are deleted and replaced with a series of 8 periods. A message appears on the message line near the bottom of the screen informing you that the deletion is complete.

## What's Next?

You can:

- Delete more subdirectories.
- Press PF3 to return to the Media Management Menu and select an option.
- Press PF3 twice to return to the Master Menu. See the "Worksheet and Task Tables" on page 1-7 to locate the information for the procedure you have chosen or to determine the next procedure to perform.



## Display Disk Information Procedure

If you are not familiar with Media Management, you may wish to review introductory material and PF key functions. This material begins on page 6-3.

**Step 1** If you have not previously displayed the Master Menu (Chapter 1), do so now. (If you have the Media Management Menu displayed, go to Step 4.) To display the Master Menu, see “Displaying the Master Menu” on page 1-4 for instructions.

**Step 2** On the Master Menu, type **7** after Select ==>.

**Step 3** Press ENTER.

The Media Management Menu appears on the screen.

```

                ___ Media Management Menu ___

Select Option; press ENTER

Option      Description
   1        Select/Deselect IML Source
   2        Delete Subdirectory
   3        Display Disk Information
   4        Create Diskette
    
```

Select==> 3

PF: 3=Quit

Figure 6-6. Media Management Menu

**Step 4** Type **3** after Select ==> and press ENTER. The Media Management Menu appears on the screen with the available drives prompt displayed.

Available drives: 1 2 3 4    Select Drive ==>

**Step 5** Type in the number of the diskette drive or fixed disk drive after Select Drive ==> and press ENTER.

- If you selected diskette drive 1 or 2, the panel shown in Figure 6-7 on page 6-12 is displayed.
- If you selected fixed disk drive 3 or 4, the panel shown in Figure 6-8 on page 6-12 is displayed.

## Performing Media Management

The panels shown here are examples.

**Step 6** After viewing the panel, press PF3 to return to the Media Management panel. See “What’s Next” on page 6-14.

```

      ___ Display Disk Information ___
                                     Drive 2
Disk      Microcode  Maintenance  Product   Comments
          Level      Level         Name
-----
UTILITY  A05.00     89200      3174     .....
  
```

PF: 3=Quit

Figure 6-7. Example Diskette Information Panel

```

      ___ Display Disk Information ___
                                     Drive 3
Disk      Microcode  Maintenance  Product   Comments
          Level      Level         Name
-----
LIB00001  .....         .....         3174     Use CSC Utility to view
CTL00001  B2.00          89200         3174     .....
UTL00001  .....         .....         ....     .....
LFU00001  B2.00          89200         3174     .....
DSL00001  A03.00         .....         3020     .....
          002.00         .....         3290     .....
          002.00         .....         3179     .....
          002.00         .....         3193     .....
  
```

PF: 3=Quit

Figure 6-8. Example Fixed Disk Information Panel

## Create Diskette Procedure

If you are not familiar with Media Management, you may wish to review introductory material and PF key functions. This material begins on page 6-3.

**Step 1** If you have not previously displayed the Master Menu (Chapter 1), do so now. (If the Media Management Menu is displayed, go to Step 4.) To display the Master Menu, see “Displaying the Master Menu” on page 1-4 for instructions.

**Step 2** On the Master Menu, type **7** after `Select ==>`.

**Step 3** Press ENTER.

The Media Management Menu appears on the screen.

```

                ___ Media Management Menu ___

Select Option; press ENTER

Option      Description
   1      Select/Deselect IML Source
   2      Delete Subdirectory
   3      Display Disk Information
   4      Create Diskette

Select==>  4

PF: 3=Quit
    
```

Figure 6-9. Media Management Menu

**Step 4** Type **4** after `Select ==>` and press ENTER.

The available drives prompt appears at the bottom of the screen.

Available drives: Utility ==> Target ==>

If the Target ==> field is not already completed, choose the drive you wish to be the target.

## Performing Media Management

**Step 5** Press ENTER.

The insert diskette prompt appears at the bottom of the screen.

**Step 6** Insert the *Target* diskette into the chosen drive, close the drive door, and press ENTER.

The Create Diskette Panel appears.

```
          ___ Diskette Creation ___
                                           Drive 2

Type an X to select which diskette is to be created.

- Dump Diskette
- Trace Diskette
```

PF: 3=Quit

PF: 12=Process

Figure 6-10. Create Diskette Panel

**Step 7** Type an X to select the diskette to be created.

**Step 8** Press ENTER.

- If there are no errors, a message indicates that responses are correct.
- If there are errors, the highlighted error message is presented in the message area of the screen. Correct any errors according to the displayed error messages. You may need a copy of the *3174 Status Codes*.

**Step 9** Press PF12. A message appears at the bottom of the screen when processing is completed.

## What's Next?

You can:

- Select another option from the Media Management Menu.
- Press PF3 again to return to the Master Menu. See the "Worksheet and Task Tables" on page 1-7 to locate the information for the procedure you have chosen or to determine the next procedure to perform.

---

## Chapter 7. Identifying Customizing Keyboards

Identifying the Customizing Keyboard . . . . .	7-3
PF Keys for Identify Customizing Keyboard . . . . .	7-4
Identify the Customizing Keyboard Procedure . . . . .	7-5
What's Next? . . . . .	7-5



---

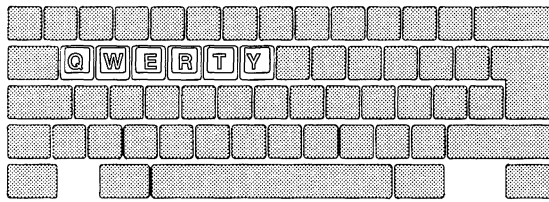
## Identifying the Customizing Keyboard

If your keyboard has the QWERTY layout (see the figure), you do not need to select this procedure. If you do not have the QWERTY layout, you need to identify the customizing keyboard when you first customize with a Utility disk and when you recustomize with a Utility disk.

**When you first customize with a Utility disk:** If the keyboard of the display station being used for customizing is in one of these languages, you must identify it *before* you begin any other customizing procedure:

- Austrian/German
- Belgian
- French, AZERTY
- Italian
- Japanese English
- Japanese Katakana

The default is a QWERTY keyboard layout, which is available in many languages. On a QWERTY layout, the first six characters on the left side of the top row of alphabetic characters are Q-W-E-R-T-Y. The same naming scheme is also used for other types of layouts, for example, the AZERTY layout.



After you complete the Identify Customizing Keyboard procedure, the customizing keyboard you specify will be supported on that Utility disk for all the other customizing procedures.

**When you recustomize with a Utility disk:** If you want to change keyboards, or if you do not know what keyboard was used when the Utility disk was previously customized, select the Identify Customizing Keyboard procedure. On the Customizing Keyboard panel, the keyboard layout that is currently identified on the Utility disk is highlighted and the cursor is next to it. If you want, you can select a different type of keyboard layout.

The following terminals can be used as the customizing display station:

- 3178
- 3179 Model 1 operating in native or 3279-emulation mode
- 3180 operating in native or 3278-emulation mode
- 3191
- 3192
- 3194 operating in control unit terminal (CUT) mode
- 3270 Personal Computer (PC) with 3278/3279 emulation (in CUT mode)
- 3278 (except Model 1)
- 3279
- 5550 family operating in CUT mode
- 5578 operating in CUT mode
- 6150 RT PC\*
- 6151 RT PC

### PF Keys for Identify Customizing Keyboard

You call up a specific function of the customizing program by pressing a PF key.

These two PF keys appear on the panel you use during the Identify Customizing Keyboard procedure:

Use the following table to reference Customizing Keyboard PF key functions.

<b>PF Keys:</b>	<b>Function:</b>
PF3	PF3 (Quit) quits the procedure without saving any responses since the last ENTER key was pressed. The Master Menu appears on your screen.
PF12	PF12 (Process) processes the options specified during this procedure. <b>Note:</b> If you are using a keyboard without PF12, use PA2.

**Note:** PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.



## Identify the Customizing Keyboard Procedure

If you have not already done so, you may wish to review the introductory material beginning on page 7-3.

**Step 1** Display the Master Menu. (See “Displaying the Master Menu” on page 1-4 for directions.)

**Step 2** Type **K** after Select ==> and press ENTER.  
The Customize Keyboard panel appears on your screen.

```

      ___ Customizing Keyboard Type ___

Move cursor to desired keyboard type; Press ENTER

  _ Austrian/German
  _ Belgian
  _ French AZERTY
  _ Italian
  _ Japanese English
  _ Japanese Katakana
  _ QWERTY

PF: 3=Quit                12=Done
  
```

Figure 7-1. Identify Customizing Keyboard Panel

The cursor is in front of the current keyboard choice, which is highlighted. If no other keyboard type has been specified, the cursor is in front of QWERTY, the default selection.

**Step 3** Put the cursor in front of the selection you wish to use and press ENTER.

Your selection is highlighted on the screen.

**Step 4** Press PF12 to save your input and to return to the Master Menu.

## What's Next?

See “Worksheet and Task Tables” on page 1-7 to locate the information for the procedure you have chosen or to determine the next procedure to perform.



# Appendix A. 3174 Configuration Questions Reference

You are authorized to copy the Configuration Questions Reference.

Configuration Questions—Worksheet 1		
Question:		Response:
098:	Online Test Password	Up to 8 alphanumeric characters
099:	Product Assistance Data	Up to 68 alphanumeric characters
100:	3174 Model Designation	3174 Model Number
101:	Host Attachment	(1-7, M) Host attachment type
103:	Non-Standard Operation Selection	16 hexadecimal digits (0-9, A-F)

Configuration Questions—Worksheets 3 through 9S		
Question:		Response:
104:	Controller Address	2-character hexadecimal address
105:	Upper Limit Address	2-character hexadecimal address
106:	Token-Ring Network Address and SAP - 3174	A hexadecimal address and service access point
107:	Token-Ring Network Address and SAP - Gateway	A hexadecimal address and service access point
108:	Unique Machine Identifier	7 alphanumeric characters
110:	MLT Storage Support	Level 0-8 or exact MLT storage amount
116:	Individual Port Assignment	1, 2, or 4 alphanumeric characters
<b>Note:</b>	0, 1, SX, and SXAY provide automatic assignment.	
117:	Port Assignment	Panel
118:	Port Address	Panel
121:	Keyboard Language	2-digit language code
123:	Country Extended Code Page Support	0 = No CECP 1 = CECP
125:	Miscellaneous Feature Options (A)	8 digits (0 or 1)
126:	Miscellaneous Feature Options (B)	8 digits (0 or 1)
127:	RTM Definition	2 digits
128:	Boundaries and Interface Specification	Panel
132:	Alternate Base Keyboard Selection	4 digits (0, 1, or 2)
136:	Standard Keyboard Layouts	4 digits (0 or 1)
137:	Modified Keyboard Layouts	4 digits (0 or 1)

Configuration Questions—Worksheets 3 through 9S		
Question:		Response:
138:	Standard Keypad Layouts	0 = National Language Numeric 1 = Data Entry 2 = Program Function
139:	Concurrent Communication Keyboard Language	00 = Same language as primary host on that link 01 = English (U.S.A.) 02 = English (U.S.A.) ASCII-7
141:	Magnetic Character Set	A = None B = Numeric C = Alphanumeric (auto entry; secure data) D = Alphanumeric (auto entry; all data)
150:	Token-Ring Network Gateway Controller	0 = Not a gateway controller 1 = Gateway controller
165:	Compressed Program Symbols	0 = Compressed PS data not sent 1 = Compressed PS data sent
166:	Attribute Select Keypad	A = Attribute Select Keypad not in use B = Attribute Select Keypad in use without numeric lock C = Attribute Select Keypad in use with numeric lock
168:	Additional Extension-Mode Key Definition	0 = None 1 = Home key 2 = Print ID key
173:	DFT Options	8 digits (0-No or 1-Yes)
175:	DFT Password	6 numeric digits
176:	BSC Enhanced Communication	0 = No 1 = Yes
179:	Local Format Storage	3 digits (0, 1, 2, or 3)
213:	Between Bracket Printer Sharing	0 = No 1 = Yes
215:	PU Identification	5 alphanumeric characters
220:	Alert Function	0 = None 1 = No operator-generated alert message capability 2 = Operator-generated alert message capability from port 26-00 and 27-00 3 = Operator-generated alert message capability; all ports
221:	3174 Alert Control Point	0 = This host is not the alert control point for the 3174. 1 = This host is the alert control point for the 3174.
222:	Support of Command Retry	0 = No 1 = Yes

## Configuration Questions Reference

Configuration Questions—Worksheets 3 through 9S		
Question:	Response:	
<b>223:</b> Attention Delay Value	2 digits (whole milliseconds)	
<b>224:</b> Mode of Data Transfer	0 = Interlocked mode; normal data transfer 1 = Data streaming mode; 1.25 Mbps 2 = Interlocked mode; high-speed data transfer 3 = Data streaming mode; 2.5 Mbps	
<b>225:</b> Channel Burst Size	0 = 002 bytes per burst 1 = 004 bytes per burst 2 = 008 bytes per burst 3 = 016 bytes per burst 4 = 032 bytes per burst 5 = 064 bytes per burst 6 = 256 bytes per burst 7 = 512 bytes per burst	
<b>240:</b> Controller Logical Address	One alphanumeric digit (from 0-9, A-F)	
<b>241:</b> RU Maximum Size	0 = 4 KB RU 1 = 8 KB RU	
<b>310:</b> CDSTL Operation	0 = Operation: Nonswitched, or switched line (US or Canada), or in DTR/DSR mode (not Canada). 1 = Connection on a switched line via the CCITT 108.1 interface operating in the CDSTL mode.	
<b>313:</b> NRZ or NRZI Encoding	0 = Nonreturn to zero encoding 1 = Nonreturn to zero inverted encoding	
<b>317:</b> Telecommunication Facilities	0 = Nonswitched facilities 1 = Half-duplex SNBU operation 2 = Switched networks	
<b>318:</b> Full- or Half-Speed Transmission	0 = Full-speed Transmission 1 = Half-speed Transmission	
<b>332:</b> X.25 Options	Panel	
<b>340:</b> RTS Control Response	0 = Controlled RTS 1 = Permanent RTS 2 = BSC special controlled RTS	
<b>360:</b> X.21 Switched Retry	00 = Switched feature or Retry not in use 01-99 = Number of times to retry an incoming or outgoing call	
<b>361:</b> X.21 Switched Retry Timing	00 = Switched feature not in use, or Retry not in use 01-20 = Number of seconds between retries	
<b>362:</b> X.21 Switched Options	8 digits (0-No and 1-Yes)	
<b>365:</b> X.21 Data Transfer Delay	0 = N/A 1 = No delay 2 = Data Transfer Delay	
<b>367:</b> X.21 Switched Short-Hold Mode	0 = No 1 = Yes	

Configuration Questions—Worksheets 3 through 9S		
Question:	Response:	
<b>368:</b> X.21 Switched short-Hold Mode Dial Number	Up to 14 numeric characters (dial number of the 3174)	
<b>370:</b> Maximum Inbound I-Frame Size	0 = 265-byte Maximum I-Frame 1 = 521-byte Maximum I-Frame	
<b>371:</b> X.21 Switched Dial Digits	31 numeric digits (0-9)	
<b>372:</b> Autocall/Autodisconnect	2 numeric digits (0, 1, or 2)	
<b>382:</b> Maximum Ring I-Frame Size	4 numeric characters <ul style="list-style-type: none"> <li>From 265 to 2042 bytes for 4-Mbps Token-Ring Adapters</li> <li>From 265 to 2057 bytes for 16/4-Mbps Token-Ring Adapters</li> </ul>	
<b>383:</b> Token-Ring Network Maximum Out	One numeric character (from 1 to 7)	
<b>384:</b> Ring Speed of the Token-Ring Network	0 = 4 Mbps - Normal token release 1 = 16 Mbps - Normal token release 2 = 16 Mbps - Early token release	

X.25 Options—Worksheet 13		
Question:	Response:	
<b>400:</b> Network Type	4 numeric digits (0 or 1)	
<b>401:</b> Circuit Type	1 = Permanent virtual circuit (PVC) 2 = Incoming call (from host) only (SVC) 3 = Outgoing call (to host) only (SVC) 4 = 2-way call (SVC).	
<b>402:</b> Logical Channel Identifier	0000-4095. Channel identifier for PVC circuit specified in question 401.	
<b>409:</b> X.25 Keyboard Support Options	8 digits (0-No or 1-Yes)	
<b>420:</b> Incoming Call Options	8 digits (0-No or 1-Yes)	
<b>421:</b> Outgoing Call Options	8 digits (0-No or 1-Yes)	
<b>423:</b> Host DTE Address	Up to 15 numeric digits.	
<b>424:</b> 3174 DTE Address	Up to 15 numeric digits.	
<b>430:</b> Negotiated Packet Size	0 = 64-byte packet 1 = 128-byte packet 2 = 256-byte packet 3 = 512-byte packet	
<b>431:</b> Packet Sequence Numbering	0 = Modulo 8 1 = Modulo 128.	
<b>432:</b> Negotiated Window Size	01-07 = Modulo 8 range (if 431=0) 01-11 = Modulo 128 range (if 431=1).	
<b>433:</b> K-Maximum Out	1-7. Maximum number of link level I-frames.	
<b>434:</b> Nonstandard Default Packet Size	0 = 64-byte packet 1 = 128-byte packet 2 = 256-byte packet 3 = 512-byte packet	

## Configuration Questions Reference

X.25 Options—Worksheet 13		
Question:	Response:	
<b>435:</b> Nonstandard Default Window Size	01-07 = Modulo 8 range (if 431=0) 01-11 = Modulo 128 range (if 431=1).	
<b>440:</b> Throughput Class Negotiation	One digit (3-9 or A-D)	
<b>441:</b> Closed User Group	00-99. Include CUG facility in outgoing Call Request packet.	
<b>442:</b> Recognized Private Operating Agency	0000-9999 = RPOA	
<b>450:</b> Link Level Transmit Timeout	0001-2540. Specified in 0.1-second intervals.	
<b>451:</b> Number of Retries	01-99. Number of retries required by the network.	
<b>452:</b> Connection Identifier	8-character maximum (0-9, A-Z or blanks).	
<b>453:</b> Connection Options	8 digits (0 or 1)	
<b>461:</b> Lowest Incoming Channel	0000-4095	
<b>462:</b> Highest Incoming Channel	0000-4095	
<b>463:</b> Lowest 2-Way Channel	0000-4095	
<b>464:</b> Highest 2-Way Channel	0000-4095	
<b>465:</b> Lowest Outgoing Channel	0000-4095	
<b>466:</b> Highest Outgoing Channel	0000-4095	

CSCM Questions—Worksheet 14		
Question:	Response:	
<b>500:</b> CSCM Unique	0 = No CSCM 1 = CSCM in use as a Network Site Controller. 2 = CSCM in use as a Central Site Controller.	
<b>501:</b> Network ID	Up to 8 alphanumeric characters (first character must be uppercase alphabetic; no spaces/blanks).	
<b>502:</b> Logical Unit Name	Up to 8 alphanumeric characters (first character must be uppercase alphabetic; no spaces/blanks).	

AEA Configure Questions—Worksheet 17		
Question:	Response:	
<b>700:</b> Configure the AEA Feature	0 = Turns off AEA. 1 = Turns on AEA.	
<b>702:</b> Control Key Assignment	Single digit (0 or 1)	
<b>703:</b> Request MLT for AEA	Single digit (0 or 1)	
<b>710:</b> Miscellaneous ASCII Feature Options (A)	8 digits (0-No or 1-Yes)	
<b>711:</b> Miscellaneous ASCII Feature Options (B)	8 digits (0-No or 1-Yes)	
<b>712:</b> Miscellaneous ASCII Feature Options (C)	8 digits (0-No or 1-Yes)	

AEA Configure Questions—Worksheet 17		
Question:	Response:	
<b>713:</b> Miscellaneous ASCII Feature Options (D)	8 digits (0-No or 1-Yes)	

AEA Station Set Questions—Worksheet 20		
Question:	Response:	
<b>721:</b> Station Set Name	Up to 24 alphanumeric characters (blanks permitted).	
<b>722:</b> Station Type	For responses, see <i>3174 Planning Guide</i> .	
<b>723:</b> Port Set Name	Up to 8 alphanumeric characters (blanks permitted).	
<b>725:</b> Host Connection Menu Option	0 = Users can only select the defined Default Destination from the Host Connection Menu. 1 = Users can select alternate host connections from the Host Connection Menu.	
<b>731:</b> Flow Control Type	0 = None 1 = XON/XOFF 2 = DTR (for nonswitched port types) 3 = RFS (for direct port types)	
<b>732:</b> XON/XOFF Transmission Resumption Trigger	1 = Resume after any character is received 2 = Resume only after XON is received.	
<b>733:</b> Line Speed	0 = Autobaud/Autoparity 1 = 300 bps 2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5 = 4800 bps 6 = 9600 bps 7 = 19 200 bps	
<b>734:</b> Line Speed (ASCII Host Upper Limit)	2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5 = 4800 bps 6 = 9600 bps 7 = 19 200 bps	
<b>735:</b> Parity	0 = Autobaud/Autoparity 1 = Odd 2 = Even 3 = None 4 = Space 5 = Mark	
<b>736:</b> Stop Bits	1 = 1 stop bit 2 = 2 stop bits	
<b>737:</b> Maximum Modem Line Speed	1 = 300 bps 2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5 = 4800 bps 6 = 9600 bps 7 = 19 200 bps	
<b>741:</b> Switched Disconnect Timeout (3270 Host Only)	3-digit number ranging from 000 to 254. Represents a number of minutes (use leading zeros).	
<b>742:</b> Inactivity Timeout	Value from 0 to 254. Represents a number of minutes (use leading zeros).	

## Configuration Questions Reference

AEA Station Set Questions—Worksheet 20		
Question:	Response:	
<b>743:</b> Prompt for Universal/Specific Keyboard Map	0 =	Do not display prompt
	1 =	Display prompt
<b>744:</b> Number of Bits per Character	0 =	7 bits per character
	1 =	8 bits per character
<b>745:</b> ASCII Display Character Set	0 =	US ASCII
	1 =	IBM 3101 CS1
	2 =	IBM 316x CS1 and CS2
	3 =	ISO 8859/1.2
	4 =	DEC MCS
	5 =	DEC NRC
<b>746:</b> Translate Option	0 =	Default table
	1 =	UDX-1
	2 =	UDX-2
	3 =	UDX-3
<b>751:</b> Data Stream Supported by the ASCII Host	1 =	VT100 data stream
	2 =	3101 data stream
	3 =	Data General D210 data stream
	4 =	VT220 data stream 7-bit control
	5 =	VT220 data stream 8-bit control
<b>752:</b> ASCII Host Phone Number	Up to 48 alphanumeric characters. Phone number of the ASCII host.	
<b>761:</b> Auto XON/XOFF (DEC VT100/VT220)	0 =	Disabled
	1 =	Enabled
<b>762:</b> Wraparound Option (DEC VT100/VT220)	0 =	Disabled
	1 =	Enabled
<b>763:</b> New Line Option (DEC VT100/VT220)	0 =	Disabled
	1 =	Enabled
<b>764:</b> Margin Bell (DEC VT100/VT220)	0 =	Disabled
	1 =	Enabled
<b>765:</b> DEC Host ASCII Character Set (DEC VT100/VT220)	0 =	DEC NRC
	1 =	DEC MCS
<b>771:</b> Automatic Line Feed for Cursor Control (IBM 3101)	0 =	Disabled
	1 =	Enabled
<b>772:</b> Carriage Return/Carriage Return-Line Feed Selection (IBM 3101)	0 =	Carriage Return
	1 =	Carriage Return and Line Feed
<b>773:</b> Automatic New Line for Cursor Control (IBM 3101)	0 =	Disabled
	1 =	Enabled
<b>774:</b> Scrolling (IBM 3101)	0 =	Disabled
	1 =	Enabled
<b>775:</b> Line Turnaround Character (IBM 3101)	0 =	EOT
	1 =	CR
	2 =	XOFF
	3 =	ETX
<b>776:</b> IBM ASCII Host Character Set	0 =	ISO - 8859/1.2
	1 =	IBM 3101 CS1
	2 =	IBM 316x CS1 and CS2
<b>781:</b> Attached Printer Prompt	0 =	No
	1 =	Yes
	2 =	Assumed (no prompt)
<b>782:</b> Use of Form Feed	0 =	Printer does not support form feed
	1 =	Printer supports form feed

AEA Station Set Questions—Worksheet 20		
Question:	Response:	
<b>783:</b> Page Length	Value from 1 to 255 (use leading zeros).	
<b>784:</b> Printer Character Set	1 =	US ASCII
	2 =	ISO - 8859/1.2
	3 =	DEC MCS
	4 =	PC code page 850
	5 =	UDX-1
	6 =	UDX-2
	7 =	UDX-3
<b>785:</b> ASCII Printer Options	8 digits (0-No or 1-Yes)	
<b>786:</b> Page Width	Value from 001 to 255.	
<b>787:</b> LU 1 SCS Transparency Translation	0 =	LU 1 transparent data is not translated
	1 =	LU 1 transparent data is translated.

Device Definition Questions—Worksheet 22		
Question:	Response:	
<b>800:</b> Printer Authorization Matrix	00 =	Do not define the PAM
	10 =	Define the PAM. Printers on HG 27 cannot be defined on the PAM.
	11 =	Define the PAM. Printers on HG 27 can be defined on the PAM.
	01 =	Response is not valid
<b>801:</b> Logical Terminal Assignment	0 =	Do not define the LTA
	1 =	Define the LTA for port 26-00 and 27-00.
	2 =	Define the LTA for individual ports.
<b>802:</b> Prompts for Extended Vital Product Data (VPD)	0 =	Do not define Extended VPD
	1 =	Define Extended VPD

Token-Ring Gateway Questions—Worksheet 25		
Question:	Response:	
<b>900:</b> Token-Ring Network Address for the Gateway	12-character hexadecimal address and 2-character SAP. (Should be locally administered.)	
<b>905:</b> Ring Error Monitor	0 =	No
	1 =	Yes
<b>908:</b> Link Subsystem Name	8 alphanumeric characters.	
<b>911:</b> Ring Speed of the Token-Ring Gateway	One digit (0-2)	
<b>912:</b> Group Poll Address	2-character hexadecimal address	
<b>940:</b> Ring Address Assignment	Panel	
<b>941:</b> Ring Transmission Definition	Panel	

---

## Appendix B. 3174 Establishment Controller Overview

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## Introducing the Utilities

The 3174 utilities allow you to customize and manage the controller microcode. The 3174 microcode must be customized before you can operate the controller. You start all 3174 utilities by loading the 3174 Utility diskette and selecting the utility you wish to perform from a menu called the Master Menu.

Two types of utilities are available: customizing utilities and support utilities.

Customizing utilities consist of:

- Customize the Control Disk
- Central Site Customizing
- Identify Customizing Keyboard

Support utilities consist of:

- Merge DSL
- Copy Files
- Diagnostics
- Microcode Upgrade
- Media Management

## Customizing Utilities

**Customize the Control Disk:** is a utility that you must perform before you can use your 3174. This utility tailors the microcode for each controller and its attached devices and consists of the following procedures:

- Configure
- Define Devices
- Merge RPQs
- Modify Keyboards
- Define AEA

**Central Site Customizing:** is a utility that allows you to control the customization data for all of your controllers from one central point. Using this utility is described in the *3174 Central Site Customizing User's Guide*.

**Identify Customizing Keyboard:** allows you to use keyboards with layouts other than QWERTY when you are doing customization utilities.

A detailed description of these utilities is provided in Appendix D, "Customizing Utilities" on page D-1.

## Support Utilities

**Merge DSL:** If your controller has an AEA or distributed function terminals (DFTs) attached, Downstream Load (DSL) microcode is required. The adapter and each type of DFT need their own unique microcode. DSL Merge allows you to merge up to four DSL diskettes onto one DSL diskette or onto a fixed disk. This allows the 3174 to support the AEA and multiple types of DFTs. See Chapter 3, "Merging DSL Code" for the procedure and a detailed description.

## Introducing the Utilities

**Copy Files:** Copy Files allows you to copy complete diskettes or specific files from diskettes onto another diskette or onto a fixed disk. This utility also allows you to copy a complete diskette image from a fixed disk or specific files of a diskette image onto a diskette or another fixed disk.

For new controllers with fixed disks or if a fixed disk feature has just been installed in an existing controller, you must perform this utility before you can use the fixed disk. Copy options include:

- Full Copy
- Modify and Copy
- Copy Customizing Data
- Copy Device Definition
- Copy Patches
- Copy Modified Keyboards
- Copy RPQs

See Chapter 4, “Copying Files” for the procedure and a detailed description.

**Diagnostics:** This utility allows you to verify the proper operation of the 3174 hardware. Diagnostics are used when the controller is first set up. After the controller becomes operational, diagnostics are used to help isolate a problem when controller failures occur. Using the diagnostics is described in *3174 Customer Problem Determination*.

**Microcode Upgrade:** Microcode Upgrade allows you to migrate from your current release of 3174 microcode to a newer release. New releases of 3174 microcode are created to support new function, such as a new feature or when improvements to existing microcode releases occur. See “Determining Maintenance and Microcode Levels” on page 4-9 for more information.

**Media Management:** This utility allows you to manage the data on fixed disks after the 3174 diskettes required for your controller have been copied onto a fixed disk.

For new controllers with fixed disks or if a fixed disk feature has just been installed in an existing controller, you must perform this utility before you can use the fixed disk. You may also create dump and trace diskettes from your controller. Media Management Options include:

- Select/Deselect IML Source
- Delete Subdirectory
- Display Disk Information
- Create Diskette

See Chapter 6, “Performing Media Management” for the procedure and a detailed description.

---

## What Microcode Will You Use?

Microcode is a set of instructions the controller uses to operate and perform the utilities. Initially, operational microcode for the 3174 is supplied or purchased on a diskette. This microcode can be copied from a diskette onto a fixed disk (except for RPQ microcode) as separate diskette images. Diskettes and fixed disks are used to load and store the operational microcode and customization data.

The word “disk” is used as the generic term for the media on which the microcode is stored. A disk can be either a diskette or a fixed disk. You can use several different disks.

**3174 Utility Disk:** The UTL disk contains the microcode necessary to run various utilities, such as customizing and copying disks for a backup. A diskette containing this microcode arrives with the controller.

**3174 Control Disk:** Once the CTL disk is customized, it contains the microcode necessary to make the 3174 operational. After the Control disk has been customized, it contains the 3174 cluster parameters and, if applicable, RPQs, merged with the code. A diskette with this microcode arrives with the controller.

**3174 Limited Function Utility (LFU) Disk:** The LFU disk contains the microcode to run diagnostics, copy files, and identify the customizing keyboard. It is used in networks that are under central site control to limit the number of options that can be performed and prevent unauthorized reconfiguration of the controller. A diskette with this microcode arrives with network controllers that are ordered under specify code 9005. (See Appendix F, “Limited Function Utility (LFU) Disk” for more information.)

**RPQ Diskettes:** An RPQ (request for price quotation) is an alteration or addition to the functional capabilities the controller provides. An RPQ diskette is requested by a customer and contains the microcode for up to 30 RPQs. You can choose RPQs from the RPQ diskette to merge onto the Control disk for use during operation. You can also delete RPQs from the Control disk. A maximum of 10 RPQs will fit on the Control disk. Some installations may choose to use several RPQs; others may not use any.

**DSL Disks:** The DSL (Downstream Load) disk contains the diagnostics, system bringup code, and microcode for a display station that needs the controller to downstream-load this code to it—for example, the 3290 Information Panel. The DSL disk is also used to load the microcode necessary to support the AEA. You can merge the code from one DSL disk onto another DSL disk. You can have the DSL code for as many as four types of devices, or three types of devices and the AEA, on each DSL disk. If there are no DSL displays in the cluster and you are not configuring for the AEA, you will not need to use a DSL disk.

**Library Disk:** The LIB disk is used to store customization data for all controllers in a network. This disk is created by using the Central Site Customizing Utility. Refer to the *Central Site Customizing User's Guide*.

### What Are Microcode Releases?

Periodically, IBM makes available upgraded versions of the Utility and Control diskettes that include new functions, such as the ability to handle a new type of display station. Each upgrade is assigned a microcode release level, for example, Configuration Support B Release 1. A diskette label identifies the microcode release level. You may have to know the microcode level of a diskette when you are using some of the customizing procedures, for example, the Copy and Microcode Upgrade procedures. This information is provided on page 4-9.

### Which Display Stations Can You Use?

The following terminals can be used as the customizing display station:

- 3178
- 3179 Model 1 operating in native or 3279-emulation mode
- 3180 operating in native or 3278-emulation mode
- 3191
- 3192
- 3194 operating in control unit terminal (CUT) mode
- 3270 PC with 3278/3279 emulation, operating in CUT mode
- 3278 (except Model 1)
- 3279
- 3471
- 3472
- 5550 family operating in CUT mode
- 5578 operating in CUT mode
- 6150 RT PC
- 6151 RT PC

## Front Panel Layout and Diskette Insertion

This section shows the locations of switches, push buttons, and diskette drives. It also contains the procedure for inserting diskettes.

### Controller Front Panel Layout

Notice the location of the switches and push buttons on the front panel of the controller. See Figure B-1, Figure B-2, Figure B-4 on page B-8, Figure B-5 on page B-8, and Figure B-3 on page B-8.

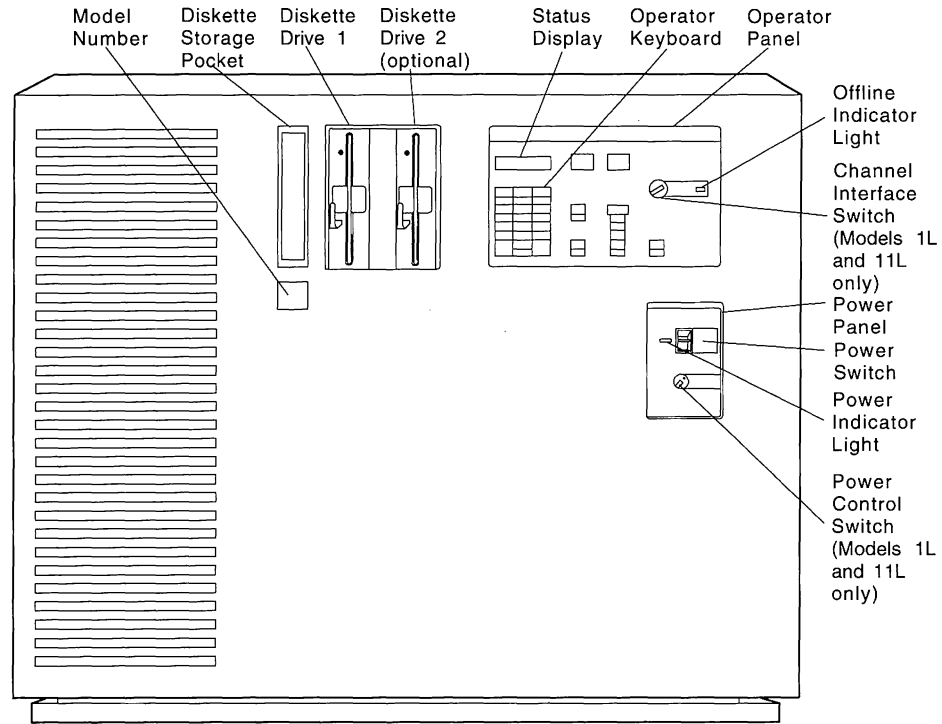


Figure B-1. 3174 Models 1L, 1R, 2R, 3R, 11L, 11R, 12L, 12R, and 13R

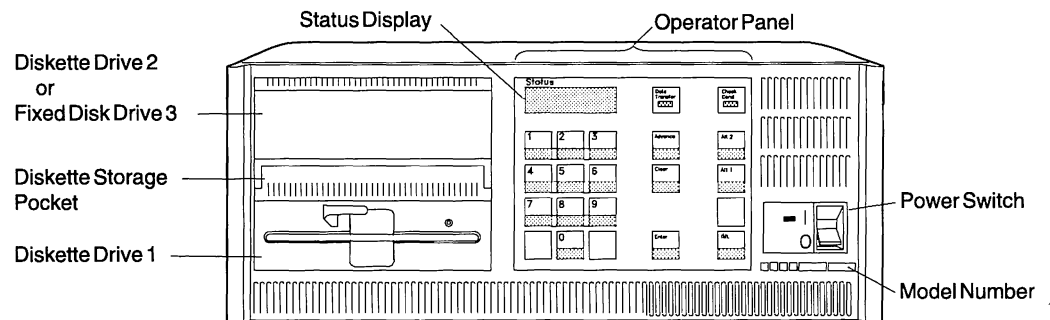


Figure B-2. 3174 Models 51R, 53R, 61R, 62R, and 63R

# Introducing the Utilities

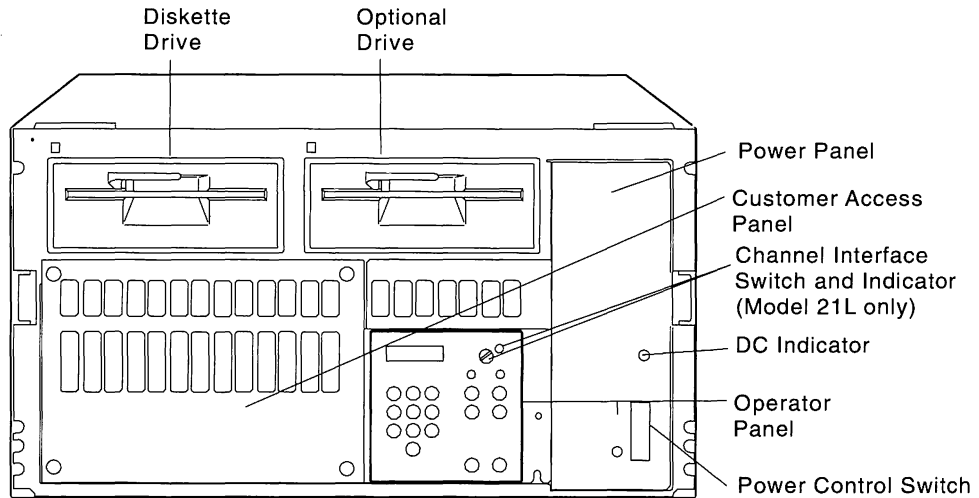


Figure B-3. 3174 Models 21R, 21L, 22L, and 23R

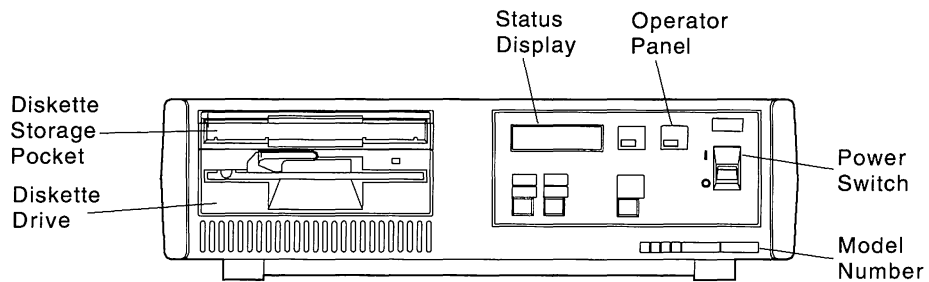


Figure B-4. 3174 Models 91R and 92R

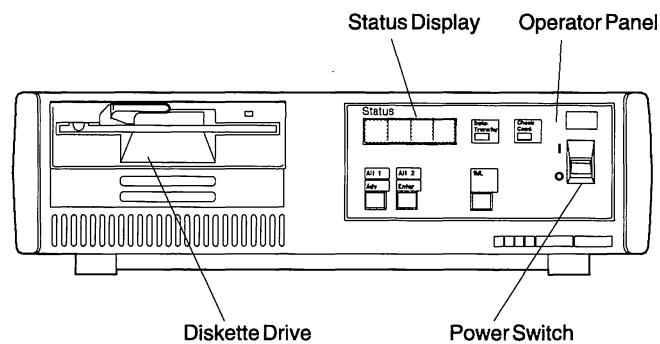
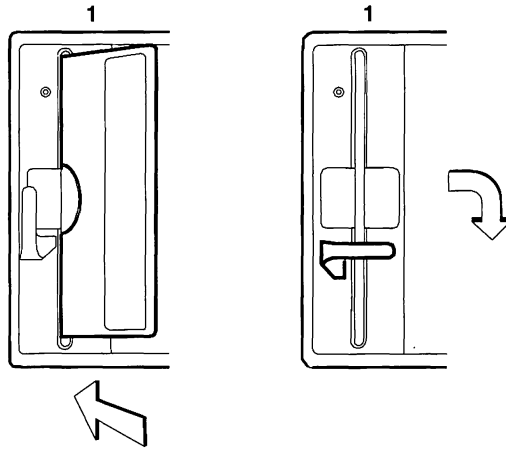


Figure B-5. 3174 Model 90R

## Inserting Diskettes—Models 1L, 1R, 2R, 3R, 11L, 11R, 12L, 12R, and 13R

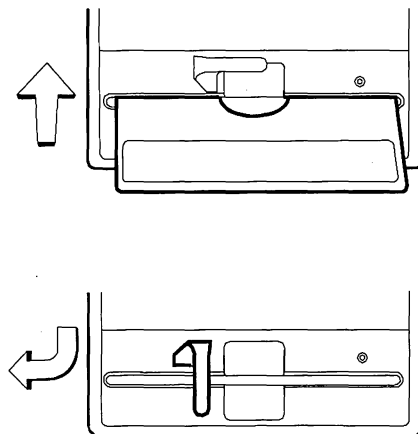
Diskettes for the controller are kept in the storage pocket next to the diskette drives.

1. Remove the diskette from its envelope.
2. Turn the drive lever to the up position.
3. Hold the diskette by the label with the label facing to the *left*.
4. Insert the diskette into a drive.
5. Close the drive by turning the lever down.



## Inserting Diskettes—Models 21L, 21R, 22L, 23R, 51R, 53R, 61R, 62R, 63R, 90R, 91R, and 92R

1. Remove the diskette from its envelope.
2. Turn the drive lever to the up position.
3. Hold the diskette by the label with the label facing *up*.
4. Insert the diskette into a drive.
5. Close the drive by turning the lever down.



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### Fixed-Disk Head Park Procedure

Always perform this procedure before you move a 3174. It is used to secure or "park" the fixed-disk head to avoid possible damage to the fixed disk. This should be the last procedure that is done before you turn off the controller.

- Step 1** Turn on the controller power switch.
- Step 2** Insert a Utility diskette into diskette drive 1.
- Step 3** Press and hold Alt 1.
- Step 4** Press and release IML.
- Step 5** Release Alt 1.
- Step 6** When 40 is displayed, type in **80** and press Enter.
- Step 7** When 4001 is displayed, type in one of the following codes:
  - 03** to park the heads on fixed disk 03
  - 04** to park the heads on fixed disk 04
- Step 8** When 2003 or 2004 is displayed, the heads on the fixed disk are parked in a safe area.
- Step 9** For any other status code, refer to *3174 Status Codes*.
- Step 10** Turn off the controller power switch.



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## Appendix C. Keeping Records

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Duplicate Diskettes .....	C-6



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## Methods of Record-Keeping

There are several methods of record-keeping, including duplicating disks, making local copies of the customizing panels, and making copies of the customizing worksheets. Setting up a record-keeping system now can save you time later. If you do the customizing for dozens—or hundreds—of controllers, it is recommended that you keep several records of the controller customizations, including using the Central Site Customizing procedure. The *3174 Central Site Customizing User's Guide* describes that procedure. This chapter explains other 3174 functions designed to assist you with record-keeping.

When there is a problem with the controller, the operator or IBM service representative looks in the controller for a record of the customization. You can store a set of your local copy customization records in your controller. In Models 1L, 1R, 2R, 3R, 11L, 11R, 12L, 12R, and 13R, you can store the records in a pocket in the controller door. For Models 21R through 23R, 91R, and 92R, store your customization records near the controller. On the face of Models 51R, 53R, 61R, 62R, and 63R, a diskette storage drawer just above Diskette Drive 1 lets you store your customization records.

## Local Copy

The local copy function is an easy-to-use tool for keeping records. You can print a copy of each customization panel on your display screen when you have entered your responses and verified them. Then, you can organize a set of these customization records in controller serial-number order and keep them together in a binder or in a file drawer. Perform the Local Copy procedure as follows.

**Note:** Only non-ASCII printers attached to the Terminal Adapter identified by HG 26 can be used for the local copy at customization time. The printer can be attached to any port other than port 0 of that Terminal Adapter.

**Step 1** Turn on the printer.

You can turn on the printer that you plan to use for local copy before or after you turn on the controller. For local copy, a default Printer Authorization Matrix (PAM) is in operation and authorizes all printer ports for all displays. Therefore, the first authorized available printer you turn on before or during a customization session can be used for local copies, but only during that session.

On the screen of the customizing display station, the printer assignment indicator (Figure C-1 on page C-4) appears in the lower right corner of the screen; *nn* is the printer authorized for local copy. The number *nn*, when it is between 1 and 31, represents the printer's port number on HG 26. When *nn* is 70, the default PAM selects the printer. The local copy goes to the printer at the port with the lowest number. You can specify a different printer by using the Ident function. (Refer to the documentation that describes the display station you are using to find the Ident function.)

## Keeping Records

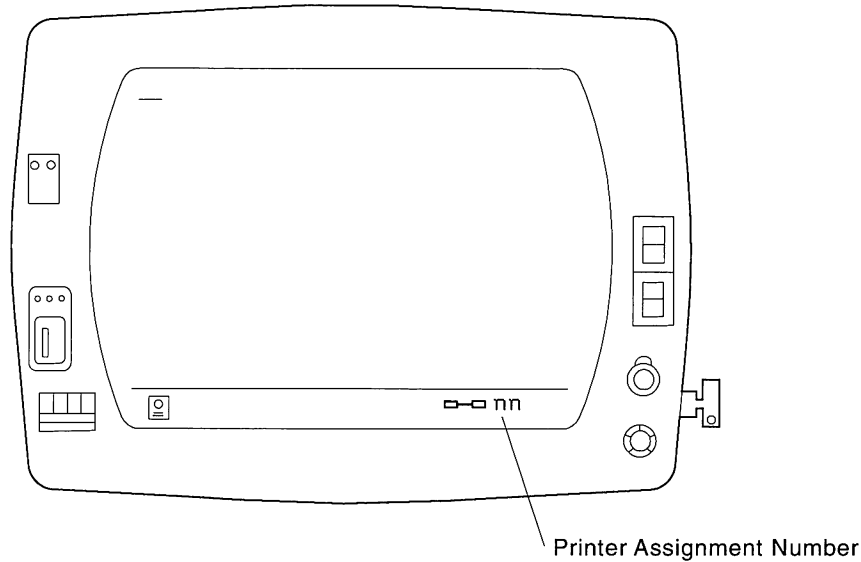


Figure C-1. The Printer Assignment Indicator

### **Step 2** Request a Local Copy.

After you complete a customization panel:

- a. Press ENTER to verify your responses.
- b. Press the Print key to make a copy of the customization panel that is on the screen.

If you request a second copy while the printer is still busy with your first request, the second copy is queued. If a third copy request is made while the printer is still busy with the first, the Operator Retry indicator is displayed in the operator information area. You will have to wait and retry the third local copy request.

If you want to stop a local copy after it has been sent but not yet printed, press the Device Cancel key. (Refer to the documentation that describes the display station you are using for this key.)

### **Step 3** Attach labels to the Printed Copies.

Attach labels to the printed copies of the customization panels giving:

- The serial number of the controller. If you use the controller serial number as your response to configuration question 108 (Unique Machine Identifier), you already have a printed record of the serial number.
- The location of the controller.
- The date of the customization.
- The microcode release level.

## Using the Copy Procedure to Manage Customization Data

You can manage your customization data or microcode in several ways: by the suggested method of electronic distribution (requires the NetView\* DM software package), by using the Central Site Customizing Utility (Refer to the *3174 Central Site Customizing User's Guide* for more information), or by using the Copy utility and mailing the diskettes. If you use the Copy utility, the 3174 used at the central site requires two disk drives.

If you distribute your customization data on diskettes, there are several situations when you will be concerned with the management of the diskettes in your network. Among these are:

- When controllers are initially installed.

You have to provide a customized Control diskette for each of the controllers in your network. This means that you perform the procedures described in Chapter 2, "Customizing the Control Disk."

- When diskettes containing upgraded microcode are received.

You may need to perform the procedure in Chapter 5, "Upgrading Microcode." If you want to provide new enhancements as well, you also have to perform procedures described in Chapter 2, "Customizing the Control Disk."

- When changes are made to existing configurations.

You have to perform the Configure procedure in Chapter 2, "Customizing the Control Disk."

The following method is suggested if you have one or more of the above situations and wish to use the Copy procedure to manage customization data:

- Step 1** Prepare a master Control diskette at the central site. If possible, test the master Control diskette by performing a successful IML.
- Step 2** Use the Copy utility to make copies for the other 3174s in your network.
- Step 3** Use a reusable shipping container to send the customized diskettes to the controller for which they were made. You should enclose a note to the location personnel telling them to insert the diskette, close the diskette drive, and perform an IML on their controller. Also instruct them to return the reusable shipping container, with the old diskettes, to the central site machine location.
- Step 4** Maintain a record of the diskettes in your network to show the diskette type and release level, and the date that the diskette was installed.

For additional information on the Copy Files procedures, see Chapter 4, "Copying Files" on page 4-1.

## Keeping Records

### Duplicate Diskettes

Making a duplicate of each Utility and Control disk is highly recommended. The duplicate disk can be used as a backup for the original disk.

To make a duplicate Utility or Control disk, use the Full Copy or Copy Customizing Data option. The information for these copy options is in Chapter 4, "Copying Files."

You should identify any diskette that you duplicate. Affix a label to the upper portion of the diskette. The label identifies the diskette type by name. Also, you may wish to write a unique designation of your own on the label. For example, you could specifically identify the configuration and 3174 in which the diskette is to be customized and used.

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# Appendix D. Customizing Utilities

- What Is Customizing? . . . . . D-3
  - How Do You Customize a Control Disk? . . . . . D-3
  - The Customizing Panels . . . . . D-5
- Customizing Utility Options . . . . . D-6
  - Option 1: Customize the Control Disk . . . . . D-6
  - Option 6: Central Site Customizing . . . . . D-7
  - Option K: Identify Customizing Keyboard . . . . . D-7
- The Customize Control Disk Menu . . . . . D-8
  - Option 1: Configure . . . . . D-8
  - Option 2: Define Devices . . . . . D-10
  - Option 3: RPQs . . . . . D-10
  - Option 4: Modify Keyboards . . . . . D-10
  - Option 5: Define AEA . . . . . D-10





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## What Is Customizing?

*Customizing* consists of tailoring the controller microcode to support the various types of display stations and printers. Customizing identifies the methods and protocols of host attachment that a particular controller will provide.

Normally, two diskettes arrive with the 3174: a Control diskette and a Utility diskette. (The exception to this is when a controller is ordered using specify code 9005; in this case only a LFU diskette accompanies the controller. See Appendix F, "Limited Function Utility Disk" for a description.) These diskettes contain the microcode necessary to perform routine diagnostic tests before the controller goes into operation and to direct controller operations. These diskettes can be copied to a fixed disk if they are at a microcode level of B1.0 or higher.

During customizing, you tailor the microcode as required for your particular controller's operations. After the Control disk (diskette or fixed disk) has been customized, you can use it to IML (initial microcode load) the controller, enabling it to communicate with the display stations, printers, and host.

Whenever you customize a Control disk, you need to perform the Configure procedure. Also, you may need to perform one or more of these optional customizing procedures:

- Merge DSL
- Copy Files
- Microcode Upgrade
- Media Management
- Identify Customizing Keyboard
- Define PAM
- Merge RPQ
- Modify Keyboards
- Define AEA

## How Do You Customize a Control Disk?

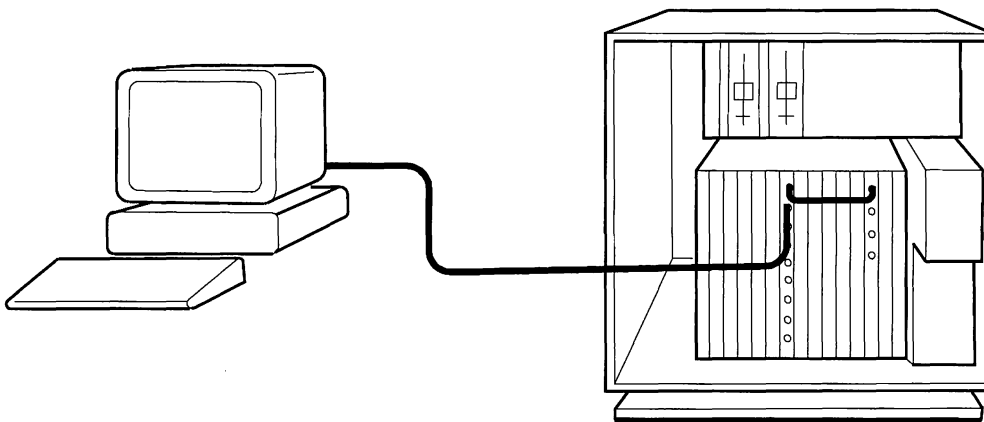
To customize the Control disk, you should be familiar with working at a 3270-type display station. You should also have previously prepared configuration worksheets.

Chapter 1, "Getting Started" shows how to turn on the controller, perform the Alt 1 IML procedure, and display the Master Menu. Tables help you to determine which of the procedures to choose and where to find them.

To customize the controller, you must load the **Utility** microcode by issuing an Alt 1 IML to the controller. The microcode is loaded from either a diskette or fixed disk. If the controller is to be IMLed from a new unused fixed disk, you must first set up or initialize the fixed disk by performing the procedure in Appendix G, "Initializing the Fixed Disk."

## Customizing the Control Disk

When you turn on the controller and perform the Alt 1 IML procedure, you customize at a “customizing display station” attached to port 26-00 of the controller (see Figure D-1).



*Figure D-1. An Example of a “Customizing Display Station”*

As you work, a series of panels appearing on the screen ask you a number of questions. You type in responses to those questions from the Configuration Worksheets. These responses are written onto the Control disk. In Chapters 2 through 7 of this publication, the customizing procedures are described in detail. After a Control disk has been customized, you can reconfigure it if you change the hardware or software configuration.

**Only certain display stations can be used for customizing.** If you are unsure about your display station, see “Which Display Stations Can You Use?” on page B-6 for a list of stations you can use.

## The Customizing Panels

After you select a customizing procedure from the Master Menu, various panels for that procedure will appear on the screen of your display station. The panels guide you through the procedure. Though each panel is unique, they all share a common design. The standard panel layout is illustrated in Figure D-2, although all the features illustrated here do not appear on every panel. For example, not all panels display PF keys.

**Note:** The size of the screen you are using determines how much information you will see. For example, a 3278 Model 2 shows only 24 lines of information, while a 3278 Model 4 displays 43 lines of information.

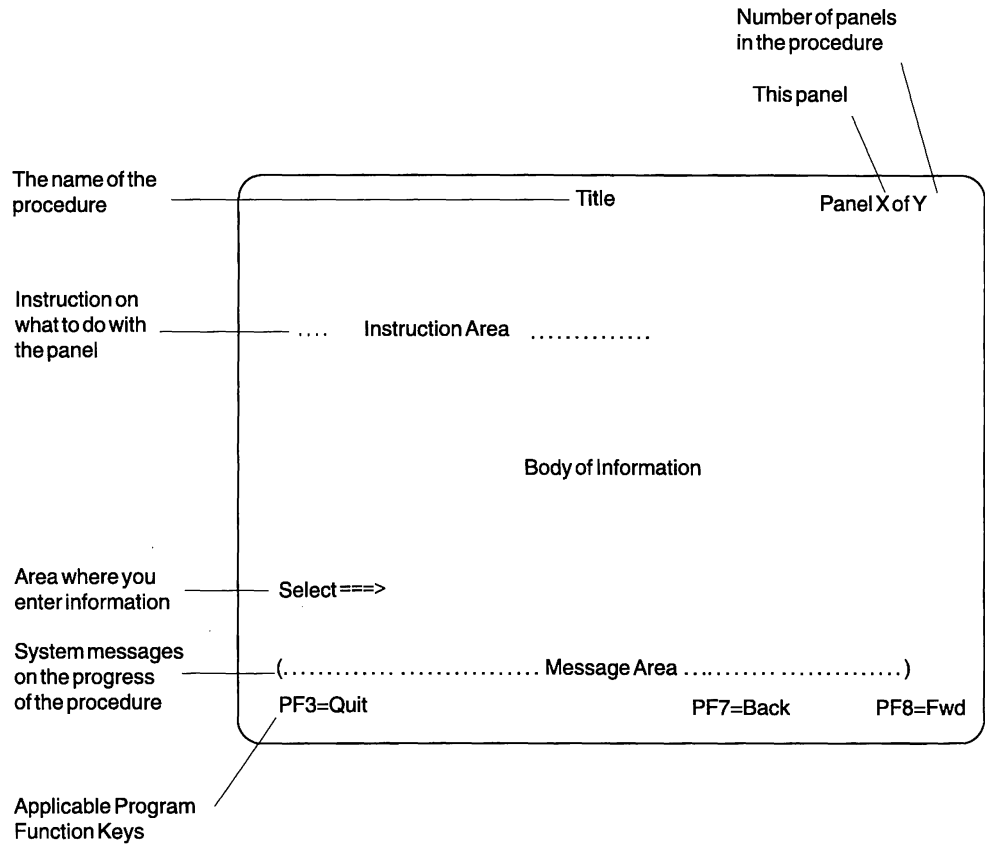


Figure D-2. Standard Panel Layout

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### Customizing Utility Options

The Customizing Utilities are shown in **bold** type in the following Master Menu (Figure D-3).

```

                ___ Master Menu ___

                3174 MICROCODE © COPYRIGHT IBM CORP 1986, 1987 1988 1990
Licensed Internal Code

Select option; press ENTER

Option  Description
  1    Customize the Control Disk
  2    Merge DSL
  3    Copy Files
  4    Diagnostics
  5    Microcode Upgrade
  6    Central Site Customizing
  7    Media Management
  K    Identify Customizing Keyboard

Select ==>  _
```

Figure D-3. The Master Menu

### Option 1: Customize the Control Disk

The Customize the Control Disk (disk or diskette) option allows you to tailor the instructional microcode required for your particular controller's operation.

Some customizing requires that hardware and software configuration information be either specified or modified on the Control disk that will be used to make a 3174 operational; for example, defining host, device, and printer attachments, modifiable-keyboard types, and RPQs.

If you select option 1 on the Master Menu, a panel containing the following customizing options is displayed:

- Option 1: Configure
- Option 2: Define Devices
- Option 3: Merge RPQs
- Option 4: Modify Keyboards
- Option 5: Define AEA

See "The Customize Control Disk Menu" on page D-8 for a detailed explanation. See Chapter 2 for the procedures.

## Option 6: Central Site Customizing

Central Site Customizing allows you to tailor the controller microcode for each controller in a network at a central location. The tailored microcode can be sent electronically (if you are using the NetView Distribution Manager software package) or physically (on a diskette) to the various controllers in the network, while a copy of the customization is stored at the central site for future reference. Refer to the *3174 Central Site Customizing User's Guide* for more information.

## Option K: Identify Customizing Keyboard

*If you need to select this procedure, select it before any other customizing procedure.*

During this procedure, you identify on a Utility disk the keyboard of the display you are using to customize. The keyboard you specify is supported on that disk for *all* other customizing procedures *and* any time you recustomize using that disk. Select this procedure if you do not know what keyboard type was used during previous customizing or if you want to change the keyboard type.

If you do not select this procedure the first time a disk is used, you will get the default. The default is a QWERTY<sup>1</sup> layout in one of these keyboards: Typewriter, Data Entry, APL (with APL off), or Text (with Text off). (Refer to the *Character Set Reference* for examples of these QWERTY keyboard layouts.)

If the keyboard is in one of the following languages, you *must* select the Identify Customizing Keyboard procedure the first time that a disk is customized:

- Austrian/German
- Belgian
- French, AZERTY layout
- Italian
- Japanese English
- Japanese Katakana

See Chapter 7, "Identifying Customizing Keyboards" for the procedure.

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<sup>1</sup> "QWERTY" keyboards get their name from the first six characters on the top row of alphabetic keys: Q-W-E-R-T-Y. Other types of keyboards get their names in a similar way. On AZERTY keyboards, for instance, the first six characters are A-Z-E-R-T-Y.

---

### The Customize Control Disk Menu

If you select option 1 from the Master Menu, the Customize Control Disk Menu (Figure D-4) is displayed. From it, you can select several customizing utilities. The definitions of the options are described in the following paragraphs.

```
      ___ Customize Control Disk Menu ___  
  
Select option; press ENTER  
  
Option   Description  
  1      Configure  
  2      Define Devices  
  3      Merge RPQs  
  4      Modify Keyboards  
  5      Define AEA  
  
Select ==>  
  
PF: 3=Quit          12=File
```

Figure D-4. Customize Control Disk Menu

### Option 1: Configure

During this procedure, you type in responses to the numbered questions that describe the configuration of hardware and software. This is the one customizing procedure that *must* be selected whenever you initially customize a Control disk. You also select this procedure when you want to reconfigure or modify some of the responses you entered when you first followed the Configure procedure. Chapter 2, "Customizing the Control Disk," describes the procedure for configuring and reconfiguring.

#### Configuration Option Overview

When you select Configure from the Customize Control Disk Menu, a series of panels are displayed, each of which is filled with numbers representing configuration questions. You type in your responses to these questions by referring to the previously prepared Configuration Worksheets. These worksheets are prepared during the *planning* process by a designated planner or yourself using the *3174 Planning Guide*.

If the worksheets have not been carefully filled out, the functions you want may not operate properly. Also, the controllers must be customized in the offline mode; having to make decisions about customizing now could cause the controller to be unavailable for a longer period.

When you reconfigure, you also need completed worksheets. Reconfiguring means modifying some of the responses that you entered when you initially configured the Control disk. The planning information for reconfiguring is in the *3174 Planning Guide*. The procedure used for configuring and reconfiguring is described in this book in Chapter 2, "Customizing the Control Disk."

**Typing in Responses to the Configuration Questions:** Many of the configuration questions have default responses displayed in the response field. (The area where you type a response is called the *response field*.) A default response is supplied for you; you can change it or leave it unchanged. To enter or change a response, use the tab or cursor movement keys to move your cursor to the question and type over the previous response.

On the worksheet, many response boxes have a default response printed beneath them. The default responses printed on the worksheets match the default responses displayed on your screen.

116-  121-       Circled  
0                      (01) — default response

If a response box is left empty and the default response is circled, leave that default response unchanged on the screen. Some questions on the worksheets have Xs displayed in the response field. For the panel to be valid, you *must* type a response to these questions. (You will receive an error message if you do not.)

**Correcting Responses:** Once responses are entered on the customization panels, the customizing program checks the responses before allowing you to continue to the next panel.

If a response is not valid, the question number and the response are highlighted. A 4-digit status code and message displayed on the message line explain why the response is not valid. (Refer to *3174 Status Codes* for more information.)

If several questions are highlighted, the status code refers to the questions in numeric order, from higher to lower number. For the 117: Port Assignment panel, all responses that are not valid of the same type (for example, duplicate addresses) are highlighted at once. After you correct one type of response, another type of response that is not valid is highlighted.

Use the following procedure to correct any responses that are not valid.

1. Contact the planner or refer to the *3174 Planning Guide*, for response information.
2. Correct the response that is not valid to the highest-numbered question or type that is highlighted.
3. Press ENTER.  
The status code changes to explain the next response that is not valid. Continue correcting the responses until none are highlighted.
4. After ENTER is pressed, a message indicates when all responses are valid.

## Customizing the Control Disk

### Option 2: Define Devices

On the Define Devices panel you define the Printer Authorization Matrix (PAM), Logical Terminal Assignment (LTA) data, and Extended VPD.

PAM matches (define) the displays to printers for local copy, host copy, or shared copy operations. Select this procedure to define the PAM initially or to change an existing one.

The LTA defines the host address for each host session that is configured for your attached terminals. The *3174 Planning Guide* contains the necessary planning information. In this book, Chapter 2, "Customizing the Control Disk," provides instructions for the procedure.

Prompts for Extended VPD present panels with information relating to the controller and each attached device.

### Option 3: RPQs

During this procedure, you can select RPQs to be included in the operational IML. This procedure also allows you to delete RPQs. For this procedure, see Chapter 2, "Customizing the Control Disk."

### Option 4: Modify Keyboards

Some display stations have modifiable keyboards that allow you to create keyboard layouts for specific user applications. During this procedure, you define the unique keyboard layouts for these modifiable keyboards. The *3174 Planning Guide* contains the planning information and Chapter 2, "Customizing the Control Disk," describes the procedure for modifying keyboards.

### Option 5: Define AEA

During this procedure, you enter responses in the input fields of several panels and respond to questions that describe the configuration of hardware and software for both 3270 and ASCII devices. This procedure *must* be selected when you initially customize a Control disk for ASCII devices, but should be performed after the regular configure procedure. You also select this procedure when you want to reconfigure or to modify some of the responses you entered when you first followed the AEA Configure procedure. The *3174 Planning Guide* contains the planning information you need to read before configuring for the AEA or reconfiguring for it. The *3174 Planning Guide* also contains information on Port Assignment and PAM requirements that must be considered when configuring for the AEA.

Define AEA provides you with three options.

**Configure AEA:** Select Configure AEA if you want to type in the responses to the numbered questions on the AEA Configure Worksheets 17 through 21.

**Define UDT:** Define UDT allows you to create a User-defined Terminal definition for an ASCII Terminal Type being attached to the controller. Use worksheets 22 through 24.

**Define UDX:** Define UDX allows you to create or modify one or more User-Defined Translate Table definitions based on an FPC Translate Table definition.



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## Appendix E. Interutility and Interconfigure Checking

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Printing a Local Copy of the Interconfigure Error Panel .....	E-9



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## Overview

During Interutility and Interconfigure Checking you need the completed configuration worksheets. You may also need a copy of *3174 Status Codes*.

The **Interutility Checking** panel displays the errors that occur because of conflicting responses between the customizing procedures. It informs the customizer of any errors or added procedures that need to be performed by Microcode Upgrade, Customize Control Disk, and Central Site Customizing procedures. For information on the panels displayed and the method used to correct the interutility errors or each of these procedures, see:

- “Correcting Microcode Upgrade Errors” on page E-5
- “Correcting Customize Control Disk Errors” on page E-6
- For interutility checking of the Central Site Customizing procedure, refer to the *3174 Central Site Customizing User’s Guide*.

The **Interconfigure Error Checking** panel displays the errors made during host configuration. First, read the section about the use of the PF keys for the checking programs. Then, see “Correcting Interconfigure Errors” on page E-8 for information on the panels displayed and the method used to correct the **Interconfigure Errors**.

## PF Keys

The PF keys for the checking programs differ slightly from the PF keys used for the Microcode Upgrade and the Customize Control Disk procedures.

Use the following table to reference interutility and interconfigure checking PF key functions.

<b>PF Keys:</b>	<b>Function:</b>
PF7	Pressed during the interutility checking program while the Microcode Upgrade procedure is performed, PF7 (Back) returns the display to the Microcode Upgrade panel, from which the upgrade may be continued or ended.  Pressed during the interutility checking program while the Customize Control Disk procedure is performed, this key returns the display to the Customize Control Disk Menu.
PF10	PF10 (Page Back) pages back to the previous interutility checking panel.  <b>Note:</b> If you are using a keyboard without a PF10 key, use the Cursor Select Key.
PF11	PF11 (Page Forward) pages forward to the next interutility checking panel.  <b>Note:</b> If you are using a keyboard without a PF11 key, use the PA1 key.
PF12	Pressed during the interutility checking program while the Customize Control Disk procedure is being performed, PF12 (File) files the customizing responses to the Control disk.  <b>Note:</b> If you are using a keyboard without a PF12, use the PA2 key.

**Note:** PF13 through PF24, on keyboards that contain them, are mapped into PF1 through PF12. For example, PF13 is PF1 and PF15 is PF3.

# Interutility Checking

## Panel Informational Areas

Each of the panels for the checking programs has areas that provide information: instructions, operational information, and error information. For information about the meaning of an error message, refer to *3174 Status Codes*. See Figure E-1 for a description of these panel areas.

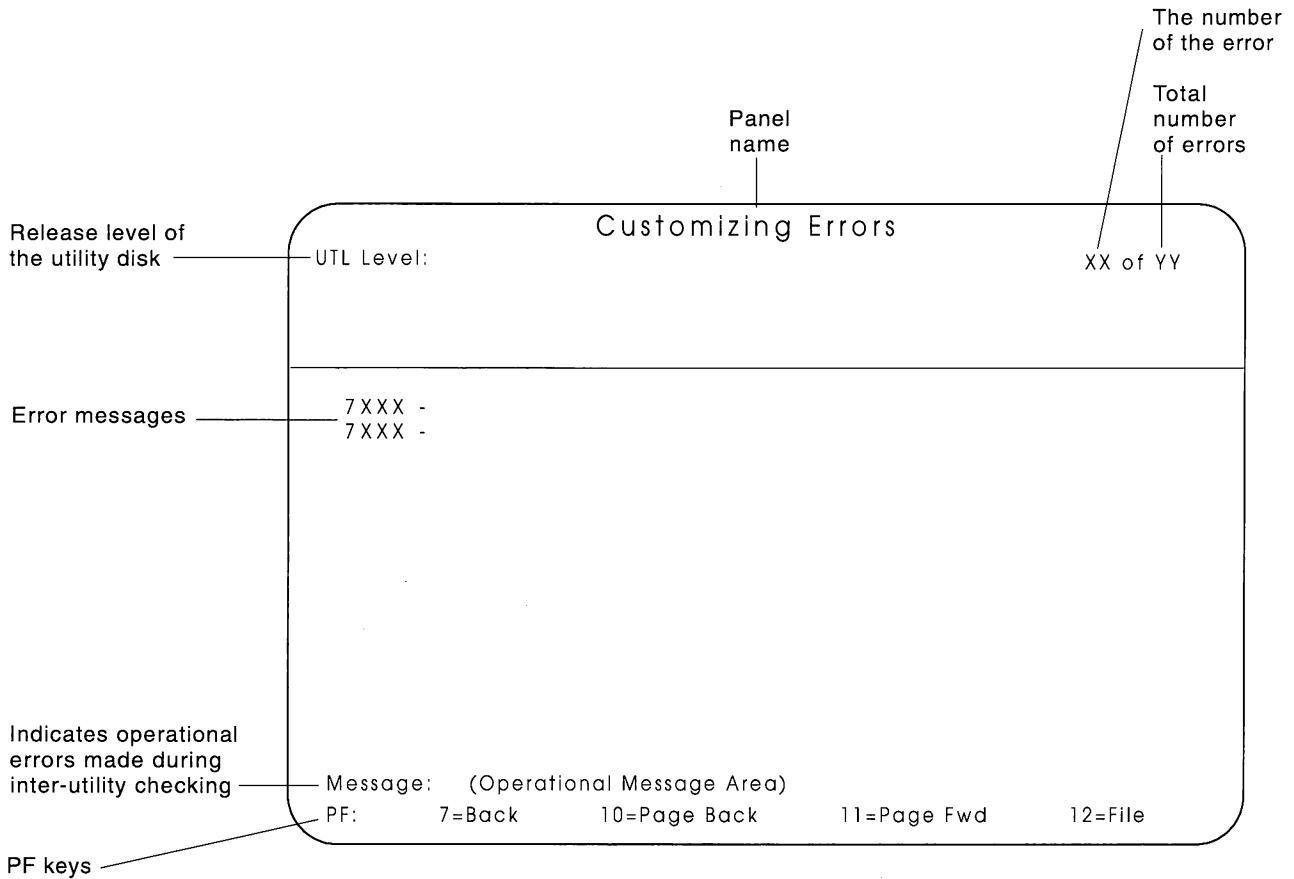


Figure E-1. The Interutility Checking Panel Information Areas

## Correcting Microcode Upgrade Errors

After processing of the old disk has started, the interutility checking panel (Figure E-2) may appear with one or more messages displayed if errors occurred or if additional procedures need to be performed. Figure E-1 on page E-4 shows the different informational areas found on the interutility checking panels.

```

_____ Microcode Upgrade Errors _____ Error XX of YY

_____

7XXX - (Error message)
7XXX - (Error message)
7XXX - (Error message)

```

```

(Operational Message Area)
PF:  7=Back      10=Page Back      11=Page Fwd

```

Figure E-2. Microcode Upgrade Errors Panel

## Printing a Local Copy of Each Interutility Checking Panel

The errors discovered during the microcode upgrade and informational messages are displayed on the interutility checking panels. It may be useful to print a local copy of these panels.

**Note:** Only non-ASCII printers attached to the Terminal Adapter identified by HG 26 can be used for the local copy at customization time. The printers can be attached to any port other than port 0 of that Terminal Adapter.

- Step 1** Turn on a printer attached to the controller.
- Step 2** Press the PRINT key.
- Step 3** Press the PF11 key to display the next panel, and repeat Step 2 until all the interutility checking panels have been printed.

## Completing the Microcode Upgrade

- Step 1** Press PF7. The Microcode Upgrade panel is displayed.
- Step 2** If you are using a *diskette drive*, insert the New (or To) diskette into the drive and press ENTER. (A message is displayed when the upgrade is complete.)
- If you are using a *fixed disk drive*, press ENTER. (A message is displayed when the upgrade is complete.)
- Step 3** Referring to the local copy of the interutility checking panel, correct the errors and perform any additional procedures on the New disk.

---

## Correcting Customize Control Disk Errors

When either PF9 or PF12 is pressed from the Customize the Control Disk Menu, the interutility checking panel (Figure E-3) may appear if errors were made during customizing. Figure E-1 on page E-4 shows the different informational areas found on the interutility checking panels.

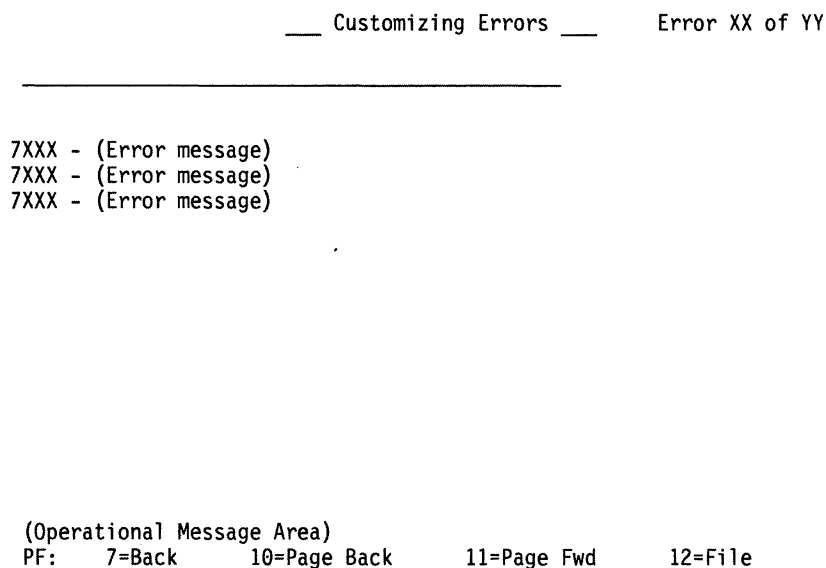


Figure E-3. Customizing Errors Panel

The errors listed may involve one or more procedures. For each procedure, perform the following steps to correct the errors.

**Warning:** If you file the errors on the Control disk, certain controller functions may not work the way that you intend them to.

## Printing a Local Copy of Each Interutility Checking Panel

All of the errors discovered during Customizing are displayed on the interutility checking panels. Since you will need to go to other screens to correct the errors shown on the interutility checking panels, you will need a record of the interutility errors. You can obtain this record by printing a local copy of each of the interutility checking panels.

**Note:** Only non-ASCII printers attached to the Terminal Adapter identified by HG 26 can be used for the local copy at customization time. The printers can be attached to any port other than port 0 of that Terminal Adapter.

- Step 1** Turn on a printer attached to the controller.
- Step 2** Press the PRINT key.
- Step 3** Press the PF11 key to display the next panel, and repeat Step 2 until all the interutility checking panels have been printed.
- Step 4** Return to the customizing procedure that contains errors.
- Step 5** Press PF7. The Customize the Control Disk Menu is displayed.
- Step 6** Select the proper procedure from the menu and press ENTER.
- Step 7** The local copy of the interutility error panels lists the interutility checking errors. Correct the responses that are not valid for this panel and press ENTER.
- Step 8** If there are more panels in the procedure, press PF11 to advance to the next panel and correct any responses that are not valid. Press ENTER. (A message indicates whether the changed responses are valid.)
- Step 9** When all the errors have been corrected on the panels, press PF12 to file the responses. You will be returned to the Customize the Control Disk Menu. (You may want to press PF9 now, to make sure that your responses are valid.)
- Step 10** Perform Steps 1 through 5 for each procedure listed on the local copy of the interutility checking panel.
- Step 11** Press PF12 (Done) to file the responses. If you have corrected all interutility checking errors, pressing PF12 will file the responses on the Control disk. If the interutility checking panel appears again, errors have been detected. Return to Step 1, or file the responses by pressing PF12 again. (You may want to file responses now and recustomize later to correct the errors.)

---

### Correcting Interconfigure Errors

When PF12 is pressed from the Multi-Host Configuration Panel, the interconfigure checking panel (Figure E-4) appears if errors were made during host configuration. Figure E-4 shows the different informational areas found on the interconfigure checking panels.

```
      ___ Host Configuration Errors ___      Error XX of YY

      There are errors in your host configurations. To correct these
      errors, return to the Host Definition Panel and select the host
      configurations in error.

      _____

      7XXX - (Error message)

      7XXX - (Error message)

      7XXX - (Error message)

      7XXX - (Error message)

      (Operational Message Area)
      PF:  7=Back    10=Page Back    11=Page Fwd    12=File
```

*Figure E-4. Customizing Errors Panel*



## Printing a Local Copy of the Interconfigure Error Panel

All of the errors discovered during Configuring are displayed on the Interconfigure error panels. Since you will need to go to other screens to correct the errors shown on the interconfigure checking panels, you will need a record of the interconfigure errors. You can obtain this record by printing a local copy of each of the interconfigure checking panels.

**Note:** Only non-ASCII printers attached to the Terminal Adapter identified by HG 26 can be used for the local copy at customization time. The printer can be attached to any port other than port 0 of that Terminal Adapter.

- Step 1** Turn on a printer attached to the controller.
- Step 2** Press the PRINT key.
- Step 3** Press the PF11 key to display the next panel, and repeat Step 2 until all the Interconfigure error panels have been printed.
- Step 4** Return to the customizing procedure that contains errors.
- Step 5** Press PF7. The Customize the Control Disk Menu is displayed.
- Step 6** Select the proper procedure from the menu and press ENTER.
- Step 7** The local copy of the interconfigure error panels lists the interconfigure checking errors. Correct the responses that are not valid for this panel and press ENTER. Be sure to respond to each error message for this panel of this procedure, then continue with Step 8.
- Step 8** If there are more panels in the procedure, press PF11 to advance to the next panel and correct any responses that are not valid. Press ENTER. (A message indicates whether the changed responses are valid.)
- Step 9** When all the errors have been corrected on each panel, press PF12 to file the responses. You will be returned to the Customize the Control Disk Menu. (You may want to press PF9 now, to make sure that your responses are valid.)
- Step 10** Perform steps 1 through 5 for each procedure listed on the local copy of the interconfigure checking panel.
- Step 11** Press PF12 (Done) to file the responses. If you have corrected all interconfigure errors, pressing PF12 will file the responses on the Control disk. If the interconfigure error panel appears again, errors have been detected. Return to Step 1, or file the responses by pressing PF12 again. (You may want to file responses now and recustomize later to correct the errors.)



---

## Appendix F. Limited Function Utility (LFU) Disk

LFU Disk ..... F-3



---

## LFU Disk

The LFU Disk is used in networks that are under central site control. It is shipped with all of the controllers that are ordered using specify code 9005 (called an *Inhibit Microcode Shipment*). It limits the options that can be performed and prevents the unauthorized reconfiguration of a controller in the network. In a network that uses the LFU Disk, all the controllers are configured by the Central Site Controller.

Specify code 9005 would not be used in the order for the Central Site Controller, because that controller will need the Utility and Control disk to perform all of the functions. Instead, the Central Site Controller can be ordered using specify code 9006, which is called the *Central Site Diskette Distribution Aid*.

If you do have the LFU disk, the Master Menu will look like the one shown in Figure F-1.

```

      ___ Limited Function Master Menu ___

                                3174 MICROCODE © COPYRIGHT IBM CORP 1988 1990
                                Licensed Internal Code - Property of IBM

Select option; press ENTER

Option  Description
  1     Diagnostics
  2     Copy Files
  3     Media Management
  K     Identify Customizing Keyboard

Select ==>> ___
```

Figure F-1. The Limited Function Utility (LFU) Master Menu

From it, any of the following procedures can be performed:

- Diagnostics
- Copy Files
- Media Management
- Identify Customizing Keyboard

## Limited Function Utility (LFU) Disk

Except for the Copy option and the option numbers, the procedures are performed in the same way as they would be if you chose them from the Utility Disk Master Menu. The difference that you see when you perform the Copy option is on the Copy Menu. See Figure F-2.

```

      ___ Copy Menu ___

Option   Description
   1     Full Copy

Available drives: 1 2 3 4      From ===== 1 To ===== 2

PF: 3=Quit
```

*Figure F-2. Limited Function Utility (LFU) Copy Menu after Option Selection*

You are limited to the Full Copy option. However, you will still use the procedure discussed in Chapter 4, "Copying Files," to perform this option.

---

## Appendix G. Initializing the Fixed Disk

Initializing the Fixed Disk .....	G-3
Before You Begin .....	G-3
Initializing Procedure .....	G-3
What's Next? .....	G-8





---

## Initializing the Fixed Disk

In the initializing procedure you:

- Enable the fixed disk
- Copy diskettes to a fixed disk
- Select Source Subdirectories for an Operational IML and an Alternate IML

**Note:** If you want to work with the subdirectories or the IML source selection of a fixed disk that has **already been** initialized, go to Chapter 6, "Performing Media Management" on page 6-1.

If you want to install microcode on a fixed disk that has **already been** initialized, go to Chapter 4, "Copying Files" on page 4-1.

## Before You Begin

You should have:

- An uninitialized fixed disk
- A Utility Diskette **or** a LFU diskette
- A Control diskette

If you also have DSL, or LIB diskettes, it is advisable to copy these diskettes to your fixed disk while in this procedure.

## Initializing Procedure

**Step 1** If you have not already displayed the Master Menu, do so now. See "Displaying the Master Menu" on page 1-4 for instructions. Use the Utility Diskette path. After you have displayed the Master Menu, return to this procedure and go to Step 2.

**Step 2** On the Master Menu, type 4 (Diagnostics) after Select ==>.

**Step 3** Press ENTER on the keyboard. The Diagnostic Test Menu appears on your screen.

```

_____ Diagnostic Test Menu _____
TYPE HG: Press PF8

HG      Description                HG      Description
01      Diskette 1 - 1.2 MB        09      Operators Panel
02      Diskette 2 - 1.2 MB        16      Channel Adpt
03      Fixed Disk 1 - 20 MB       26      Terminal Adpt
04      Fixed Disk 2 - 20 MB       31      Token Ring - 4 MB
08      Timer

                                           80      Test Monitor Functions
                                           81      Test All - Setup Mode
                                           82      Test All - Installed Mode

Select ==>_
4001

PF:3=Master Menu   8=Fwd
```

Figure G-1. Test Menu

## Initializing the Fixed Disk

- Step 4** Enabling the fixed disk you wish to initialize:
- To enable fixed disk 1, type **0351** after Select ==>.
  - To enable fixed disk 2, type **0451** after Select ==>.
- Step 5** Press ENTER. 23xx (xx = a number that decrements to 0) is displayed as the test runs.
- For fixed disk 1, 2003 - Test Passed .... is displayed on completion.
  - For fixed disk 2, 2004 - Test Passed .... is displayed on completion.
- (If another code is displayed, refer to *3174 Status Codes*.)
- Step 6** Press PF3 to return to the Master Menu (this takes a few moments).  
You have completed the disk enable section of the procedure. You are ready to begin the copy files section.
- Step 7** On the Master Menu, type **3** (Copy Files) after Select ==>.
- Step 8** Press ENTER on the keyboard. The Copy Menu appears on your screen.

```
      ___ Copy Menu ___  
  
Option      Description  
  1         Full Copy  
  2         Modify and Copy  
  3         Copy Customizing Data  
  4         Copy Define Devices  
  5         Copy Patches  
  6         Copy Modified Keyboards  
  7         Copy RPQs  
  
Select==>  
  
(Message.. Select option; press ENTER)  
PF: 3=Quit
```

Figure G-2. Copy Menu (Utility Diskette).

**Note:** The LFU Copy Menu shows only the Full Copy Option.

**Step 9** Type **1** after Select ==>.

**Step 10** Press ENTER.

The prompt Available drives appears at the bottom of the screen with the Full Copy option highlighted. Available drives appears in place of Select ==>. What happens next depends on the number of drives available to the controller.

Available drives: 1 2 3 4 From ==> 1 To ==> 4

The **available drives** listed are 1 through 4. The responses for the *From* and *To* drives contain default drive selections. In this example, the default drive selections are 1 and 4 respectively.

If you do not want to use the default drive selections, type in the numbers of the drives you want to use.

**Note:** The *From* drive must be a diskette drive (drive 1 or 2). The *To* drive must be a fixed disk drive (drive 3 or 4).

**Step 11** Press ENTER. The drives that you selected are highlighted on your screen.

A message to insert the diskette for copying appears on the message line near the bottom of your screen.

**Note:** If you have a new uninitialized fixed disk, first copy the Control diskette. After you have completed the copy procedure for the Control diskette, perform the procedure for the Utility diskette or the LFU diskette.

**Step 12** Insert the *From* diskette you have chosen, close the drive door, and press ENTER.

A message appears at the bottom of the screen.

Copying to CTL00001

**Note:** If you are copying the Utility, *Copying to UTL00001* appears. On completion, the following message appears,

Copy Done. Another? Insert Diskette; Press ENTER.

**Step 13** To copy the Utility Diskette (or LFU Diskette), DSL Diskette, or LIB Diskette to fixed disk insert the chosen diskette into the *From* drive and press ENTER.

On each completion, the following message appears,

Copy Done. Another? Insert Diskette; Press ENTER.

When you have completed copying the diskettes, continue with Step 14.

**Step 14** Press PF3 twice. You will be returned to the Master Menu.

You have completed the copy section of this procedure. You are now ready to begin the third part of the initializing procedure, the IML Source Subdirectory section. In this section you will select two subdirectories, the Control (CTL00001) subdirectory for operational IMLs, and either the Utility (UTL00001) subdirectory **or** the LFU (LFU00001) subdirectory for Alternate IMLs.

## Initializing the Fixed Disk

**Step 15** On the Master Menu, type **7** (Media Management) after Select ==>.

**Step 16** Press ENTER on the keyboard.

The Media Management Menu appears on your screen.

\_\_\_ Media Management Menu \_\_\_

Select Option; press ENTER

Option	Description
1	Select/Deselect IML Source
2	Delete Subdirectory
3	Display Disk Information
4	Create Dump/Trace Diskette

Select==>

PF: 3=Quit

Figure G-3. Media Management Menu displayed

**Step 17** Type **1** after Select==>.

**Step 18** Press ENTER.

**Step 19** Verify drives.

A message on your screen prompts you to verify the default drive selection. The Select drive ==> value is defaulted to the first available fixed disk drive installed.

Available drives: 3 4      Select Drive ==> 3

- If you do not want to use the default drive selection, type the number of the fixed disk drive you want to use after Select drive ==>.
- Press ENTER.

**Step 20** Selecting the IML Source.

The IML Source Selection panel appears on your screen (see Figure G-4), along with the selectable subdirectories on the drive you specified.

```

          ___ IML Source Selection ___
                                     Drive 3

      1 - Select
      2 - Deselect

      Subdirectories
CONTROL          UTILITY
- CTL00001      - UTL00001
                 - LFU00001

      IML Selection  Subdirectory
      Parameter      Name
          w340        UTL00001
          w341        CTL00001

PF: 3=Quit          12=Process
    
```

Figure G-4. IML Source Selection Panel

Type **1** (Select) in the space provided before the subdirectory you want the microcode to load during an IML.

**Note:** Only one subdirectory can be selected at a time. You can select either one Control subdirectory or one Utility subdirectory, but not both in one step. You must go to Step 21 on page G-8 and finish the procedure for one subdirectory before you return to this menu to select the second subdirectory.

## Initializing the Fixed Disk

### **Step 21** Press ENTER.

If the responses are valid, a message indicates that all responses are correct and you will be prompted to press PF12.

If a response is not valid, the response is highlighted. A 4-digit status code and message displayed on the message line explain why the response is not valid. (Refer to *3174 Status Codes* for a description of the status codes.)

- a. Correct the highlighted response.
- b. Press ENTER. The status code changes to explain any other responses that are not valid.
- c. Continue correcting responses until none are highlighted. A message indicates that all responses are correct after the ENTER key is pressed.

### **Step 22** Press PF12 to process.

The responses are saved and the selected subdirectory names appear under the Subdirectory Selection Name section on the right side of your screen. A series of 8 periods appears in the subdirectory name fields not selected for IML.

### **Step 23** To select the remaining subdirectory:

- Press PF3 to return to the Media Management Menu.
- Repeat Step 17 on page G-6 through Step 22.

## What's Next?

You have completed Initializing the Fixed Disk. Press PF3 twice to return to the Master Menu.

### Chapter 1

If you were directed to this procedure from Chapter 1, return to the "Worksheet and Task Tables" on page 1-7.

---

## List of Abbreviations

### A

**AEA.** Asynchronous Emulation Adapter.

**Alt.** Alternate.

**APL.** A Programming Language.

**ASCII.** American National Standard Code for Information Interchange.

**ATTN.** Attention.

### B

**bps.** Bits per second.

**BSC.** Binary synchronous communication.

### C

**CCITT.** International Telegraph and Telephone Consultative Committee.

**CECP.** Country extended code page.

**CSCM.** Central Site Change Management.

**CSCU.** Central Site Customizing Utility.

**CTL.** Control.

**CU.** Control unit.

**CUG.** Closed user group.

**CUT.** Control unit terminal.

### D

**DFT.** Distributed function terminal.

**DSL.** Downstream load.

**DSR.** Data set ready.

**DTE.** Data terminal equipment.

**DTR.** Data terminal ready.

### E

**EBCDIC.** Extended Binary-Coded Decimal Interchange Code.

**EOF.** End of field.

**EOT.** End-of-transmission character.

**ETX.** End of Text.

### H

**HG.** Hardware group.

### I

**ID.** (1) Identification. (2) Identifier.

**IML.** Initial microcode load.

**I/O.** Input/output.

**ISO.** International Organization for Standardization.

### K

**k.** 1000.

**K.** 1024.

**Kb.** Kilobit.

**KB.** Kilobyte.

**KDU.** Keyboard Definition Utility

### L

**LFU.** Limited Function Utility.

**LIB.** Library.

**LT.** Logical terminal.

**LTA.** Logical terminal assignment.

**LU.** Logical unit.

### M

**MLT.** Multiple Logical Terminals.

## **N**

**NRZ.** Nonreturn to zero.

**NRZI.** Nonreturn to zero inverted.

## **O**

**OIA.** Operator information area.

## **P**

**PAM.** Printer authorization matrix.

**PC.** Personal computer.

**PF.** Program function.

**PS.** Programmed symbols.

**PU.** Physical unit.

**PVC.** Permanent virtual circuit.

## **R**

**RFS.** Ready-For-Sending.

**ROS.** Read-only storage.

**RPOA.** Recognized Private Operating Agency.

**RPQ.** Request for price quotation.

**RTM.** Response Time Monitor.

**RTS.** Request to send.

**RU.** Request/response unit.

## **S**

**SAP.** Service access point.

**SCS.** SNA character string.

**SDLC.** Synchronous Data Link Control.

**SNA.** Systems Network Architecture.

**SNBU.** Switched network backup.

**SVC.** Switched virtual circuit.

## **U**

**UDT.** User defined terminal tables.

**UDX.** User defined translate tables.

## **V**

**VPD.** Vital Product Data.

## **X**

**X.25.** Packet-switched networks.

**XOFF.** Transmitter off.

**XON.** Transmitter on.



---

# Glossary

## A

**adapter.** (1) A general term for a device that provides some transitional function between two or more devices. (2) In a local area network, within a communicating device, a circuit card with its associated software that enables the device to communicate over the network.

**address.** (1) A value that identifies a register, a particular part of storage, a data source, or a data sink. The value is represented by one or more characters. (2) To refer to a device or an item of data by its address. (3) In word processing, the location, identified by an address code, of a specific section of the recording medium or storage. (4) The location in the storage of a computer where data is stored. (5) In data communication, the unique code assigned to each device or workstation connected to a network.

**AEA.** See *Asynchronous Emulation Adapter*.

**AEA port.** A communication connector on the Asynchronous Emulation Adapter (AEA).

**AEA port set.** (1) One or more 3174 ports that support individual AEA station sets; they must have the same port (connection) type and modem type, but different station types. (2) One or more 3174 station sets that have different station types, but the same port type, modem type, and number of default destinations.

**AEA station.** A 3270 or ASCII display station, printer, or host that communicates through the Asynchronous Emulation Adapter.

**AEA station set.** (1) One or more AEA stations that have the same attributes, for example, line speed and parity. (2) One or more AEA stations that share the same characteristics of station type, port type, modem type, and default destination.

**alert.** (1) For IBM LAN management products, a notification indicating a possible security violation, a persistent error condition, or an interruption or potential interruption in the flow of data around the network. See also *network management vector transport*. (2) In SNA, a record sent to a system problem management focal point to communicate the existence of an alert condition. (3) In the NetView program, a high-priority event that warrants immediate attention. This data base record is generated for certain event types that are defined by user-constructed filters.

**alternate 1 initial microcode load (Alt 1 IML).** The initiating procedure for running specific adapter tests, starting customizing, or doing a normal IML.

**American National Standard Code for Information Interchange (ASCII).** The standard code, using a coded character set consisting of 7-bit coded characters (8 bits including parity check), used for information interchange among data processing systems, data communication systems, and associated equipment. The ASCII set consists of control characters and graphics characters.

**asynchronous.** (1) Pertaining to two or more processes that do not depend upon the occurrence of a specific event such as a common timing signal. (2) In Fiber Distributed Data Interface (FDDI) rings, a type of data traffic that does not need bounded access delay to the medium and guaranteed throughput.

**Asynchronous Emulation Adapter (AEA).** In the 3174 Establishment Controller, an adapter that enables an ASCII terminal to communicate with a 3270 host using the 3270 data stream, an ASCII terminal to communicate with an ASCII host through the 3174, and a 3270 terminal to communicate with an ASCII host using data streams, such as the DEC VT100, DEC VT220, Data General D210, or IBM 3101 data streams.

**attach.** To make a device part of a network logically.

**attention (ATTN).** An occurrence external to an operation that could cause an interruption of the operation.

**attribute.** (1) A characteristic. (2) A terminal display language or transformation definition language (TDL) keyword that specifies a particular quality for the TDL object with which it is associated.

**autobaud.** In the 3174 AEA feature, the process of determining the line speed and parity settings of a connecting display station from a specific sequence of characters (CR . CR) entered from the keyboard. ASCII hosts may also support automatic speed and parity detection, but the character sequence they require may differ.

## B

**backup diskette.** A diskette that contains information copied from another diskette. It is used in case the original information is altered or destroyed.

**binary synchronous communication (BSC).** A form of telecommunication line control that uses a standard set of transmission control characters and control character sequences, for binary synchronous

transmission of binary-coded data between stations. Contrast with *synchronous data link control (SDLC)*.

**bits per second (bps).** The rate at which bits are transmitted per second.

**bracket.** In SNA, one or more chains of request units (RUs) and their responses, which are exchanged between two LU-LU half-sessions and represent a transaction between them. A bracket must be completed before another bracket can be started. Examples of brackets are data base inquiries/replies, update transactions, and remote job entry output sequences to workstations.

**burst.** In data communication, a sequence of signals counted as one unit in accordance with some specific criterion or measure.

**byte.** (1) A string that consists of a number of bits, treated as a unit, and representing a character. (2) A binary character operated upon as a unit and usually shorter than a computer word. (3) A string that consists of a particular number of bits, usually 8, that is treated as a unit, and that represents a character. (4) A group of 8 adjacent binary digits that represent one extended binary-coded decimal interchange code (EBCDIC) character.

## C

**Central site change management (CSCM).** A function of the 3174 microcode that tracks the microcode for each controller in a network and, in conjunction with NetView DM, electronically distributes and retrieves microcode changes for each controller.

**Central Site Controller.** The controller that contains the central site library for all of the controllers in a network.

**central site customizing.** The process of tailoring the 3174 Licensed Internal Code for each controller in a network, at the central site.

**central site library.** One or more Library disks that contain customizing data and label information for the controllers in a network.

**channel.** (1) A functional unit, controlled by a host computer, that handles the transfer of data between processor storage and local peripheral equipment. (2) A path along which signals can be sent. (3) The portion of a storage medium that is accessible to a given reading or writing station. (4) In broadband transmission, a designation of a frequency band 6 MHz wide.

**character set.** (1) A defined collection of characters. (2) A group of characters used for a specific reason, for

example, the set of characters a printer can print. (3) The collection of graphic characters required to support a specific language.

**cluster.** A station that consists of a control unit (a cluster controller) and the terminals attached to it.

**code page.** An assignment of graphic characters and control function meanings to all code points.

**command.** (1) A request for performance of an operation or execution of a program. (2) A character string from a source external to a system that represents a request for system action.

**command retry.** A channel and control unit procedure that causes a command to be retried without requiring an I/O interruption.

**communication adapter.** A circuit card with associated software that enables a processor, controller, or other device to be connected to a network.

**Concurrent Communication Adapter (CCA).** In the 3174 Establishment Controller, a communication adapter that, along with the necessary microcode, provides terminals attached to the 3174 the ability to concurrently access an additional 3270 host.

**configuration.** The arrangement of a computer system or network as defined by the nature, number, and chief characteristics of its functional units. More specifically, the term *configuration* may refer to a hardware configuration or a software configuration. See also *system configuration*.

**Connection Menu.** A menu on the screen of a display station attached to the 3174 Establishment Controller, from which a user can select an available host.

**Control (CTL) disk.** A customized diskette or fixed disk containing the microcode that describes a particular controller's attached terminals, and its method of attachment to the host.

**Control (CTL) diskette.** A customized diskette containing the microcode that describes a particular controller's attached terminals, and its method of attachment to the host.

**controller.** A unit that controls input/output operations for one or more devices.

**control unit.** A general term for any device that provides common functions for other devices or mechanisms. Synonym for controller.

**control unit terminal (CUT).** A terminal that relies on the 3174 to interpret the data stream. Examples are the 3178, 3179, 3278 Model 2, and 3279 Model S2A.

**control unit terminal (CUT) mode.** A host-interactive mode that enables an IBM 3270 Personal Computer customized in this mode to run only one session emulating a 3178, 3179, 3278 Model 2, or 3279 Model S2A.

**country extended code page (CECP).** A function of the 3174 microcode that provides for a code page containing additional code points beyond those available with Table 5A code pages. CECP is supported by a universal character set, Character Set 697, which contains 190 characters.

**create.** In 3174 central site customizing, to create a library member for a network controller, and store the customizing data for that library member on a Library diskette.

**cursor.** (1) A movable, visible mark used to indicate the position at which the next operation will occur on a display surface. (2) A unique symbol that identifies a character position in a screen display, usually the character position at which the next character to be entered from the keyboard will be displayed.

**customization.** Procedures that tailor the control unit microcode to fit the various types of display stations and printers and the method of host attachment that a particular control unit will handle.

**customizing display station.** A display station used to perform the customizing procedures; this display station must be attached to port 26-00 of the controller. Only these display stations can be used for customizing: a 3178, a 3179 Model 1 operating in native or 3279-emulation mode, a 3180 operating in native or 3278-emulation mode, a 3191, a 3192, a 3194 operating in control unit terminal (CUT) mode, a 3270 Personal Computer with 3278/3279 emulation, operating in CUT mode, a 3278 (except Model 1), a 3279, a 5550 family operating in CUT mode, a 6150 RT Personal Computer\*, and a 6151 RT Personal Computer.

**customizing keyboard.** A keyboard used to type in the customizing responses; this keyboard must be a Typewriter, Data Entry, APL (with APL off), or Text (with Text off) keyboard with a QWERTY layout. (On a QWERTY layout, the first six characters on the left side of the top row of alphabetic characters are Q, W, E, R, T, Y.)

## D

**data.** (1) A representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by human or automatic means. (2) Any representations such as characters or analog quantities to which meaning is or might be assigned.

**Data Entry keyboard.** A keyboard layout designed for data entry applications.

**data frame.** See *frame*.

**data stream.** (1) All data transmitted through a data channel in a single read or write operation. (2) A continuous stream of data elements being transmitted, or intended for transmission, in character or binary-digit form, using a defined format. See also *data stream format*.

**data streaming.** A protocol for transmitting data on a channel. In this protocol, the sender maintains the channel in a transmit state for an extended length of time.

**data stream format.** In SNA, the format of the data elements (end-user data) in the request unit (RU). See also *3270 data stream* and *SNA character string (SCS)*.

**data terminal equipment (DTE).** (1) That part of a data station that serves as a data source, data receiver, or both. (2) Equipment that sends or receives data, or both.

**Data Terminal Ready (DTR) flow control.** A procedure for a communicating device to signal its readiness to receive data by raising the DTR lead on an EIA 232D interface.

**data transfer.** (1) The result of the transmission of data signals from any data source to a data receiver. (2) The movement, or copying, of data from one location and the storage of the data at another location.

**default.** Pertaining to an attribute, value, or option that is assumed when none is explicitly specified.

**default destination.** A destination for display stations and printers that is defined in AEA customization.

**default response.** A response supplied by the customizing utility if a different response is not specified during customization.

**destination.** Any point or location, such as a node, station, or a particular terminal, to which information is to be sent.

**device.** (1) A mechanical, electrical, or electronic contrivance with a specific purpose. (2) An input/output unit such as a terminal, display, or printer.

**diagnostics.** Modules or tests used by computer users and service personnel to diagnose hardware problems.

**disk.** A direct-access data storage medium, which may be either flexible (diskette) or hard (fixed disk).

**diskette.** A flexible magnetic disk enclosed in a protective container.

**diskette drive.** The mechanism used to seek, read, and write data on diskettes.

**display field.** (1) An area in the display buffer that contains a set of characters that can be manipulated or operated upon as a unit. (2) A group of consecutive characters (in the buffer) that starts with an attribute character (defining the characteristics of the field) and contains one or more alphanumeric characters. The field continues to, but does not include, the next attribute character.

**display station.** An input/output device containing a display screen and an attached keyboard that allows a user to send information to or receive information from the system.

**distributed function terminal (DFT).** A programmable terminal that can perform operations previously performed by the control unit. These terminals can interpret the 3270 data stream themselves. Examples are the IBM 3270 Personal Computer and the 3290 Information Panel.

**distributed function terminal (DFT) mode.** A host-interactive mode that enables an IBM 3270 Information Display System customized in this mode to run as many as four host sessions. The sessions can emulate a 3178, 3179, 3278 Model 2, or 3279 Model S2A.

**downstream.** (1) In the direction of data flow or toward the destination of transmission. (2) From the processor toward an attached unit or end user. (3) Contrast with *upstream*.

**downstream load (DSL).** The capability of a distributed function terminal to receive its control program from the control unit to which it is attached. A disk containing the terminal's control program is loaded into the control unit.

**duplex.** Pertaining to communication in which data can be sent and received at the same time. Synonymous with *full duplex*.

## E

**Early Token Release (ETR).** In token-ring and Fiber Distributed Data Interface (FDDI) networks, a function that allows a transmitting adapter to release a new token as soon as it has completed frame transmission, whether or not the frame header has returned to that adapter.

**EBCDIC.** Extended binary-coded decimal interchange code. A coded character set consisting of 8-bit coded characters.

**emulation.** (1) The imitation of all or part of one system by another, primarily by hardware, so that the imitating system accepts the same data, executes the same programs, and achieves the same results as the imitated computer system. (2) The use of programming techniques and special machine features to permit a computing system to execute programs written for another system. (3) Imitation; for example, imitation of a computer or device. (4) See *terminal emulation*. (5) Contrast with *simulation*.

**enabled.** (1) On a LAN, pertaining to an adapter or device that is active, operational, and able to receive frames from the network. (2) Pertaining to a state of a processing unit that allows the occurrence of certain types of interruptions. (3) Pertaining to the state in which a transmission control unit or an audio response unit can accept incoming calls on a line.

**envelope.** (1) Information added to a frame or other message unit to allow it to be transmitted using a protocol other than the protocol in which the message unit originated. (2) To surround or enclose a message unit in information to allow the message unit to be transmitted using a protocol other than the protocol in which the message originated.

**extended binary-coded decimal interchange code (EBCDIC).** A coded character set consisting of 8-bit coded characters.

## F

**feature.** A part of an IBM product that may be ordered separately by the customer.

**field.** See *display field*.

**file.** A named set of records stored or processed as a unit.

**fixed disk.** A rigid magnetic disk used in a fixed disk drive.

**fixed disk drive.** A disk storage device that reads and writes on rigid magnetic disks.

**flow control.** (1) In data communication, control of the data transfer rate. (2) In SNA, the process of managing the rate at which data traffic passes between components of the network. The purpose of flow control is to optimize the rate of flow of message units with minimum congestion in the network, that is, neither to overflow the buffers at the receiver or at intermediate routing nodes nor to leave the receiver waiting for more

message units. (3) The methods used to control the flow of information across a network.

**frame.** (1) The unit of transmission in some LANs, including the IBM Token-Ring Network and the IBM PC Network. It includes delimiters, control characters, information, and checking characters. On a token-ring network, a frame is created from a token when the token has data appended to it. On a token bus network (IBM PC Network), all frames including the token frame contain a preamble, start delimiter, control address, optional data and checking characters, end delimiter, and are followed by a minimum silence period. (2) A housing for machine elements. (3) In synchronous data link control (SDLC), the vehicle for every command, every response, and all information that is transmitted using SDLC procedures. Each frame begins and ends with a flag.

**from diskette.** The diskette that provides the data to be transferred.

**from drive.** The drive that provides the data to be transferred.

**full duplex.** Synonym for *duplex*.

**function.** In NetView DM, a function is the specification of a transmission activity on a resource or group of resources. Functions are grouped into phases. In CSCM, resources are known as data objects.

## G

**gateway.** A device and its associated software that interconnect networks or systems of different architectures. The connection is usually made above the reference model network layer. For example, a gateway allows LANs access to System/370\* host computers.

**get.** In 3174 central site customizing, to select the type of data you want and store it in working copy.

**group.** (1) A set of related records that have the same value for a particular field in all records. (2) A collection of users who can share access authorities for protected resources. (3) A list of names that are known together by a single name.

## H

**hexadecimal.** (1) Pertaining to a selection, choice, or condition that has 16 possible values or states. (2) Pertaining to a fixed-radix numeration system, with radix of 16. (3) Pertaining to a numbering system with base of 16; valid numbers use the digits 0 through 9

and characters A through F, where A represents 10 and F represents 15.

**host attachment.** A mode of SNA communication in which the processor acts as a secondary SNA device.

**host logical unit (LU).** An SNA logical unit (LU) located in a host processor, for example, an ACF/VTAM\* application program.

## I

**initial microcode load (IML).** The action of loading the operational microcode.

**input/output (I/O).** (1) Pertaining to a device whose parts can perform an input process and an output process at the same time. (2) Pertaining to a functional unit or channel involved in an input process, output process, or both, concurrently or not, and to the data involved in such a process. (3) Pertaining to input, output, or both.

**interface.** (1) A shared boundary between two functional units, defined by functional characteristics, common physical interconnection characteristics, signal characteristics, and other characteristics as appropriate. (2) A shared boundary. An interface may be a hardware component to link two devices or a portion of storage or registers accessed by two or more computer programs. (3) Hardware, software, or both, that links systems, programs, or devices.

**International Organization for Standardization (ISO).** An organization of national standards bodies from various countries established to promote development of standards to facilitate international exchange of goods and services, and develop cooperation in intellectual, scientific, technological, and economic activity.

## K

**keyboard definition.** A customizing procedure for defining a maximum of four modified keyboard layouts for modifiable keyboards only. Most characters, symbols, and functions can be relocated, duplicated, or deleted from almost any keyboard position. Synonym for *modify keyboard*.

**kilobit (Kb).** One thousand binary digits.

**kilobyte (KB).** 1024 bytes for processor and data storage (memory) size; otherwise, 1000 bytes.

## L

**Library disk.** A diskette or fixed disk that contains customizing data for some or all of the controllers in a network.

**Library (LIB) diskette.** A diskette that contains customizing data for some or all of the controllers in a network.

**library member.** A file located on a Library disk that contains customizing information for a controller in a network.

**Limited Function Utility (LFU) diskette.** A diskette that contains the microcode to run only a limited number of utilities. These are: Diagnostics, Copy Files, Encrypt/Decrypt Master Key, Identify Customizing Keyboard, and Media Management. The Limited Function Utility diskette is used mainly in networks that are under central site control.

**line speed.** (1) The rate at which data is transmitted from one point to another over a telecommunication line. (2) The number of binary digits that can be sent over a telecommunication line in 1 second, expressed in bits per second (bps).

**link.** (1) The logical connection between nodes including the end-to-end link control procedures. (2) The combination of physical media, protocols, and programming that connects devices on a network. (3) In computer programming, the part of a program, in some cases a single instruction or an address, that passes control and parameters between separate portions of the computer program. (4) To interconnect items of data or portions of one or more computer programs. (5) In SNA, the combination of the link connection and link stations joining network nodes.

**local.** Pertaining to a device accessed directly without use of a telecommunication line. Synonym for *channel-attached*. Contrast with *remote*.

**local format storage.** In 3174, this function allows the controller to store pre-defined formatted screens and subsequently be viewed by a terminal user. The formatted screens are downloaded from the host into the 3174.

**location.** With reference to a 3174, a place within the 3174 chassis where a particular card or adapter is inserted.

**logical terminal (LT).** In MLT, one of five sessions available to share one display station.

**logical unit (LU).** In SNA, a port through which an end user accesses the SNA network in order to communicate with another end user and through which

the end user accesses the functions provided by system services control points (SSCPs). An LU can support at least two sessions, one with an SSCP and one with another LU, and may be capable of supporting many sessions with other logical units.

## M

**mark.** A symbol or symbols that indicate the beginning or the end of a field, a word, an item of data or a set of data such as a file, record, or block.

**Master Control diskette.** A diskette that contains the base microcode, any necessary patches, RPQs, and modified keyboard tables.

**microcode.** (1) One or more microinstructions. (2) A code, representing the instructions of an instruction set, that is implemented in a part of storage that is not program-addressable. (3) To design, write, and also to test one or more microinstructions.

**multi-host support.** In the 3174 Establishment Controller, the ability of a terminal to access more than one host at a time.

**multiple logical terminal (MLT).** In the 3174, a function that provides a CUT-attached, fixed-function display station with the ability to interact with as many as five host sessions. Each session is processed as though it were a separate display station.

## N

**name.** An alphanumeric term that identifies a data set, statement, program, or cataloged procedure.

**NetView.** A host-based IBM licensed program that provides communication network management (CNM) or communications and systems management (C&SM) services. It supersedes NCCF, NPDA, NLDM, and NPM.

**network.** (1) A configuration of data processing devices and software connected for information interchange. (2) An arrangement of nodes and connecting branches. Connections are made between data stations.

**Network Site Controller.** In 3174, any 3174 that is configured for central site change management, but does not contain the central site library. Contrast with *central site controller*.

**NRZI.** (1) Non-return-to-zero inverted transmission. (2) Non-return-to-reference transmission in which the zeros are represented by a bit cell boundary transition in the information signal, and ones are represented by the absence of a bit cell boundary transition.

## O

**online test.** A diagnostic test or data collection program that is run without interrupting the normal operation of the 3174 and its associated terminals.

**operator information area (OIA).** The area below the line near the bottom of the display area where graphics and alphanumeric characters are displayed to define the status of the terminal or the system to the operator.

**option.** (1) A specification in a statement, a selection from a menu, or a setting of a switch, that may be used to influence the execution of a program. (2) A hardware or software function that may be selected or enabled as part of a configuration process. (3) A piece of hardware (such as a network adapter) that can be installed in a device to modify or enhance device function.

## P

**packet.** (1) In data communication, a sequence of binary digits, including data and control signals, that is transmitted and switched as a composite whole. (2) Synonymous with *data frame*. Contrast with *frame*.

**parameter.** (1) A variable that is given a constant value for a specified application and that may denote the application. (2) An item in a menu for which the user specifies a value or for which the system provides a value when the menu is interpreted. (3) Data passed between programs or procedures.

**parity.** (1) A transmission error-checking scheme in which an extra bit is added to some unit of data, usually a byte, in order to make the total number of one bits even or odd. For the AEA feature, odd, even, mark, space, or no-parity coding is supported. No-parity means that no parity bit is sent or expected. Mark and space mean that the parity position is always set to one or zero, respectively, and that received parity is not checked. (2) The state of being either even-numbered or odd-numbered.

**parity (even).** A condition when the sum of all of the digits in an array of binary digits is even.

**parity (odd).** A condition when the sum of all of the digits in an array of binary digits is odd.

**password.** In computer security, a string of characters known to the computer system and a user, who must specify it to gain full or limited access to a system and to the data stored within it.

**path.** In a network, a route between any two nodes.

**patch panel.** A terminating enclosure for connecting cables.

**physical unit (PU).** In SNA, the component that manages and monitors the resources of a node, such as attached links and adjacent link stations, as requested by a system services control point (SSCP) via an SSCP-SSCP session.

**port.** (1) An access point for data entry or exit. (2) A connector on a device to which cables for other devices such as display stations and printers are attached.

**Port Expansion Feature.** In 3174, an optional feature that allows up to 32 additional 3270 type terminals to be attached. This feature provides a new terminal adapter for specific large-cluster models of the 3174.

**printer authorization matrix (PAM).** A matrix stored in the controller that establishes printer assignment and classification.

**program function (PF) key.** On a display device keyboard, a key that passes a signal to a program to call for a particular display operation. See also *program access (PA) key*.

**protocol.** (1) A set of semantic and syntactic rules that determines the behavior of functional units in achieving communication. (2) In SNA, the meanings of and the sequencing rules for requests and responses used for managing the network, transferring data, and synchronizing the states of network components. (3) A specification for the format and relative timing of information exchanged between communicating parties.

**put.** In 3174 central site customizing, to store data from the working copy into a library member.

## R

**remote.** Pertaining to a system, program, or device that is accessed through a telecommunication line.

**remove.** (1) To take an attaching device off a network. (2) To stop an adapter from participating in passing data on a network.

**request for price quotation (RPQ).** An alteration or addition to the functional capabilities that the controller provides.

**response field.** On a display device, a specified area on the display space where the user can enter, modify, or erase response data.

**Response Time Monitor (RTM).** A network management tool that measures and records the transaction times of inbound host attention (AID)

operations from display stations that communicate with the host.

**ring network.** A network configuration in which a series of attaching devices is connected by unidirectional transmission links to form a closed path. A ring of an IBM Token-Ring Network is referred to as a LAN segment or as a Token-Ring Network segment.

## S

**scroll.** To move all or part of the display image vertically or horizontally to display data that cannot be observed within a single display image.

**service access point (SAP).** (1) A logical point made available by an adapter where information can be received and transmitted. A single SAP can have many links terminating in it. (2) In Open Systems Interconnection (OSI) architecture, the logical point at which an  $n + 1$ -layer entity acquires the services of the  $n$ -layer. For LANs, the  $n$ -layer is assumed to be data link control (DLC). A single SAP can have many links terminating in it. These link "end-points" are represented in DLC by link stations.

**session.** (1) In network architecture, an association of facilities necessary for establishing, maintaining, and releasing connections for communication between stations. (2) In MLT, synonymous with logical terminal (LT). (3) In SNA, a logical connection between two network addressable units that can be activated, tailored to provide various protocols, and deactivated as requested.

**session limit.** In 3174, the total number of logical terminals or defined AEA default destinations for an AEA port set.

**station.** (1) An input or output point of a system that uses telecommunication facilities; for example, one or more systems, computers, terminals, devices, and associated programs at a particular location that can send or receive data over a telecommunication line. (2) A location in a device at which an operation is performed, for example, a read station. (3) In SNA, a link station.

**stop bit.** Synonym for *stop signal*.

**stop signal.** In start-stop transmission, a signal at the end of a character that prepares the receiving device for reception of a subsequent character. Synonymous with *stop bit*.

**storage.** A unit into which recorded text can be entered, in which it can be retained and processed, and from which it can be retrieved. See also *memory*.

**subsystem.** A secondary or subordinate system, or programming support, usually capable of operating independently of or asynchronously with a controlling system. The 3174 and its attached terminals are an example of a subsystem.

**switched line.** A telecommunication line in which the connection is established by dialing. Contrast with *nonswitched line*.

**Synchronous Data Link Control (SDLC).** A discipline conforming to subsets of the Advance Data Communication Control Procedures (ADCCP) of the American National Standards Institute (ANSI) and High-level Data Link Control (HDLC) of the International Organization for Standardization, for managing synchronous, code-transparent, serial-by-bit information transfer over a link connection. Transmission exchanges may be duplex or half-duplex over switched or nonswitched links. The configuration of the link connection may be point-to-point, multipoint, or loop. See also *binary synchronous communication (BSC)*.

**system configuration.** A process that specifies the devices and programs that form a particular data processing system.

**Systems Network Architecture (SNA).** The description of the logical structure, formats, protocols, and operational sequences for transmitting information units through, and controlling the configuration and operation of, networks.

## T

**terminal.** In data communication, a device, usually equipped with a keyboard and display device, capable of sending and receiving information.

**terminal emulation.** The capability of a microcomputer, personal computer, 3270 CUT mode display station, 3270 printer, ASCII display station, or ASCII printer to operate as if it were a particular type of terminal linked to a processing unit and to access data.

**to diskette.** The diskette that receives the transferred data.

**to drive.** The drive that receives the transferred data.

**token.** A sequence of bits passed from one device to another on the token-ring network that signifies permission to transmit over the network. It consists of a starting delimiter, an access control field, and an end delimiter. The access control field contains a bit that indicates to a receiving device that the token is ready to accept information. If a device has data to send along the network, it appends the data to the token. When data is appended, the token then becomes a frame. See *frame*.



**token ring.** A network with a ring topology that passes tokens from one attaching device (node) to another. A node that is ready to send can capture a token and insert data for transmission.

**token-ring network.** (1) A ring network that allows unidirectional data transmission between data stations by a token-passing procedure over one transmission medium so that the transmitted data returns to and is removed by the transmitting station. The IBM Token-Ring Network is a baseband LAN with a star-wired ring topology that passes tokens from network adapter to network adapter. (2) A network that uses a ring topology, in which tokens are passed in a sequence from node to node. A node that is ready to send can capture the token and insert data for transmission. (3) A group of interconnected token rings.

**trace.** (1) A record of the execution of a computer program. It exhibits the sequences in which the instructions were executed. (2) A record of the frames and bytes transmitted on a network.

**translate table.** A table that defines the translation of ASCII to EBCDIC and EBCDIC to ASCII and that allows the use of special characters and nonstandard codes.

**transparency.** See *transparent*

**transparent.** (1) Pertaining to operations or data that are of no significance to the user. (2) In data transmission, pertaining to information not recognized by the receiving program or device as transmission control characters.

## U

**upgrade.** In 3174 central site customizing, to select a library member and upgrade its data to the microcode level of the Central Site Customizing Utility disk.

**upstream.** (1) In the direction opposite to data flow or toward the source of transmission. (2) Toward the

processor from an attached unit or end user. (3) Contrast with *downstream*.

**Utility disk.** A diskette or fixed disk that contains the microcode necessary to run various utilities, for example, to copy portions of a diskette for a backup diskette.

**Utility (UTL) diskette.** A diskette that contains the microcode necessary to run various utilities, for example, to copy portions of a diskette for a backup diskette.

## V

**version.** A separate IBM-licensed program, based on an existing IBM-licensed program, that usually has significant new code or new function.

**virtual circuit.** Synonym for *virtual connection*.

**virtual connection.** (1) A connection between two nodes on the network that is established using the transport layer and that provides reliable data between nodes. (2) A logical connection established between two data terminal equipment (DTE) devices. Synonymous with *virtual circuit*.

## W

**wraparound.** The continuation of an operation (for example, a read operation or a cursor movement operation) from the last character position in a buffer to the first character position in the buffer.

**write.** To make a permanent or transient recording of data in a storage device or on a data medium.



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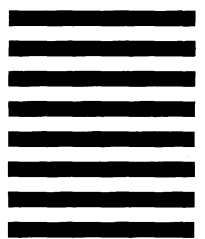
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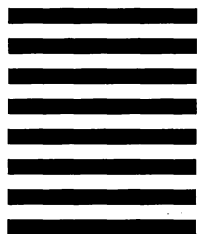
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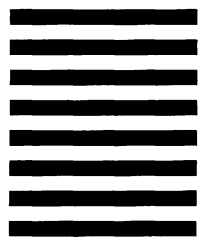
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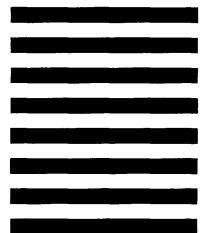
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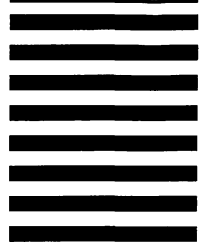
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