DX10 3270 Interactive Communications Software (ICS) Object Installation

Part No. 2250942-9701 *D
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Contents

READ THIS DOCUMENT BEFORE ATTEMPTING TO USE THIS OBJECT KIT. IT DESCRIBES THE DX10 3270 ICS OBJECT INSTALLATION MEDIA, PART NUMBERS 2276832-1601 AND 2276832-1603.

TEXAS INSTRUMENTS ASSUMES NO RESPONSIBILITY FOR MODIFICATIONS MADE TO THIS OBJECT KIT.

Section 1

Introduction

1.1 GENERAL INFORMATION

This document describes the installation of the DX10 3270 Interactive Communications Software (ICS) object package for the DX10 operating system (release 3.6 or later). The installation procedure employs the DX10 3270 ICS object medium supplied by Texas Instruments Incorporated. You can restore the medium to disk (if supplied on magnetic tape) or use it directly (if supplied on disk). Consult the Release Information, DX10 3270 Interactive Communications Software (ICS), Release 2.2.0, part number 2250945-9901, before attempting to install ICS.

Be sure to make a backup copy of the released object before executing the installation procedures. For copy procedures, refer to the DX10 Operating System Operations Guide (Volume II), part number 946250-9702.

DX10 3270 ICS uses the DX10 Common Communications Device Service Routine (DSR) Software. The DX10 Common Communications DSR Software supports the following communications protocols:

* 3270 ICS
* 3780/2780 Emulators
* X.25 Remote File Transfer (RFT)

If your system is to include either the 3780/2780 or the X.25 RFT packages along with ICS, review the guides for those packages before beginning the installation procedures. These four communications packages share the common communications DSR. Refer to the DX10 Common Communications DSR Object Installation guide, part number 2302696-9701, for information on installing the common communications DSR parts.

The Remote Terminal Subsystem (RTS) does not use the DX10 Common Communications DSR. However, if your system includes RTS, you must install and generate your RTS before you install and generate the DX10 operating system or any other communications package.

You can execute all DX10 commands in this document by entering the command in condensed format or by using interactive prompting from the System Command Interpreter (SCI). For a discussion of

the SCI commands, refer to the DX10 Operating System Operations Guide.

1.2 MEDIA DEFINITION

Product shipments are made in the following formats:

Media	Definition
Disk	A DS10, DS25, DS50, DS80, CD1400, DS200, or DS300 disk pack, an 8-inch double-sided, double-density (DSDD) diskette (FD1000) or a 5 1/4-inch DSDD (FD300) containing the object
Magnetic tape	An 800 bits-per-inch (bpi) or 1600 bpi magnetic tape containing the object
Add-on	A disk pack containing the object and other software products

The installation instructions in this document assume that the object files are accessible by a synonym. Section 2 describes how to prepare the media so that you can access the files in this way.

1.3 INSTALLATION OVERVIEW

The installation procedure describes the steps to generate a DX10 system that includes 3270 ICS support as follows:

1. If your system includes RTS, you must install and generate RTS before continuing to the next step. Note that you cannot use the Business System 300 (S300) as a host for the RTS 915 terminal.

2. Install the communications commands installation procedures using the Install Communications Commands (ICC) SCI command.

3. If your system includes either the 3780/2780 Emulators or the X.25 RFT, read the installation documents for these packages before continuing to the next step.

4. Install the communications DSR installation procedure. Refer to the DX10 Common Communications DSR Object Installation guide, part number 2302696-9701, for information on the DSR installation procedures.

5. Generate a DX10 operating system configuration using the Execute System Generation (XGEN) utility. Perform only the XGEN step of a system configuration at this time. Refer to the DX10 Common Communications DSR Object Installation guide for instructions on generating a DX10 system with communications support.

6. Generate the 3270 ICS DSR. Refer to the DX10 Common Communications DSR Object Installation guide for instructions on generating the 3270 ICS DSR.

7. Assemble and link the system using the Assemble and Link Generated System (ALGS) command.

8. Patch the system using the Patch Generated System (PGS) command and apply DX10 3270 ICS DSR patches using the Patch Communications System (PCS) command. You can also use PCS to apply patches to the operating system. Refer to the DX10 Common Communications DSR Object Installation guide for instructions on using the PCS command.

9. Install the download utilities for the four-channel communications controller (FCCC) and bit-oriented, character-oriented/asynchronous interface module (BCAIM). Refer to the DX10 Common Communications DSR Object Installation guide for information on installing the download utilities.

10. Generate the 3270 ICS Emulator tasks.

11. Generate the ICS Execute Poll Analyzer (XPA) procedure.

12. Modify the Initialize System (IS) procedure and the M$01 procedure.

1.4 SYSTEM REQUIREMENTS

To perform this installation procedure successfully, you must have a functioning DX10 system (release 3.6 or later).

Section 2

Preparing for Installation

2.1 INTRODUCTION

Before executing the installation commands, you must make the media containing the object files accessible to the batch stream. The following paragraphs describe how to prepare each type of media.

2.2 DISK FORMAT

If you receive the object on a disk, perform the following steps to prepare it for installation:

1. Insert the object installation disk named DXO3270 in an available drive. Make the drive ready and disable the write protection.

2. Install the disk using the following Install Volume (IV) command:

   IV U=<DSxx>, V=DXO3270

   where:

   DSxx is the drive containing the object installation disk.

3. Proceed to Section 3 to begin generating a DX10 system with 3270 ICS support.

2.3 MAGNETIC TAPE FORMAT

If you receive the object on magnetic tape, you must restore the files to a disk before beginning the installation process. Perform the following steps:

1. Insert a disk to contain the object files in an available drive. Make the drive ready and disable the write protection.

2. Install the disk using the following Install Volume (IV) command:

   ```
   IV U=DSxx, V=<volume name>
   ```

   where:

DSxx	is the name of the drive.
<volume name>	is the name of the disk to be installed.

3. Create a directory on the disk <volume name> using the following Create File Directory (CFDIR) command:

   ```
   CFDIR P=<volume name>.DXO3270, M=20
   ```

4. Mount the magnetic tape on an available tape drive (MTxx) and make it ready.

5. Restore the contents of the magnetic tape to the directory you created on the disk <volume name> using the Restore Directory (RD) command as follows:

   ```
   RD S=MTxx, D=<volume name>.DXO3270, L=.LISTING
   ```

   The file .LISTING now contains a listing of the directory restored from the magnetic tape. You can examine this file by executing the following Show File (SF) command:

   ```
   SF F=.LISTING
   ```

6. Unload the tape.

7. Assign the synonym DXO3270 to the pathname of the restored directory using the following Assign Synonym (AS) command:

   AS S=DXO3270, V=<volume name>.DXO3270

   where:

   <volume name> must be the name of the volume that received the restored directory when you executed the RD command in step 5.

8. Proceed to Section 3 to begin generating a DX10 system with 3270 ICS support.

2.4 ADD-ON FORMAT

If you receive the DX10 3270 ICS object as an add-on package to a DX10 operating system, the object files already reside on a disk as follows:

* If on the system disk, under the directory named .DXO3270
* If on a disk other than the system disk, under the directory named <volume name>.DXO3270

When the object arrives as an add-on package, perform the following steps to prepare it for installation:

1. Insert the disk that holds the add-on package in an available drive on a functioning DX10 system and make the drive ready. Disable the write protection for the disk drive.
2. Install the disk using the following Install Volume (IV) command:

   IV U=DSxx, V=<volume name>

   where:

   DSxx is the disk drive containing the volume.

   <volume name> is the name marked on the add-on disk.

Use the following Show Volume Status (SVS) command to determine the volume name:

```
SVS D=DSxx
```

3. Assign the synonym DXO3270 to the object directory on the add-on disk using the following Assign Synonym (AS) command:

```
AS S=DXO3270, V=<volume name>.DXO3270
```

4. Proceed to Section 3 to begin generating a DX10 system with 3270 ICS support.

Section 3

Installing the Communications Commands Installation Procedure

3.1 INSTALLING THE COMMUNICATIONS COMMANDS INSTALLATION PROCEDURE

Use the following procedure to install the communications commands installation procedure on the DX10 system:

1. Insert the 3270 object disk in an available drive on a functioning DX10 system (release 3.6 or later) and make the drive ready.

2. Install the object disk using the following Install Volume (IV) command:

```
IV U=DSxx, V=DXO3270
```

where:

DSxx is the drive containing the object disk.

1. Enter the following command to access the object directory:

```
.USE DXO3270, .S$PROC
```

2. Place the communications installation procedures on the system disk using the following Install Communications Command (ICC):

```
INSTALL COMMUNICATIONS COMMANDS
            SYSGEN DATA VOLUME: <volume name>
  EMULATOR OBJECT ACCESS NAME: DXO3270
```

* SYSGEN DATA VOLUME -- Enter the volume name where the DX10 system generation parts directory (.S$SYSGEN) resides. The response to this prompt must be the same volume name that you enter in response to the DATA DISK/VOLUME prompt of the XGEN utility. Do not use a device name, such as DS01.

* EMULATOR OBJECT ACCESS NAME -- Enter the pathname of the DX10 3270 object package. The displayed initial value is DXO3270, which is either the volume name of the object media or a previously assigned synonym whose value is the directory containing the files from the object media.

3.2 EXECUTING THE COMMUNICATIONS COMMANDS INSTALLATION PROCEDURE

After you respond to the last prompt of the ICC command, a batch stream executes that updates the 3270 installation command procedures. After the batch steam executes, the 3270 DSR parts are copied to the DX10 system generation parts directory (.S$SYSGEN.DXCMO) on the volume name you entered in response to the SYSTEM DATA DISK/VOLUME prompt.

The following message appears when the update installation procedure batch stream terminates:

n ERRORS REPORTED IN $CVN.PPR3270

where:

$CVN is the synonym for the directory pathname entered in response to the EMULATOR OBJECT ACCESS NAME prompt.

If n is not equal to zero, examine the file $CVN.PPR3270 to determine the cause of the error(s). Take the appropriate action to correct the error(s) and restart the ICC procedure.

The file $CVN.LSTICC lists the copied 3270 DSR files. Examine this file to determine the cause of any error(s) returned by the Copy Directory (CD) command. Take the appropriate action to correct the error(s) and restart the ICC procedure. $CVN is the directory pathname entered in response to the EMULATOR OBJECT ACCESS NAME prompt.

After successfuly executing the ICC procedure, execute the .USE procedure to return to the main DX10 menu. Refer to the DX10 Common Communications DSR Object Installation guide, part number 2302696-9701, for instructions on installing the communications DSR and generating a DX10 system.

NOTE

If your system includes either the 3780/2780 Emulators or the X.25 RFT, read the installation documents for these packages before proceeding to the DX10 Common Communications DSR Object Installation guide.

After installing the communications DSR and generating a DX10 system, proceed to Section 4 of this document for instructions on installing the 3270 ICS tasks.

Section 4

Installing the 3270 ICS Tasks

4.1 TASK INSTALLATION OVERVIEW

Perform the following steps to generate a DX10 operating system that supports the 3270 ICS package:

1. Enter the Q$SYN command to delete unneeded synonym assignments.

2. Enter the following command to access the object directory:

```
.USE DXO3270.S$PROC,.S$PROC
```

3. Execute the Build Emulator Tasks (BET) command to build the 3270 ICS tasks, procedures, local format directory, and PSC run-time library.

Refer to paragraph 4.3 for applying any task patches you receive after your communications system is installed.

4.2 GENERATING THE DX10 3270 ICS TASKS

Before attempting to generate the ICS tasks, make sure that no one is using any ICS task. You cannot generate the ICS tasks if an existing ICS task is active on your system. If you already have release 2.2 of ICS installed and active on your system, and are building a new system that resides on the system disk, perform an Initial Program Load (IPL) before attempting to generate the ICS tasks. Do not execute the BET command until you have successfully installed the DX10 Common DSR and DX10 3270 DSR. Refer to the DX10 Common Communications DSR Object Installation guide for information on installing the DX10 Common DSR and 3270 DSR.

Execute the DX10 3270 ICS task installation procedure, using the Build Emulator Tasks (BET) command as follows:

```
[ ] BET

BUILD 3270 ICS TASKS
            SYSGEN DATA VOLUME:
                 TARGET VOLUME:
                   SYSTEM NAME:
        LISTING DIRECTORY NAME:
  EMULATOR OBJECT ACCESS NAME: DXO3270
      PSC OBJECT LIBRARY NAME:
```

SYSGEN DATA VOLUME

Enter the volume name of the disk where the DX10 system generation parts directory resides. Do not use a disk drive name, such as DS01.

TARGET VOLUME

Enter the volume name of the disk where the system being built is to reside. This disk must already be installed. Your response to this prompt must be the same as your response to the TARGET DISK prompt of the ALGS command. Do not use a disk drive name, such as DS01.

SYSTEM NAME

Enter the name you specified in response to the OUTPUT CONFIGURATION prompt of the XGEN utility. Do not use a disk drive name, such as DS01.

LISTING DIRECTORY NAME

Enter the name of the directory used to hold the listing files. If the directory is precreated, it must have at least five entries. If it is not precreated, the BET command will create it. If a **0026 error occurs, ignore it. If DXO3270 is a DSDD diskette, specify a directory that is not on DXO3270 for the listing directory.

Save this directory and remember the directory name. When patching the task at a later date using the PT3270 command, enter this name in response to the LISTING DIRECTORY NAME prompt for PT3270 (see paragraph 4.3).

EMULATOR OBJECT ACCESS NAME

Enter the pathname of the directory containing the ICS object modules. This should be DX03270, the same response that you entered in response to the EMULATOR OBJECT ACCESS NAME prompt of the ICC command.

PSC OBJECT LIBRARY NAME

Enter the name of the destination directory where the Programmed Station Control (PSC) run-time object is to reside. If this directory is precreated, it must have at least 27 entries. If the directory does not exist, the BET command creates it. Do not enter a device name as part of the directory pathname, such as DS01.<directory name>. If the directory exists but is not large enough, BET will abort. You should either delete the existing directory or use a different pathname.

If you do not intend to use PSC or wish to leave the PSC run-time object on the installed media, enter a null value in response to this prompt.

4.2.1 3270 ICS Task Definition

After reponding to the set of prompts for the BET command, the following set of task definition prompts appear:

```
DEFINE 3270 ICS COMMUNICATIONS LINE (CMxx) PARAMETERS
  IBM CONTROLLER ADDRESS(0-31):
   HIGHEST TERMINAL ADDR(0-31):
   RCV BUFFER POOL SIZE(BYTES): 3840
    LOCAL FORMAT FILE?(YES/NO): YES
```

You can accept the displayed values by pressing the RETURN key or respond to the prompts as follows:

IBM CONTROLLER ADDRESS(0-31)

Enter the decimal equivalent, from 0 through 31, of the IBM EBCDIC poll address. The decimal equivalents for the EBCDIC IBM control unit addresses are as follows:

Line or Terminal Address (Decimal)	IBM Address (EBCDIC)*	Line or Terminal Address (Decimal)	IBM Address (EBCDIC)*
00	>40	16	>50
01	>C1	17	>D1
02	>C2	18	>D2
03	>C3	19	>D3
04	>C4	20	>D4
05	>C5	21	>D5
06	>C6	22	>D6
07	>C7	23	>D7
08	>C8	24	>D8
09	>C9	25	>D9
10	>4A	26	>5A
11	>4B	27	>5B
12	>4C	28	>5C
13	>4D	29	>5D
14	>4E	30	>5E
15	>4F	31	>5F

Note:
* A right angle bracket (>) preceding a value indicates that it is hexadecimal number.

For example, if the desired IBM EBCDIC address is >40, enter 0. The people responsible for the system generation on the host computer should provide this address.

HIGHEST TERMINAL ADDR(0-31)

Enter the highest terminal address to be reserved for this ICS line. This decimal number must be in the range from 0 through 31 and correspond to the IBM EBCDIC address. Section 2 of the DX10 3270 ICS User's Guide gives further information on responses to this prompt.

RCV BUFFER POOL SIZE(BYTES)

Enter the number of bytes you want to reserve for the receive buffer pool on this communications line. The minimum value is 3,840 bytes, and the maximum value is 6,400 bytes. If you enter a value outside of this range, no error is reported. The BET task does not necessarily use the value you select, but rounds up the value based on internal data structure sizes. Use the following list to determine the value actually used, where x is the value you entered:

Value Entered (x)	Value Used
$x \leq 3840$	3840
$x \geq 6080$	6400

You should use the initial value (3840). If problems related to receiving data from the host occur, execute the List Interactive Communications Statistics (LICS) command. If the LICS command indicates that buffer errors occured, reinstall ICS, and select a larger buffer size. The buffer size appropriate for your configuration depends on the following factors:

* Number of ICS stations active on your 990 system -- Each additional active station uses more buffer area.

* Line speed -- Faster line speeds require more buffer area than slower line speeds.

* Host message length -- When generating a screen image for a single station, several short messages received use more buffer area than one long message. This is due to the additional overhead required.

Consult the Release Information, DX10 3270 ICS, Release 2.2.0, for further information concerning receive buffer pools.

LOCAL FORMAT FILE?(YES/NO)

Enter either YES or NO. The initial value is YES. This procedure creates a directory large enough to hold one local format file for each reserved terminal address for each installed ICS line. Local format files store the contents of the host buffers (printer data or display images) when the ICS station polled is in an idle or suspended state. Section 4 of the DX10 3270 ICS User's Guide discusses local format files and how ICS uses them. The following is the pathname template for local format files:

<target volume>.S$ICS.CMxxTMyy

where:

xx represents the numerical portion of the ICS communications controller device name.

yy represents the decimal terminal address.

After you respond to the LOCAL FORMAT FILE? prompt, the following set of prompts appear:

```
DEFINE 3270 ICS TERMINAL ADDRESS 0 STATION TYPE
                    CRT/PRT: CRT
  INITIAL PRINTER PATHNAME: LP$1
```

You can accept the displayed values by pressing the RETURN key or respond to the prompts as follows:

CRT/PRT

Enter either CRT to define a video display type station or PRT to define a printer type station.

INITIAL PRINTER PATHNAME

Your response to this prompt defines the first default value of the printer pathname for this terminal address. When you activate an ICS display or printer station, ICS does not display an initial value for the PRINT KEY PATHNAME and OUTPUT PATHNAME prompts. If you enter a null value, ICS uses the default value. The default value is the value you assigned to that terminal address the last time that it was activated. If no one has activated that terminal address since the last initial program load (IPL), ICS uses the value that you enter in response to this prompt. If you respond to this prompt with DUMY, no initial default printer pathname is assigned.

After you define terminal address 0, the preceding two prompts are displayed to define terminal address 1. These two prompts are displayed until you have defined the type of the last terminal address on the ICS line (the response to

HIGHEST TERMINAL ADDR(0-31) prompt). If you entered more than one ICS line in XGEN and defined the type for each terminal address on the first ICS line, prompts appear again to define the second ICS line. After you define the type of each terminal address on each declared ICS line, you are ready to begin the task generation process.

NOTE

Since you must install terminal addresses contiguously and your host might not use all reserved terminal addresses, ICS allows you to disable those terminal addresses that are reserved but not recognized by your host. For instance, if your host configuration uses terminal address eight but does not use terminal address seven, you must disable terminal address seven. Refer to paragraph 6.2.4 for information on modifying ICS configurations.

4.2.2 Task Generation

After you respond to the final prompt during definition of the 3270 ICS task parameters, the following prompt appears:

```
ENTER <CR> TO START TASK GENERATION PROCESS:
```

<CR> refers to the RETURN key. Press the RETURN key to start the task generation process.

To abort the process, enter NO and press the RETURN key. If you abort the process, go to paragraph 4.2 and reexecute the BET command.

If you press the RETURN key to start the task generation process, the prompt remains on the screen until the process completes. When the process completes, the following message appears:

```
TASK GENERATION COMPLETE
```

Press the RETURN key to display the first of a series of messages, each indicating the number of errors occurring during one phase of the generation process. Press the RETURN key again to display subsequent messages. Each message appears on the bottom of the screen.

If the number of errors reported in any of these messages is nonzero, examine the file named in the message to determine the cause of the error(s). Take appropriate action where necessary, and restart the task generation process. Paragraph 4.2.3 lists all possible completion messages.

Occasionally, the task build process reports a >3B error from the Copy Directory (CD) command executed in a batch stream. This error indicates that one of the ICS procedures being replaced was in use. If this error occurs, you must reexecute the BET command as described in paragraph 4.2. Ensure that no one is using ICS before reexecuting the BET command.

When the task generation completes successfully with no errors, proceed to Section 5.

CAUTION

If you press the CMD key at any point during the task generation process, the TASK GENERATION COMPLETE message appears even though the batch streams are still executing in background.

You can execute the Show File (SF) command on the batch listing file and follow the task installation as it is executing. The following is the pathname of the batch listing file:

<listing-directory-name>.BATLST.TSKOI327

where:

<listing-directory-name>	represents the value you entered in response to the LISTING DIRECTORY NAME of the BET command.

4.2.3 Error Messages

This paragraph lists the error messages that appear at the end of the task generation process. The messages include the pathname of the batch listing file that you should inspect when errors are reported. $CLST represents a synonym assigned to the listing directory name you entered in response to the BET command LISTING DIRECTORY NAME prompt as discussed in paragraph 4.2.

Message (Errors/Listing File) and Process Steps

0 ERRORS REPORTED IN $CLST.BATLST.TSKOI327
3270 ICS task installation process

0 ERRORS IN PATCH STREAM $CLST.BATLST.TSKPT327
3270 ICS task patch process

If either or both these messages are not displayed at the completion of the BET command, examine both batch listing files. Take the appropriate action to correct the error(s) and reexecute the BET command.

The BET command can generate the following error messages while attempting to create directories:

ERROR nn IN CREATING $PSC

ERROR nn IN CREATING $CLST

ERROR nn IN CREATING $CLST.BATLST

ERROR nn IN CREATING $CLST.BAT

ERROR nn IN CREATING $CLST.LST

Refer to the DX10 Operating System Error Reporting and Recovery Manual (Volume VI), part number 946250-9706, for an explanation of error nn. Take the appropriate action to correct the error(s) and reexecute the BET command.

4.3 PATCHING THE 3270 ICS TASK AT A LATER DATE

During the initial 3270 ICS system installation, patches are automatically applied to the 3270 ICS tasks. You can apply patches that are available after installation by using the Patch 3270 ICS Communications Tasks (PT3270) command as follows:

1. Insert the DX10 3270 ICS object disk in an available drive and make the drive ready. Execute the following Install Volume (IV) command:

   IV U=<DSxx>,V=DXO3270

   where:

   DSxx is the name of the drive containing the ICS object disk.

2. Insert the disk volume that contains the new patches in an available drive and make it ready. Execute the following IV command:

   IV U=<DSxx>,V=<volume>

   where:

   DSxx is the name of the drive.

   <volume> is the name of the disk volume containing the patches.

3. Use the Copy/Concatenate (CC) command to copy the new patch file to the ICS object disk patch directory as follows:

   CC I=<volume.file>,O=DXO3270.PAT.TSK3270,R=Y

   where:

   <volume.file> represents the pathname of the file containing the new patches.

   The indicated file receives the new patches.

4. Enter the PT3270 command as follows:

```
[ ] PT3270

PATCH 3270 ICS COMMUNICATIONS TASKS
        TARGET DISK/VOLUME:
EMULATOR OBJECT ACCESS NAME:
    LISTING DIRECTORY NAME:
```

Respond to the prompts as follows:

TARGET DISK/VOLUME
Enter the volume name of the target system disk.

EMULATOR OBJECT ACCESS NAME
Enter the pathname used throughout communications installation for this prompt.

LISTING DIRECTORY NAME
Enter the pathname of the listing volume (or directory) that you specified in the BET command (paragraph 3.2). The task link map generated during task installation should reside under this listing directory name under the following directory:

<volume-directory>.LST.TSKMAP

If the link map does not reside under this directory, you cannot patch the task using the PT3270 command. To patch the ICS tasks when the link map is not available, follow the instructions in the patch file DXO3270.PAT.TSK3270. The batch stream listing for the task patch batch stream is placed under the pathname <volume.directory>.BATLST.TSKPT327.

5. When PT3270 execution terminates, the following message appears at the bottom of the screen:

```
3270 ICS TASK PATCH PROCESS COMPLETE
```

Press the RETURN key to display the completion message that indicates the number of errors that occurred during the patching process. The message appears at the bottom of the screen. $CLST represents a synonym assigned to the listing directory name you entered in response to the LISTING DIRECTORY NAME prompt. The following are examples of a completion messages:

```
0 ERRORS IN PATCH STREAM $CLST.BATLST.TSKPT327
nn PATCH SYNONYM ERRORS IN $CLST.BAT.TSKPT327
```

If the number of errors indicated in the message or by nn is nonzero, examine the listing file named in the message to determine the cause of the error(s). Take appropriate action if necessary, and reenter the PT3270 command.

Section 5

Generating the ICS XPA Command Procedure

ICS provides the Execute Poll Analyzer (XPA) procedure that samples the polls and selects from the host. Generate the XPA procedure after you generate, install, and patch the DX10 operating system, the communications DSR, and the ICS tasks. The generation of XPA resolves the references to the ICS communications controller ports, which vary according to your configuration. You can execute the Generate ICS XPA (GENXPA) command procedure at any time after you generate, install, and patch the operating system and ICS.

If you have more than one system name that contains ICS on the same target volume and you want to change systems, you can regenerate the XPA command procedure for the second system using the GENXPA procedure at any time. GENXPA can generate an XPA command procedure for any available system, not just the system you are currently using.

To execute the GENXPA command, enter GENXPA and respond to the following prompts:

```
[ ] GENXPA

GENERATE ICS XPA COMMAND PROCEDURE
   SYSGEN DATA DISK/VOLUME:
        TARGET DISK/VOLUME:
               SYSTEM NAME:
EMULATOR OBJECT ACCESS NAME:
       LISTING ACCESS NAME:
```

SYSGEN DATA DISK/VOLUME

Enter the volume name of the disk containing the DX10 system generation parts directory (.S$SYSGEN). The response to this prompt must match the response entered for the same prompt when executing the BET command.

TARGET DISK/VOLUME

Enter the volume name that contains the .S$PROC library where you want the XPA procedure to reside. The GENXPA procedure writes the generated XPA command procedure to:

<target volume>.S$$PROC.XPA.

where:

<target volume> is the value you specify in response to the TARGET VOLUME prompt.

SYSTEM NAME

Enter the name you assigned to the system during the XGEN procedure.

EMULATOR OBJECT ACCESS NAME

Enter the pathname of the volume (or directory) containing the ICS object modules. This directory is under the volume name DX03270 unless you moved the directory to another location or received the 3270 ICS object as an add-on package.

LISTING ACCESS NAME

Enter the pathname of the file where you want the GENXPA procedure to write its batch stream listing. GENXPA automatically creates this file if the file does not exist, and the specified directory exists, and is not full.

If the following message appears, you can assume that XPA generated successfully.

nn ERROR(S) IN $CLST

where:

$CLST is a synonym for the file specified in response to the LISTING ACCESS NAME prompt of GENXPA.

If the following messages appear, an error has occurred:

```
nn ERROR(S) IN $CVN.BAT.GENXPA
```

Examine the listing file, correct the error, and reexecute GENXPA

```
*GENXPA - NO COMMON IDT IN
 <sysgen disk/volume.S$SYSGEN.<system name>.LINKMAP
```

No communication DSR was generated for this system name

```
*GENXPA ERR:  nn IN GENXPA TASK
```

Refer to the DX10 Operating System Error Reporting and Recovery Manual (Volume VI), part number 946250-9706, to determine the meaning of the error nn. Correct the problem and reexecute the GENXPA command.

Section 6

Modifying the IS Procedure and the M$01 Procedure

6.1 INTRODUCTION

The final steps to 3270 ICS installation are preparing the download utilities and modifying the Initialize System (IS) command. Paragraph 6.2 explains four modifications to the IS command. This paragraph also recommends that you modify the IS procedure to disable any terminal addresses not recognized by your host. Paragraph 6.3 explains modifying the M$01 procedure to include the QICT command.

6.2 MODIFYING THE IS PROCEDURE

To set up the process for automatic downloading, the final step is to edit the IS command procedure. Use the Text Editor utility to modify the IS file .S$PROC.IS. If you have reserved terminal addresses that your host does not recognize, you should also modify your IS procedure so that it disables these terminal addresses. If you intend to use a control unit address other than the one that you assign during installation, you must make this modification before you activate the line. Paragraph 6.2.3 further explains these recommendations. The automatic initialization of any ICS configuration requires the addition of three procedures to the IS procedure:

* Assign Global LUNO (AGL) >22 to the ICS program file
* Modify LUNO Protection (MLP) to protect global LUNO >22
* Execute ICS Communications Controller (XICC)

If one of your ICS lines uses a BCAIM or FCCC, the automatic initialization of ICS requires that you add the Communications Device Download (CDL) procedure to the IS procedure. The CDL procedure must be placed before the XICC/ in the IS procedure. Refer to paragraphs 2.4.3 and 7.4.1 of the DX10 Common Communications DSR Object Installation guide for further information on adding the CDL procedure. In addition to these modifications, some configurations may use the modifications described in paragraph 6.2.3.

The order in which you enter these procedures in the IS procedure is important. The XICC procedure execution should follow the

other ICS modifications. You should place these entries near the end of the file. You can group them together with comments identifying them as ICS requirements, or you can place the LUNO assignment among the other required system LUNOs.

6.2.1 Installing the AGL Procedure

The ICS package uses global LUNO >22. Since you need to make this assignment after each IPL, place it in your IS procedure as follows:

```
AGL          LUNO = >22,
    ACCESS NAME = .S$COMMPF,
  PROGRAM FILE? = YES
```

You should also enter an appropriate comment to document the assignment.

6.2.2 Installing the MLP Procedure

You need to protect the LUNO assigned in the previous step from deletion. Add the following lines after the AGL procedure entry:

```
MLP     P = P,
    LUNO = >22
```

Add a comment to explain why this LUNO needs to be protected.

6.2.3 Configuration-Dependent Recommendations

This paragraph describes how to modify the IS procedure to make the following changes on your configuration:

* Modify the control unit address of an installed ICS line using the Modify Control Unit Address (MCUA) command

* Disable terminal addresses not recognized by your 3270-compatible host (or change terminal type) using the Modify Interactive Communications Configuration (MICC) command

Neither of these modifications are necessary for most configurations. Usually, you install the control unit address that you require when generating ICS, and the host computer is configured to recognize terminal addresses sequentially (as ICS does).

6.2.3.1 Modifying the Control Unit Address. ICS provides a procedure that modifies the control unit address of an inactive ICS line. Section 4 of the DX10 3270 ICS User's Guide describes the MCUA command in detail. If you need to make this modification, you must do it before you activate the line using XICC. To do this, add the following line in your IS procedure immediately before the XICC command for the communications line you wish to modify:

```
MCUA COMMUNICATIONS LINE NAME = xx, CONTROL UNIT ADDRESS = yy
```

where:

xx represents the communications controller device name.

yy represents the desired decimal control unit address (0 through 31).

Remember that this must appear before the ICS line is activated.

6.2.3.2 Disabling Terminal Addresses and Changing Terminal Type. If your host does not recognize all of the terminal addresses that you reserved during installation, you can disable them to avoid confusion. You can disable any inactive ICS terminal address at any time. To automate the disabling of unused terminal addresses add the following lines for each terminal address you wish to disable in your IS procedure:

```
MICC COMMNNICATIONS LINE NAME = xx,
              TERMINAL ADDRESS = yy,
                         STATE = DISABLED,
                 TERMINAL TYPE =
```

where:

xx is the communications controller device name.

yy is the decimal terminal address (0 through 31).

This command must be placed before the XICC command in the IS procedure, and should be put with the other ICS-related commands to facilitate maintenance. You should also include comments that explain why these lines appear in the IS procedure and what they do.

6.2.4 Installing the XICC Procedure

Because the ICS task automatically selects the first installed inactive ICS line as the only parameter to this procedure, no parameters are required. Enter the following XICC command:

```
XICC/
```

If you have two ICS lines installed on your system, enter the command twice. See Section 4 of the DX10 3270 ICS User's Guide for a complete explanation of the XICC command.

6.3 MODIFYING THE M$01 PROCEDURE

You may want to add the QICT command to the M$01 procedure, on the .S$PROC command procedure directory, to release any ICS terminal addresses that are in a suspended state when you log-off SCI. You can accomplish this by adding the following lines to the M$01 procedure:

```
.IF @$$MO, EQ, 0F      !VDT Mode
   QICT COMM=CMxx      !ICS COMM Device Name
        .                   .
        .                   .
        .                   .
   .SYN $CPT=""
.ENDIF
```